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APRIL 2006

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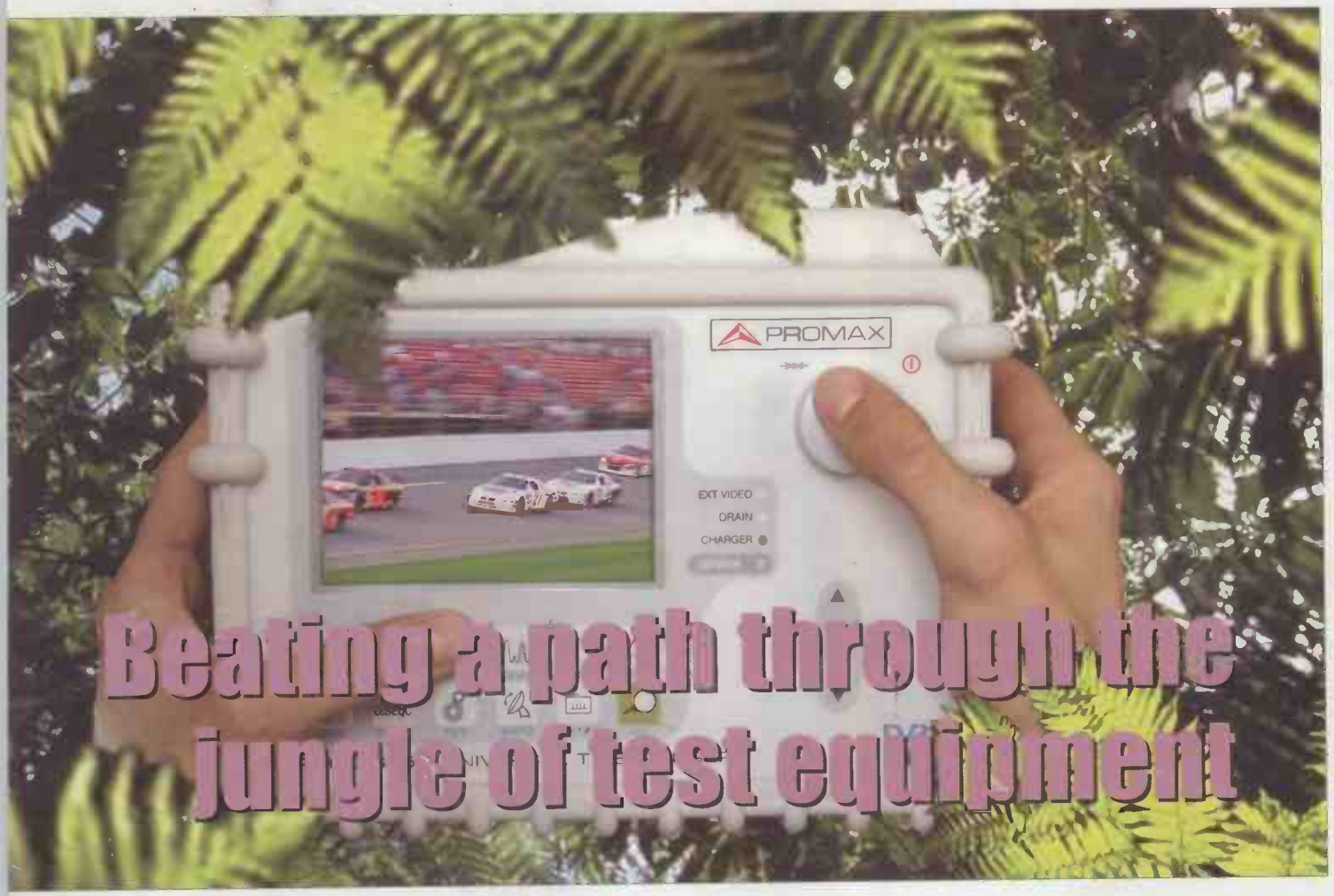

Beating a path through the jungle of test equipment

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Even more new models added this month!

Brand	Model	IRC No	Brand	Model	IRC No
Alba	STB1X1	IRC83079	Matsui	DTR 1	IRC83079
Alba	STBX3	IRC83106	Matsui	DTR 2	IRC83079
Audioline	FTA3000	IRC83101	Matsui	DTR3	IRC83079
Black Diamond	BD65DSF	IRC83079	Matsui	TUTV1	IRC83114
Black Diamond	BD68STB	IRC83079	Nokia	121T	IRC83078
Bush	DFTA 1X1	IRC83079	Nokia	221T	IRC83078
Bush	DFTA1	IRC83079	Packard Bell	TCX170	IRC83109
Bush	DFTA3	IRC83114	Panasonic	TUCT20	IRC83088
Daewoo	DS608P	IRC83082	Panasonic	TUCT30	IRC83088
Daewoo	DS700D	IRC83114	Philips	DTR100	IRC83101
Digifusion	FRT100	IRC83108	Philips	DTR1500	IRC83083
Digifusion	FRT101	IRC83108	Philips	DTX6370	IRC83087
Digifusion	FRT101T	IRC83114	Philips	DTX6371	IRC83087
Digifusion	FVRT100	IRC83107	Philips	DTX6372	IRC83087
Digifusion	FVRT150	IRC83107	Portland	DP100	IRC83082
Dijam	32VU DVB-T	IRC83082	Sagem	ITD58	IRC83105
Ferguson	FDT2000	IRC83077	Sagem	ITD59	IRC83105
Ferguson	FDT500	IRC83077	Sagem	ITD60	IRC83105
Ferguson	FDT600	IRC83077	Sagem	ITD601	IRC83105
Ferguson	FDTT2500	IRC83115	Sagem	ITD602	IRC83105
Fusion	FRT100	IRC83108	Sagem	ITD61	IRC83105
Fusion	FRT101	IRC83108	Sagem	ITD611	IRC83105
Fusion	FRT101T	IRC83114	Sagem	ITD62	IRC83105
Fusion	FVRT100	IRC83107	Sagem	ITD64	IRC83105
Fusion	FVRT150	IRC83107	Sagem	ITD66	IRC83105
Goodmans	GDB1	IRC83079	Sagem	ITD68	IRC83105
Goodmans	GDB2	IRC83079	Sagem	ITD72	IRC83105
Goodmans	GDB3	IRC83079	Sony	VTX-D800U	IRC83112
Goodmans	GDB4	IRC83079	Tatung	TFR100G	IRC83108
Goodmans	GDB5	IRC83104	Technosonic	STB2014T	IRC83101
Grundig	GDT1000	IRC83081	Techwood	TWDFV1	IRC83079
Grundig	GDT1500	IRC83081	Tevion	STB714	IRC83101
Grundig	GDT2000	IRC83077	Thomson	DHD4000	IRC83086
Hitachi	HDB60	IRC83079	Thomson	DTI1000	IRC83080
Humax	MG-TU1	IRC83115	Thomson	DTI1002	IRC83080
Labgear	DTT100	IRC83082	Thomson	DTI2300	IRC83086
Lodos	DVB-T3	IRC83079	Thomson	DTI2305	IRC83086
Logik	LDR1	IRC83079	Thomson	DTI550	IRC83080
Matsui	DTAR10	IRC83104	Triax	DVB2000T	IRC83082

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NEXUS
MEDIA COMMUNICATIONS

Muddle of Media Center

I have been trying to find out what my readers need to do to become builders of Microsoft's Media Center PCs.

A Microsoft spokesman told me: "We do not provide a boxed review product for Windows XP Media Center as the Media Center OS comes as part of a complete Media Center machine.

"In terms of Vista, we are currently at Beta 1 stage, which is very much developer focused and has been quite limited. We will put your name on the list to receive Beta 2 and send it to you when it arrives."

I explained that as *Television* is a specialist engineering business-to-business title, I am more interested in OS software for PC system builders than in complete machines of the type that would be covered by consumer magazines.

I sent Microsoft a couple of recent issues of the magazine to give the an idea of the type of article I write (basically, how to build a PC from the basic components, how to upgrade, service, etc).

In other words, my aim is to inform my readers of the new opportunities afforded by becoming a builder of Microsoft Media Center PCs, the costs including software, special requirements, etc. I would aim to do this by means of a review of the OS software.

I thanked him anyway for putting my name down on the Beta 2 list for Vista and said I looked forward to seeing the product.

I have not heard anything back since then, but I hope he or someone from Microsoft will come back to me soon and let me know.

A helping hand

This month, I have given coverage to an organisation that I have had the pleasure of working with for over five years - the Electrical and Electronics Industries Benevolent Association (EEIBA).

I have supported EEIBA all these years, and although I have myself made some provisions for my own pension, it is comforting to know that there is an organisation that other people from our industry can turn to.

The EEIBA can help us, but it too needs help in turn. There are many different ways in which you can help EEIBA to raise funds to help the many people who need it.

The Powerball offers guests a riot of fun! There are clowns and magicians, party games, balloons and goodies bags, and a kaleidoscope of visual and musical entertainment.

There are many EEIBA golf tournaments across the UK, offering those who take part the opportunity to win a trophy, to win prizes, to network with their contemporaries, to entertain, and to help those in need.

There are national and local events to help raise funds from golf days, dinner dances and angling competitions to sporting club dinners.

Another way to help is by taking part in the EEIBA's Transformer Prize Draw Club.

By taking part in the Prize Draw you have a chance of winning a top prize of £1,000, 2nd Prize of £500, 3rd prize of £100 4th and 5th prizes of £50 each month.

Whether you are currently employed or retired from the electrical/electronics industries, you are eligible to take part in Transformer Prize Draw Club.

Each entry into the draw costs just £1 per number. The lucky winners are chosen at random by computer on the last Friday in the month.

You can also make a personal or company donation. Much of the charity's income comes from donations.

EEIBA can help set up and advise companies on a number of easy to manage contribution schemes, which can also be tax effective.

Leaving something to EEIBA in your Will is an enduring way to support the charity and help it to continue its work in the future. Legacies can also help to avoid or reduce tax on your estate.

There are several ways in which you can leave gifts to both your loved ones and your favourite causes.

You can also become an EEIBA Industry Senator. Many senior figures occupying prominent positions within our industry have already become Industry Senators.

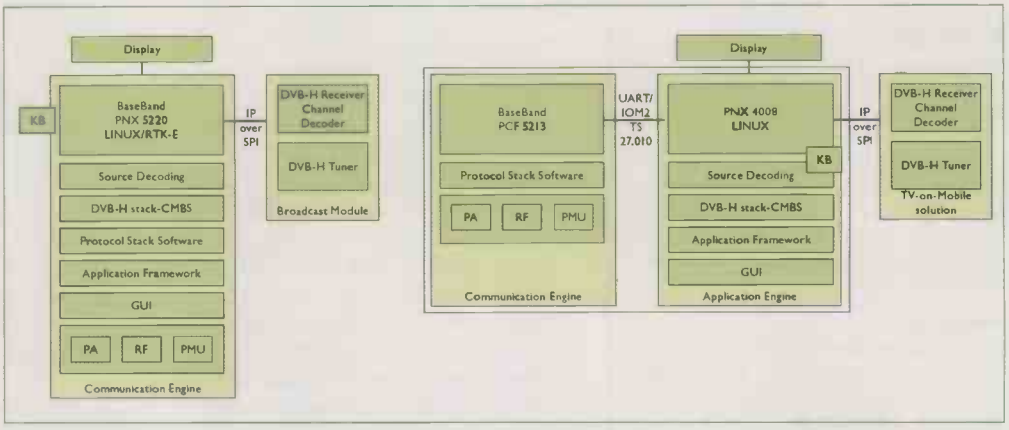
Philips slashes DVB-H chip area by six

Philips Electronics announced its next generation TV-on-mobile chip, which is six times smaller than previous versions.

Philips new Digital Video Broadcast – Handheld (DVB-H) front-end chip, BGT215, measures 7x7 mm, a significantly reduced footprint when compared with the previous 15x26 mm version.

It addresses both the tuner and channel demodulation functions. The chip delivers low power consumption, which offers consumers the ability to watch TV for longer before needing to recharge.

"The challenge for silicon designers in mobile phones is to achieve the additional functionality within a similar power budget and printed circuit board area to meet end-equipment size and battery constraints," said Alan Brown, a Research Director at Gartner.



"Philips second generation solution for the European and Asian markets demonstrates its continued commitment to the DVB-H standard," said Jouni Kamarainen, BMCO Forum Vice Chairman and Nokia representative.

"For the market to prosper commercially, driven technologies are required to deliver high quality content on a mass-market scale."

The BGT215 solution for TV-on-mobile contains all of the functionality of a complete digital TV front-end receiver.

"Our complete TV-on-mobile solution is compatible with previous versions and our Nexperia cellular system solutions for 3G," said GertJan Kaat, senior vice president and general manager, Mobile & Personal Business Unit, Philips Semiconductors.

C&W sells off radio spectrum

Cable and Wireless (C&W) has agreed to sell six 28GHz fixed wireless-access licences to Libera, a company that offers wireless broadband to business customers.

This is first sale of radio spectrum by a UK telco and comes in the wake of C&W's announcement that it aims to shed up to half of its work force within five years.

The company said it envisaged cutting staff from the current 5,500 to between 2,500 and 3,500 as it concentrates on fewer and larger corporate customers, while reducing the complexity in its products and systems.

The company said it plans to reduce its customer base from about 30,000 customers to about 3,000 large corporate customers and public institutions.

In January, C&W unveiled plans to split into two business units and said CEO Francesco Caio would leave at the end of March. John Pluthero, chairman of C&W has told staff to expect "hell for the next 12 months", and has already warned staff that 485 positions have been earmarked for the axe.

"That's just the start," Pluthero said in a memo sent to C&W staff. "As we reduce the number of customers we serve, fix some of our problems, strip out layers of management, we will need fewer people to run the business... If you are worried that it all sounds very hard, it's time for you to step off the bus. This is no longer a place for the timid."

Pluthero was damning about the state of the UK telecoms market in general, and gave C&W's own performance a slating.

"Congratulations, we work for an underperforming business in a crappy industry and it's going to be hell for the next 12 months," he wrote.

The telecoms market has suffered in recent years from debts and overcapacity created in the boom times of the late 1990s. C&W, which must compete in the UK with a dominant BT, has suffered from low prices.

Its decision to buy Bulldog has also been questioned after the ISP suffered widespread problems getting new customers connected.

C&W has been losing jobs since last August.

Blitz that display

Blitz, a UK technical staging specialist, recently invested in Toshiba's Technorainbow TR 2006R 6mm curvable indoor LED display.

Blitz invested £500K in one of the most compact and lightweight screens (9Kg per panel) in its class allowing for easy transportation and assembly.

Designed to create maximum impact indoors, the TR 2006R's 6mm pixel pitch displays over a billion colours and is said to deliver outstanding picture quality with a 170° view from any angle.

The curved LED wall with SMD (Surface Mount Display) is suited for real time video display at any TV studio set design whilst being ideal for use at corporate events.

Jeff Bailey, Head of Division for Blitz TV Services explains: "This is currently the only screen to offer configurations for both concave and convex imagery and demonstrates our commitment to offering top end high quality 6mm LED screens.

"To make studios more captivating, television production companies are always keen to add new features using the latest in technology.

A curved LED display should whet a few creative appetites."

In addition, Blitz has also invested just over £100K in the purchase of an extra eight Panasonic PT-D7700 projectors bringing the current inventory total, of these popular units, to 18.

Featuring SXGA + resolution, the projectors deliver 7000-lumen brightness and up to 4000:1 contrast ratio making them ideal for auditoriums and conference rooms.

Orange offers BBC clips

Orange is to offer clips and ringtones from BBC shows such as 'The Office,' 'Little Britain' and 'Doctor Who.'

Users will be able to purchase ringtones, photos or videos. Similar deals have been struck by other mobile phone operators to build traffic on 3G. BSkyB recently agreed to offer content on Vodafone's network.

"BBC Worldwide is looking to move towards non-traditional broadcasting vehicles, and this partnership with Orange is a testimony to that," said Jason Blain, BBC Worldwide director of business development.

Customers subscribing to Orange's Orange World service will pay £3.50 for a 'realtone' taken from one of the BBC shows.

SMG Television slashes 55 posts

The Stage newdesk has reported that SMG Television is axing 55 jobs from its Scottish and Grampian programming arms.

The move follows the decision by media regulator Ofcom to allow the media giant to cut back on its public service broadcasting commitments.

The reduction in the amount of employees is a little less than the 59 redundancies that the organisation originally predicted.

SMG added that it was working with unions on proceedings and added it hoped that most of the redundancies would be voluntary.

Donald Emslie, chief executive of SMG Television, said: "The process we are going through is necessary to enable SMG Television's success to continue in an increasingly competitive multi-channel environment.

"Exercises like this are never easy but I'm pleased that we are on our way to achieving what is needed essentially through volunteers."

The decision to drop staffing levels was also as a result of the organisation's planned relocation to new studios at Glasgow's Pacific Quay later this year.

Among those taking voluntary redundancy are news anchors Sarah Heaney and Shereen Nanjiani and sports presenter Jane Lewis, who will be leaving over the course of the next few months.

Toshiba and LG in patent-sharing pact

Toshiba and LG Electronics have signed a cross-licensing agreement to allow each to use the other's patented optical disc technologies.

The accord covers disc, disc drive and disc player-recorder technologies that the companies have international patents on.

The two firms hope the pact will reduce the time and costs needed to develop advanced optical disc products, including DVDs.

HDMI Switch upgrade displays

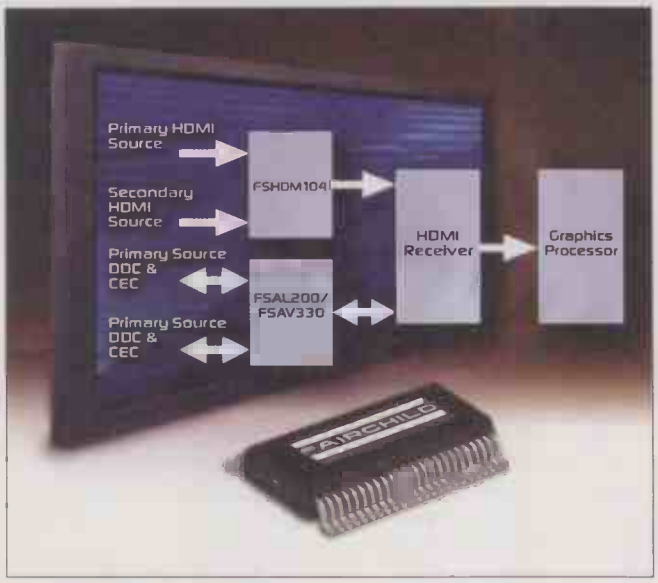
Fairchild Semiconductor now offers a 1.65Gbps high-definition multi-media interface (HDMI) switch, allowing designers to add a second HDMI input to the circuitry in an existing display application.

The FSHDMI04 switch can be utilised in an HDTV, for example, to enable connectivity between multiple applications such as DVDs, game consoles and set-top boxes.

Compared to traditional designs requiring a separate receiver to add an HDMI connection, the FSHDMI04 speeds design-cycle times by increasing functionality while reducing design complexity.

"HDMI connectivity is expected to soon become as ubiquitous as USB connections are now," said Jerry Johnston, Fairchild's product manager for Analogue Switches.

"The popularity of home theatres is driving this demand for displays with multiple HDMI inputs so that consumers can have two applications, such as a digital set-top box and a game station, hooked up to their high-definition TV.



"Our new high-bandwidth HDMI switch allows system designers to easily add a second port to their HDMI products without changing internal aspects of the application, or redesigning for an extra feature."

With the industry's highest ESD rating (8kV, all pins), the FSHDMI04 protects against system damage while eliminating the need for additional ESD-protection ICs.

It also offers the industry's lowest on-capacitance (6.0pF typical/7.0pF maximum) and is the only HDMI switch to meet HDMI inter- and intra-pair skew specifications.

Additional benefits for the FSHDMI04 include:

- Supports data rates up to 1.65Gbps, per channel, for HDMI up to 1080p resolution and digital visual interface (DVI) connections for resolutions up to UXGA;
- High bandwidth (1GHz Rl=50 Ohms, 900MHz Rl=50 Ohms cl=5pF) for passing high-frequency digital data;
- Inter- and intra-pair skew maximum specification (150ps max); and
- Low power consumption (1µA max) for applications requiring lower power.

Available in a lead-free 48-lead QVSOP package, the FSHDMI04 meets or exceeds the requirements of the joint IPC/JEDEC standard J-STD-020B and is compliant with the European Union requirements now in effect.

Tandberg MPEG-2 at Torino

Tandberg Television provided MPEG-2 video compression technology to NBC during the network's coverage of the 2006 Winter Olympics from Torino, Italy.

Tandberg Television's digital TV systems played a role in the delivery of footage of both standard (SD) and high definition (HD) video from the NBC broadcast center in Torino and across its US network.

NBC's employment of Tandberg Television's compression technology enabled the network to manage bandwidth for the most cost-effective delivery of HD content.

Tandberg Television has been facilitating the delivery of HD content for more than seven years and has been a provider of compression technology for NBC and its Skypath Network System since 2001.

"Every minute of NBC's Olympic Winter Games coverage from Torino was delivered to the United States using our state-of-the-art technology," says Reggie Bradford, President, Tandberg Television.

"We were pleased to work with NBC as it fulfilled its commitment to delivering an outstanding broadcast of the Olympic Winter Games to millions of viewers across America."

"Tandberg Television played an instrumental role in helping us design and build a broadcast infrastructure that created the best possible winter Olympics experience for our viewers," said David Mazza, senior vice president of engineering, NBC Olympics.

"We had a tremendous number of compressed feeds from all over Torino and the US, moving both SD and HD pictures on both wired and wireless links. With Tandberg Television's help we have employed a number of new and aggressive production techniques in moving HD pictures from place to place. We could not have done all this without their support."

Energy Saving Trust accredits Sharp LCD TV

Three models in Sharp's forthcoming 'P70 Series' LCD TV range have been awarded the Energy Saving Trust's 'energy saving recommended endorsement' for their low energy consumption and contribution to reducing carbon dioxide emissions (CO2).

Sharp is one of the first LCD TV manufacturers to receive this certification in the UK, and the Company's accredited models are now listed on the Energy Saving Trust's web site at: www.est.org.uk/recommended, which signposts consumers to the most energy efficient products on the market.

Certificates are only awarded to digital products that comply with the following requirements:

- Products that use less or equal to 1.5 watts of energy on standby
- Products that use less or equal to 250 watts in operation (or 'on' mode)

Philip Sellwood, chief executive of the Energy Saving Trust said: "Our recent research reveals that over half of consumers plan to spend more on energy efficient products over the next 12 months and 80 per cent would like to be recommended more energy efficient products and services.

"So it's crucial that manufacturers respond by developing more energy efficient products - we are pleased to see Sharp taking up this challenge and would encourage other manufacturers to follow this lead."

Sharp forecasts that the UK market for LCD TVs will double by the end of this year and expects demand to approach three million units, from a total TV market size of six million per year. Most of these

TVs will incorporate a 'Freeview' digital tuner, which can be very power-hungry in standby mode.

Gary Pearson, Sharp's head of product planning, said: "It is essential that this new generation of flat panel TVs are energy efficient, in addition to looking stylish in the home, and we urge customers to consider energy efficiency as part of their purchase decision."

TI unveils mobile TV chip

Texas Instruments its Hollywood mobile TV single-chip solution at the 3GSM World Congress in Barcelona. Visitors to the TI booth experienced live broadcast TV from the DVB-H network in Barcelona.

The demonstration included TI's DTV1000 Hollywood single-chip solution, TI's OMAP2420 device, PacketVideo's pvTV client solution and Silicon & Software Systems'(S3's) onHandTV DVB-H CBMS software stack.

TI's Hollywood chip plus OMAP2420 processor enable the reception and processing of the DVB-H signal. TI's Hollywood chip is an integrated tuner, demodulator and decoder on one piece of silicon.

The Hollywood chip receives the DVB-H signal and outputs the IP video stream to the OMAP processor. The OMAP2420 decodes the IP stream and renders the colour-rich video and stereo audio to the mobile phone's screen and speakers.

The OMAP2420 is a feature-rich applications processor capable of rendering the audio/video (30fps, HE AAC+) and managing security including conditional access (CA) and digital rights management (DRM) solutions.

"TI's family of Hollywood single-chip mobile broadcasting solutions have hit the market at the right time to intersect with DVB-H commercial service launches coming in late 2006-early 2007 around the world," said Marc Cetto, general manager of TI's Mobile Connectivity Solutions.

"Through the demonstration of TI's Hollywood chip and OMAP processor with PacketVideo and S3, visitors to the TI booth at 3GSM will be able to experience what the entire mobile DTV industry is working towards - crisp, clear and live broadcast mobile TV."

Grass Valley deliver Olympics in HD

Grass Valley multi-format high-definition (HD) production equipment and systems will bring the drama and fast-paced action of the 20th Olympic Winter Games to millions of viewers around the world.

Coverage is being provided by a number of leading outside broadcast specialists, each of which rely on Grass Valley cameras, switchers and other products.

The opening ceremony in Torino's Olympic Stadium on Friday, February 10th was beamed to the US in HD by UK-based outside broadcast specialist NEP Visions.

The company has two trucks in Italy for the Olympics, each using numerous Grass Valley LDK 6000 cameras, Grass Valley Kalypso HD Video Production Switchers, Grass Valley HD routers and Grass Valley HD modular products.

As well as covering the opening and closing ceremonies, the two NEP Visions HD trucks were at the figure skating and ice hockey competitions

In addition, several Grass Valley KayakHD video production switchers, some shipped as flyaway kits by rental house Presteigne Broadcast Rental and event staging company Creative Technology (London), will be employed in and around Torino for use by major television networks in the U.S. and worldwide to supplement their HD coverage of the action.

STM low-power video encoder?

STMicroelectronics has announced two new digital encoders, the STw8009 and STw8019, which provide a high-quality TV-Out feature for portable applications such as mobile phones, digital cameras, video players and PDAs.

The new encoders convert digital video and still image data to analogue TV signals, compatible with most worldwide TV standards, enabling users to share pictures and video from their handheld devices on a standard TV screen.

By integrating the essential TV-Out functions onto the chip, the STw8009/19 devices offer the most cost-effective solution on the market for this increasingly popular mobile feature.

The devices achieve the optimum mix of features to satisfy the constraints of portable products, in terms of supply voltages, supply current, PCB area and cost.

The STw8009/19's 'smart partitioning' moves image processing functions to the mobile terminal's host processor and the digital-TV encoding and analog conversion to the STw8009/19.

Google: "Surfing overtakes TV"

Surfing the Web has topped watching TV in terms of our favourite pastime, according new Google survey.

The survey of more than 1,000 adults ages 16 to 64 found that on average, residents in the UK spend 164 minutes online every day compared to 148 minutes watching television.

Men are the biggest Net users, averaging 172 minutes a day compared to 156 minutes a day for women. Shopping is one of the most popular online activities. And Londoners spend the most time and the most money on the Web.

Meanwhile The BBC and ITV have joined forces to trial the continuous broadcast of their television channels over the internet.

The BBC-ITV trial is to test 'multicasting", a system that allows people to watch simultaneously using just one high-quality signal. During the trial the BBC and ITV will feed their pictures to ISPs such as Plusnet and Cable & Wireless.

Tinopolis adopts Panasonic for HD

Tinopolis, a Llanelli-based independent television production company has moved into HD with the purchase of Panasonic DVCPRO HD equipment.

Tinopolis has ordered DVCPRO HD cameras, recorders and other equipment worth over £300,000.

The HD equipment will be used on 'Wedi 7', the Welsh Language soap programme both from the company's Llanelli base and Tinopolis' North Wales studio in Caernarfon.

Production will digitise material straight into a central storage system, which will improve workflow in its busy production centre.

Tinopolis Executive Chairman, Ron Jones, said: "Tinopolis was one of the first companies to go fully digital over seven years ago and we are proud to be pioneering the move to high definition.

"Our commitment is to continually increase the quality of our programmes. DVCPRO HD will ensure our daily programming, drama and documentary production is ahead of the game in delivering that quality."

Angharad Mair, presenter and editor of Wedi 7 commented: "The beauty of DVCPRO HD technology is that it streamlines the production process, making us more responsive as well.

Samsung claims world's first 82" LCD TV

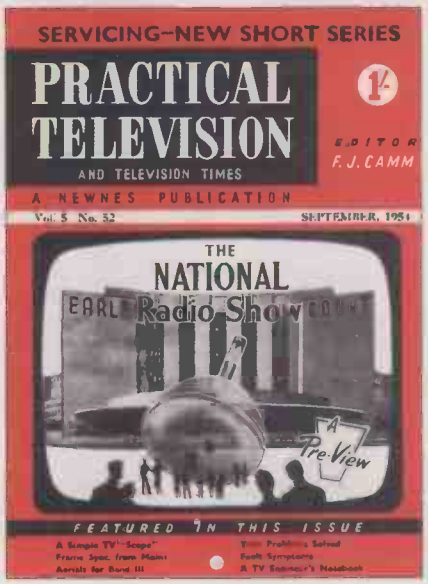
Samsung Electronics unveiled an 82" LCD TV with LED backlight, claimed to be the world's largest of its kind, at the CeBIT 2006 exhibition in Hanover.

It is said to offer improved performance and viewing angle while decreasing thickness and power usage. The 82" LCD TV with LED enlarges the color reproduction area by more than 33% compared to conventional LCD TVs.

Dynamic Contrast technology, Samsung's proprietary contrast enhancement technology, allows for a high contrast ratio of 7000: In addition, it does not use mercury.

50+ years ago

By Keith Wilson



In 1954, the National Radio Show was a major event

In April 1956, Practical Television still wasn't being published because of the printers' strike mentioned in the last issue. Normal service will be resumed in May but, in the meantime, let's visit the 1954 Radio Show.

Make no mistake, in 1954 the National Radio Show at Earls Court was a Big Event – big enough for Practical Television to provide show coverage in no fewer than three consecutive issues.

But, of course, in those days we had our own radio and television industry, and British manufacturers would naturally choose a British show to launch their newest and most innovative products.

Really big pictures are clearly nothing new!

So, what were they showing? The Pye stand had a demonstration of 3D television, although the Practical Television reporter is quick to point out that there was little prospect of 3D making it into the home. How right he was!

More important news, however, was that many of the sets at the show featured multi-channel tuners, in readiness for the start of ITV transmissions in Band III. Turret tuners from Plessey were a popular choice, but an alternative from Valradio, which used sliding brass and dust cores to provide continuous coverage, was also on show.

To allow the demonstration of multi-channel sets, television signals at 189.75 MHz were provided throughout the show as, in 1954, there were, of course, no regular Band III broadcasts.

Projection sets were also much in evidence. Most were undoubtedly based on the famous 2-inch Philips MW6-2 projection tube with its matching Schmidt optical system, but the show report mentions that HMV sets used a new 3.75-inch tube, and consequently produced a brighter picture.

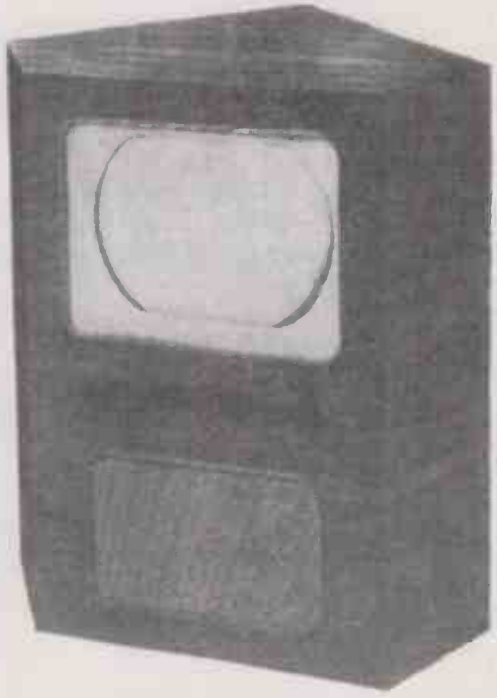
The "all your eggs in one basket" approach

It would be interesting to know who made the tubes, and whether these sets ever went into production.

The picture size produced by the largest projection sets is quoted as 48 x 36 inches, equivalent to a 60-inch diagonal. Suddenly, today's screen sizes don't seem quite so impressive.

But wait – this was the era of 405-line transmissions. The line structure must have been horribly apparent, especially if the usual poor interlace of the period reduced the effective quality to around 200 lines.

The price of the HMV projection receiver is quoted as 175 guineas (£183.75) which, according to an on-line site, which computes present-day values of historical prices on the basis of average earnings, is



The Ambassador corners well!

equivalent to around £9,000 in today's money. I bet they did not sell many of those.

Almost equally expensive were the combined television and radiograms, which featured strongly. A model from Regentone, for example, cost 149 guineas (£156.45).

The show report states that the rise in popularity of these models was a result of the availability of space-saving rectangular tubes with wide-angle deflection. At the time, wide angle almost certainly meant 90 degrees.

The best of the TV radiograms were ready for yet another new development, FM broadcasting, which was to start within a year of the show. No matter how many features they crammed in, however, it is hard see these monsters as a good buy.

With all their complexity and heat-generating valve circuitry, reliability must have been poor. On the other hand, that was probably very good news for the servicing trade.

The Practical Television reporter seems to have been a little confused over new circuit developments, appearing to suggest at one point that flywheel sync and AVC "first introduced last year" are one and the same. He (and it almost certainly would have been a he) does get it right, however, whenever he mentions that the benefits would be most appreciated in fringe areas. In 1954, there were a lot of those.

The modest table model, mainstay of 1950s television

Let us round off with a slightly quirky set – the Ambassador console (floor-standing) model. This had an almost triangular cabinet, and was designed to fit snugly into the corner of a room. A space-saving arrangement, no doubt, so long as you were happy with the set in the corner. Should you ever wish to re-arrange your furniture, however, your options were surely rather limited.

In 1954, there was no colour television (at least, not at the show), no video recorders, no CD players. In fact, there was hardly any of the entertainment equipment we take for granted today. Yet there was enough variety, innovation and public interest to sustain a huge show at Earls Court. How times change.

Letters

Send letters to Television, Nexus Media Communications, Media House, Azalea Drive, Swanley, Kent, BR8 8HU

Email – TVeditor@nexusmedia.com

using subject heading 'Television Letters'

50+ Years Ago

I read with interest the article in the March issue called '50+ Years Ago'.

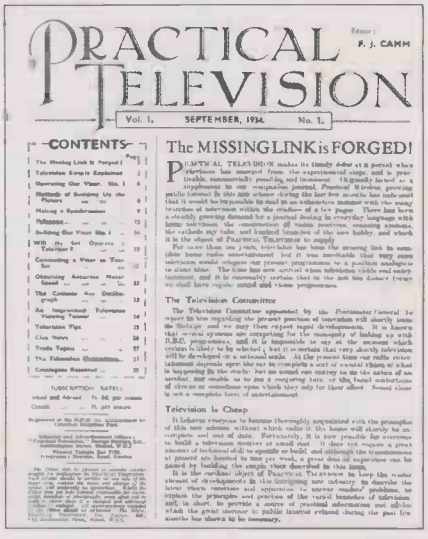
The magazine issue pictured in the article as the first edition looked odd to me. I found my copy of the first edition to discover that it was dated September 1934 not April 1950.

It was edited by FJ Camm as was the one you featured and it was published by Newnes as well. I can only assume that the original magazine series ceased during the period of the war and was restarted in 1950.

I have scanned the front cover and page one to show you the editor and publisher (Ed: please see Donald Bullock's Servicing commentary for this image).

I have also scanned the centrefold project, which is the construction of a Televisor.

Reg Killingley, Whetstone, Leicester.



PRACTICAL TELEVISION

Editor: F. J. CAMM

Vol. 1. SEPTEMBER, 1934. No. 1.

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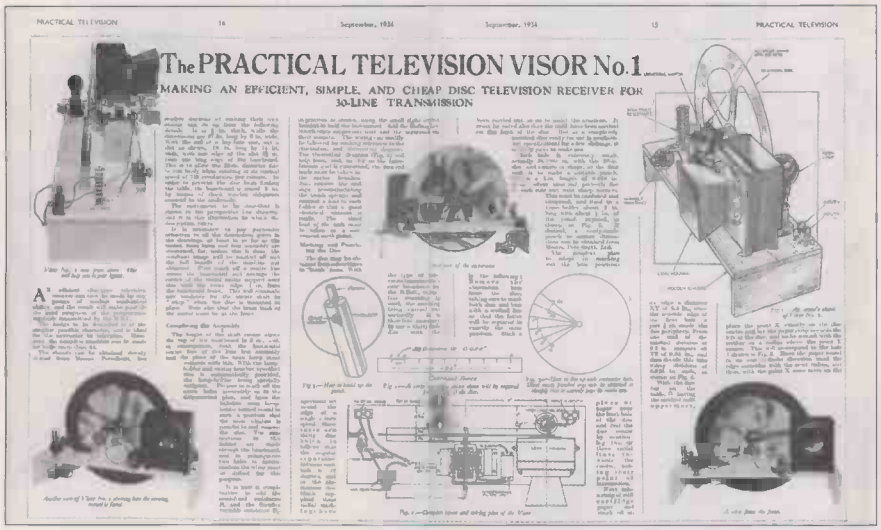
The MISSING LINK is FORGED!



The PRACTICAL TELEVISION VISOR No. 1

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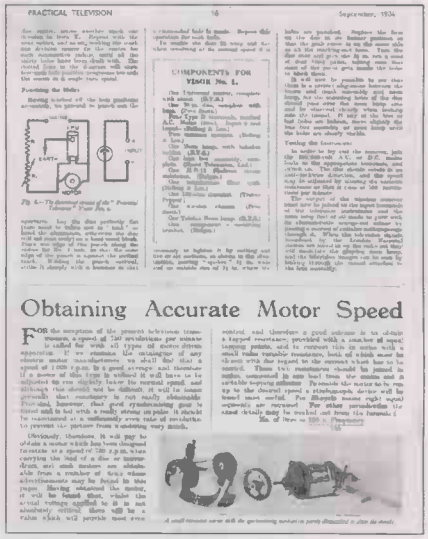


Obtaining Accurate Motor Speed

Ekco U29 small table set

No doubt I will be one of the many older readers interested in antique radio to spot the 'Schematic Typo' on page 283 March issue. Check out the connection of the lower end of R12 with the description of the 'corrected circuit'. I also checked the quoted article in Radiophile by Chas Miller, which is correct.

Jim Dorans, Saffron Walden, Essex

Life of LCD screens

I have read various articles in the magazine giving highly detailed information on LCD Screens but have not been able to answer this question: how does the average life expectancy of an LCD Screen differ from a CRT?

Extended warranty insurers make no premium loading for TVs with LCD Screens, so I would presume around 5 years plus in normal use?

I think that I've seen a statement that it is the back-light that is most likely to fail and that they are rated at around 50,000 hours to mean failure time.

I have a Bush LCD where the back-light has failed in about 12 months of 'light' use as a monitor run from a VCR by direct composite line input. Your readers' opinions over averages would be appreciated.

Clifford Parrish (by email)

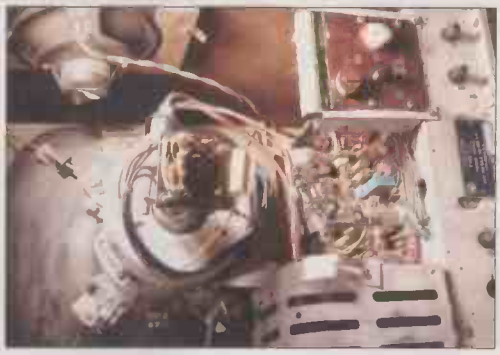
Band III converter

The Band III converter described in last month's letter by N Crisp reminded me of an event in 1964, when my boss told me that his uncle had to have his leg amputated, and could I make his TV a bit easier for him to control?

I found a sterling converter as in your picture, and by extending the TV mains lead to the converters on off switch, and the aerial lead from the window to the converter and back to the TV aerial socket.

With the TV switched on and set to BBC1 CH2, with all the levels set like volume contrast and brilliance, Uncle could now switch on his TV and change channels from the converter without moving his chair. It was quick and did not involve pulling the TV apart.

With regards to the article on 405-line TV (page 304), I have just



finished servicing a Pye RTL17 (picture enclosed).

At this age all the capacitors in the set have to be changed, and in the frame stage all the resistors as well, or you will not get good linearity - also most of the resistors in the video and synch separator. Careful attention needs to be paid to the line timebase and output stage, making sure the insulation is OK as well.

The AGC diodes were left in, as no equivalent modern semiconductor could be found. The set worked OK, so the mask was repainted and the cabinet re-sprayed. The set brought £8 at auction. I will not be doing any more, except I have three more sets to repair all for friends.

Jim Littler, Wigan, Lancs

Test Case 520

Most of the TV sets that are economically viable for repair these days tend to be large ones, and large means heavy and awkward, especially heavy in the case of CRT types. Why are so many repair workshops upstairs? It did not matter so much in the days of smaller and lighter picture tubes.

The cause of this burst of angst is a certain Philips TV set, model 32PW6006, which came in for servicing recently. The symptom reported was 'no-go, chirping', and the first thing the workshop lads did was check if it was fitted with the notorious A10E chassis, governed by the dreaded painter chip.

No, this model carries the simpler and more friendly LO1.1E chassis. Relieved, Real Technician took it onto his bench and removed the rear cover. He found that the chirping noise was coming from the chopper transformer in the power supply section. It did not take long to discover that this was due to a heavy load on its secondary side: the 140V line was looking into a short circuit.

This is going to be an easy one, thought Real Technician as he isolated the legs of line deflection transistor 7460 and measured shorts between all three of them. There was no other discernible problem in the line output stage. A common cause of failure of line deflection transistors is dry joints at the driver transformer, here No. 5461.

Even though they all looked sound, RT gave each of its pins a freshening up with lead-free solder before fitting a new BU4508DX transistor, the only one in the stores. RT checked that the 140V line gave a correct reading on an ohmeter before confidently switching the set on. As on so many previous occasions, this turned out to be pride before a fall, for the set failed to come on; there was now a different type of squawk from the chopper transistor.

The new transistor lasted only a few tens of seconds before it too went short-circuit. Real Technician switched off the supply to the set and went to check the replacement device. He found that it was too hot to touch. Could it have been a poor quality, even a 'fake' one? There was no indication of where it had come from.

Our man ordered a 'McCoy' replacement from Philips, then, and meanwhile checked the flyback transformer with his trusty LOPT tester. This test (though of course it is not infallible) indicated that the transformer was OK. Onto the waiting-spares rack went the TV, then, and onto another job went RT, still with some doubt about this one.

A couple of days later the new transistor arrived, and RT was somewhat loath to fit it, afraid that it would share the fate of its predecessors. The job had to be done, though, so the device was installed and the set switched on then off almost immediately to avoid overheating. Even in that short time the new device got very warm, however, and the set failed to work.

An oscilloscope, hooked to the transistor's collector, showed a strange ragged waveform, nothing like the normal flyback pulse train, and obviously very dangerous to transistors. This convinced Real Technician that the flyback transformer was faulty, maybe with short-circuit turns. In fact the transformer was perfectly OK; where was the culprit?

The solution is on page 367.

What readers want to see in Television

In our February issue as part of a competition draw for a new Horizon HDTM terrestrial meter (right), we asked readers what they wanted to read in Televison magazine. The response has been encouraging and has provided valuable input into the future editorial direction of the magazine

John Bennett of TV/Audio Services in Plymouth would like to see stories about the future for independents, recycling, price v reliability, and after sales service.

Pete Winder of Dunmow video and Satellite in Dunmow, Essex is mostly interested in fault reports, manufacturers' service information, vintage restorations, and '50 Years Ago.'

John Favisz of TV and Radio in Needingworth, Cambs, is also interested in TV faults especially on LCD technology.

JB Manning of Digitest in Plucknett, Somerset, is more interested in DX Satelite with full details of equipment required, aerials and setup, etc. He also wants to see in-depth page features on new digital TVs/DVD's and setup.

Adrian Mason of Thansi in Stoke-on-Trent, Staffordshire, buys the magazine mainly for its coverage of Radio and TV History.

E L Nash from Landford, Wilts, would like to see more technical diagrams and tips, technical explanations, and a technical website. (Ed: Watch this space.)

A Macleod from Thurso, Caithness, wants to see more articles on renovating old radios

R M Tucker of Tucker TV in Glenfield, Leicester, wants to see details about the latest ICs, with data for TV sets.

Satellite systems

Mr Alexander of DC Laing in Aberdeen, wants more information on the installation and maintenance of digital satellite systems.

Lee Archer from Ashton-in-Makerfield, Lancs, would like to read more about servicing digital radio and professional audio systems.

The Horizon HDTM digital terrestrial meter offered as a prize.

Allan Lloyd from Plymouth is looking for fault tips and what video decks are used in various makes.

An anonymous readers from Prism TV in Clevedon, Somerset, wishes for more information on digital terrestrial reception problems and solutions.

Philip Stevenson from Newtownbreda, Belfast, wants to read about Freeview Installation, Integrated DTV, DVD-HD, Blue Ray and MP3 Players.

C Thorne of Judgecard in St Austell, is mainly interested in terrestrial reception and interface problems, as well as HDTM.

AR Clarke from Sudbury, Suffolk, would like more circuits and reports on LCD Plasma widescreen TV.

Less retro

Alan Dean of Comet in Horwich, Bolton, wants to see more coverage of software download issues: EEPROM flashing, plasma and LCD TV repair, and "less retro TV - we need the now and Future!"

Alan Law of Robert Richie HiFi in Montrose, Angus, finds the "content excellent at this time."

Mr Lowe from London writes: "Cop out, but the mag can't be bettered by a service organisation."

Duncan Head from Stevenage, Herts, is interested in reading "anything on HDTV and its developments."

Mr J Bailey of Visionhire in Swadlencote, Derbyshire would like "More on TV and DVD repairs, and also on Freeview boxes."

The winner of January's HDSM Satellite meter competition is Kirthi Gunawardena, maintenance engineer at Young Asia TV in Sri Lanka.

The new version of the HDTM meter.

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RM521V59401	RC737HL
RM531V59403	RC737HL
RM541V59202	RC737HL
RM541V59502	RC737HL
RM541V59503	RC737HL
RM551V59502	RC737HL
RM551V59503	RC737HL
RM561V59601	RC737HL
RM6312163807	RC737HL
RM63121V63803	RC737HL
RM640V63804	RC737HL
RM641V63304	RC737HL
RM651V59506	RC737HL
RM76151V65801	RC737HL
RM76151V67902	RC737HL
RMM6050V57802	RC737HL
PHILIPS	
PT150A	RC437/HL
PT520A	RC437/HL

Make & Model	Code
PHILIPS...continued	
PT530A	RC437/HL
PT532A	RC437/HL
PT700A	RC437/HL
RC0311	RC437/HL
RC031201	RC443/HL
RC0764/01	RC443/HL
RC22401	RC443/HL
RC283509	RC443/HL
RC5601	RC437/HL
RC5915	RC437/HL
RC6502	RC437/HL
RC6511	RC437/HL
RC6512	RC437/HL
RC6513	RC437/HL
RC6941/01	RC443/HL
RC694101	RC443/HL
RC7301/01	RC443/HL
RC730101	RC443/HL
RC7500	RC437/HL
RC7502	RC437/HL
RC7503	RC437/HL
RC7512	RC437/HL
RC751201	RC437/HL
RC751501	RC437/HL
RC7535	RC443/HL
RC7535/01	RC443/HL
RH6622/01	RC437/HL
RH662201	RC437/HL
RH6820/01	RC437/HL
RH682001	RC437/HL
RP420	RC437/HL
RT230	RC437/HL

Make & Model	Code
SONY	
KP41S5	RC523/HL
KP46S4	RC523/HL
KP53S4	RC523/HL
KV16WTID	RC523/HL
KV25C1D	RC523/HL
KV29C3D	RC523/HL
KV29X1D	RC523/HL
KVB2511D	RC523/HL
KVE2531A	RC523/HL
KVM1440	RC523/HL
KVM1441	RC523/HL
KVM1450D	RC523/HL
KVM1451D	RC523/HL
KVM2170D	RC523/HL
KVM2171D	RC523/HL
KVS2951	RC523/HL
RM342	RC522HL
RM637C	RC522HL
RM640	RC522HL
RM641	RC522HL
RM641A	RC522HL
RM642	RC522HL
RM642A	RC522HL
RM644	RC522HL
RM646	RC522HL
RM649	RC522HL
RM650	RC522HL
RM651	RC522HL
RM652	RC522HL
RM654	RC522HL
RM655	RC522HL
RM657	RC522HL
RM658	RC522HL

Make & Model	Code
SONY	
RM661V8	RC522HL
RM662	RC522HL
RM663	RC522HL
RM664	RC522HL
RM665	RC522HL
RM677	RC522HL
RM677A	RC522HL
RM687	RC522HL
RM687B	RC522HL
RM687C	RC522HL
RM689	RC522HL
RM717A	RC522HL
RM811(NO PIP)	RC522HL
RM811(NOPIP)	RC523/HL
RM816	RC522HL
RM817	RC522HL
RM833	RC523/HL
RM836	RC523/HL
RM838	RC522HL
RM842	RC523/HL
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RM862	RC522HL
RM863	RC522HL
RM864	RC523/HL
RMK1T	RC522HL

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Order Code : SW53
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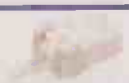

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BU 2508DF	£ 1.20 + vat
BU 2520DX	£ 1.50 + vat
BU 4508DX	£ 1.50 + vat
MC 44608P40	£ 2.50 + vat
MC 44608P75	£ 2.50 + vat
STK 392 - 010	£ 7.00 + vat
STK 392 - 040	£ 8.00 + vat
STK 392 - 110	£ 7.00 + vat
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EU outlook positive

Telecom operators in Europe are investing in new technologies to cut costs and seize new opportunities opened up by the convergence of communication networks, media content and devices according to the EU Commission.

Growing competition, especially in retail markets, is bringing increased consumer benefits and the outlook for innovation and investment within Member States and across borders is positive, says the European Commission's latest Report on European Electronic Communications Regulation and Markets, issued in late February.

Member States have made good progress in implementing the EU telecom rules of 2002, which is opening up markets to new entrants. The report highlights rapid take-up of high-speed broadband internet.

In the mobile phone sector, while take-up of services is still growing, particularly in the new Member States, there are signs that the voice market is maturing. Meanwhile, revenues from traditional voice services remain the largest source of revenue in the fixed line market, despite a gradual decline.

"The rich economic data of this year's report will allow the Commission to make a solid assessment of the impact of the EU telecom rules of 2002 as a basis for our review of these rules in the course of 2006," said Viviane Reding, Commissioner for Information Society and Media.

"My objectives in this review process are strengthening investment through infrastructure-based competition, promoting innovation through openness of the rules for new technologies, and completing the single market by making the application of EU rules more consistent across the 25 Member States and by encouraging cross-border communication services."

This year's review of the EU telecom markets takes a snapshot of the situation in the electronic communications sector prior to the review of the framework. It looks at the latest market developments mainly in broadband, mobile and fixed services, the regulatory environment and the consumer interest.

Quadruple play

During 2005, operators have started to offer portfolios of services (triple play and even quadruple play), with different combinations of low-cost voice (including mobile), internet access and audiovisual content to attract and retain customers. Increased regulatory certainty has been stimulating cross-border capital investment and mergers/acquisitions.

During the year, cross-border investments were driven by economies of scale and we are seeing

Peter Börjesson, a 28-year-old Swedish producer, received the 'New talent in the European Union' Prize from Viviane Reding, Commissioner for Information Society and Media.

In the presence of Culture and Audiovisual Ministers from the EU Member States, the President of the Cannes Festival and cinema professionals and information and communication technology (ICT) experts met to celebrate Europe Day 2005 at the International Cannes Film Festival.

Cannes, 16 May 2005. 'Montée des marches' with the EU Ministers of Culture and Audiovisual Policy.

The Prize takes the form of an entry for the prizewinner in the international Cannes Film Market and the services of a coach to find partners who will help him complete his film project.

At the prize presentation, Viviane Reding said: "With this prize, the Commission wants to underline the importance of promoting European films and giving our talented young filmmakers their chance to shine.

"Each year the European Union's MEDIA programme invests more than 100 million euros in fostering diversity and competitiveness in Europe's audiovisual industry.

"I have proposed doubling this commitment from 2007 onwards. I wish this prize to help Peter Börjesson bring his film project to fruition, and would like his film to be seen throughout Europe."

Created in 2004, the New talent in the European Union Prize is for the best script written by a European author under 35 years of age who has received training funded by the MEDIA programme.

This year's prizewinner was chosen by a jury of professional film writers from a shortlist of 11 very good projects.

Peter Börjesson's project is called 'The Symbiosis Project' and tells the story of a young voyeur who moves into a woman's apartment when she is away and discovers the complex life she leads.

The author of the scenario, who would like to make the film, has already produced a number of short films. In addition to the appearance at the Cannes Film Market, the MEDIA programme will contribute 40,000 euros in financial support to Peter Börjesson's production company.

the first signs of pan-European expansion strategies.

Commissioner Reding welcomed the progress made with the opening of national telecom markets, but added that further work was needed. The report shows that competition is already delivering substantial consumer benefits, especially in the broadband and mobile services sectors.

Broadband, thanks to competition and investments, has seen significant growth, with a rise of almost 20 million subscriptions to 53 million. Mobile phone penetration has now reached almost 93% and exceeded 100% in eight Member States.

The report shows that some Member States have now introduced virtually all the national laws and regulatory practices required to implement EU telecom rules, and the remainder have made substantial progress.

Greece, the last Member State to transpose these rules into its national law, completed the task in January 2006.

This year's report also stresses the need to cut the cost of using a mobile phone abroad (international roaming), to raise public awareness for Europe's single emergency number and to avoid subjecting emerging internet telephony services to excessive regulation.

The report can be consulted at: http://europa.eu.int/information_society/policy/ecomm/implementation_enforcement/index_en.htm

Commissioner Reding (third from left) meets European Satellite Operators Association, Brussels 9th November 2005. Pictured with her are Enrico Saggese, Chairman of the ESOA Board of Directors and Director of Space Activities for Finmeccanica and Vice-Chairman of Telespazio, Romain Bausch, CEO of SES Global, Per Norman, CEO of Nordic Satellite AB, Osman Dur, CEO of Eurasiasat, Petra Mateos, Chairwoman of Hispasat, Aarti Holla-Maini, Secretary General.

IPTV World Forum

Andy Lovit Vice President of Worldwide Field Operations for SkyStream

In early March, the IPTV World Forum 2006 at London's Olympia crammed exhibitors and conferences about the latest technologies into a three-day event.

The IPTV World Forum was developed as a direct response to the rapid growth in the marketplace, bringing together operators, technology partners and content providers to explore and define the IPTV evolution.

Internet protocol television (IPTV) uses IP as the transport platform to send video signals to the television via high-speed Internet connections to homes or businesses, such as fiber-to-the-X connections (FTTx) and/or digital subscriber lines (DSL).

Deepa Iyer, a research analyst for Parks Associates who studies emerging technologies for delivering quad-play services in the broadband market, asserts that service providers, including, cable, satellite, and telecom operators, are getting very aggressive about pricing.

Her most recent focus is on studying IPTV market and consumer dynamics. In their quest to increase their customer base, service providers are offering triple-play packages with a very thin profit margin.

"If telecom operators want to emerge as leaders in the video market, they have to identify compelling drivers for consumers to acquire their services beyond the price of the basic triple-play package," she argues.

Quest for speed

Cable providers offer video services and high-speed Internet connections using a hybrid fiber coax (HFC) network.

Although HFC promises huge bandwidth for the downstream at 400 Mbps, its performance on upstream transmission is notably slower, usually at around 128 Kbps.

"This limitation hinders the opportunity for service providers who want to offer more interactive advanced TV services and applications," she adds.

In a competitive environment where broadband speed no longer acts as a differentiator, telecom operators have to search for other options that will help them to distinguish themselves in the market.

As there is no definite standard established for the end-to-end IPTV backbone infrastructure, telecom operators have to partner with experienced providers for video head-end, middleware, system integration, and other value-added services.

Consumers typically associate

triple-play packages (which include voice, data, and video) with cable operators.

Consumers are largely unaware that telecom operators can provide video in addition to voice and data.

Acquisition

In February, Tandberg Television acquired SkyStream, headquartered in Sunnyvale, California.

Founded in July 1996, SkyStream employs approximately 100 people across North America and in the UK, China and Korea.

"The sands are shifting in the digital media market and there is an inevitable level of industry consolidation taking place," says Eric Cooney, President and CEO of Tandberg Television.

SkyStream's Mediaplex-20 and iPlex switched digital video headends for MPEG-2/MPEG-4 AVC encoding and transcoding are by IPTV operators in Asia, Europe and the US.

These solutions will extend Tandberg Television's DTH head end systems and its MPEG-4 AVC HDTV compression solutions.

In addition, SkyStream's zBand content delivery software for push on-demand services is complementary to the Tandberg N2 On-Demand solutions.

Tandberg Television and SkyStream already share a number of common customers.

Andy Lovit Vice President of Worldwide Field Operations for SkyStream, told *Television* magazine that Fastweb, operator of the largest IPTV service in Europe with more than 160,000 video subscribers, has deployed its Mediaplex-20 headend system.

Fastweb is using the SkyStream headends to provide 36 channels of 'Fastweb TV,' its premium television and video-on-demand service in Milan.

"Fastweb's deployment uses the Mediaplex-20 to encode and deliver more than 36 channels of television using MPEG-2 compression over a mixed fiber and ADSL network," Lovit explained.

"The deployment was facilitated by Omnia, an equipment integrator in Italy and one of SkyStream's key partners in Europe."

"Fastweb is a pioneer in IP television, with what is arguably the most successful IPTV deployment in the world to date," said Steve Wallbank, general manager of EMEA field operations for SkyStream.

Fastweb is Italy's second largest fixed telephony operator and the first player worldwide to develop an all IP network for Triple Play service delivery (voice, data, video), currently operating in many Italian cities via a network of more than 17,000 km.

SkyStream's Mediaplex-20 is a carrier-class, complete video headend system in a single chassis that enables a new level of converged services over any last mile (ADSL, FTTH, and CATV).

Mediaplex-20 is the industry's first fully-integrated video headend to deliver MPEG-4 AVC encoding and transcoding.

With its highly-dense capacity of 48 MPEG-2 or MPEG-4 AVC encoders or transcoders, SkyStream's Mediaplex can distribute hundreds of high-quality video channels for large-scale video delivery in multiple formats and rates to millions of subscribers at the same time.

Mediaplex-20 also provides video multiplexing and de-multiplexing, routing, video rate-shaping, stream replication and ATM-to-IP conversion.

The Mediaplex-20 system has more than 140 field-proven deployments in the last 18 months.

Interoperability

At the Forum, Amino announced interoperability with industry's leading H.264 encoder vendors.

The company confirmed that its H.264 AmiNET124 IP set-top box is fully compatible with the industry's leading H.264 (otherwise known as MPEG4-AVC) encoders.

By ensuring full interoperability and high quality video rendering via the AmiNET124, IPTV service providers can deploy advanced H.264 services using any of the major encoding technologies within a much shorter timeframe.

The AmiNET124 was launched in June 2005, and in September won the Broadcast Engineering Pick Hit Award at IBC for its innovative, single-chip design and advanced performance, which lowers the cost of IPTV deployments.

Prior to, and in the months following its launch, Amino has worked closely with both the leading middleware and encoder providers to ensure that the AmiNET124 is fully compatible with all elements of the IPTV system.

Amino announced that the set-top box has been certified to interoperate with H.264 encoded video from Harmonic, SkyStream, Tandberg Television and Tut Systems.

"The AmiNET124's optimised software stack helps ensure that the picture quality of highly compressed digital video, such as that produced by Harmonic's DiviCom MV 100, is preserved across the IPTV delivery chain," said Thierry Fautier, Director of Telco Solutions Marketing at Harmonic Inc.

"Validating and optimizing interoperability between our DiviCom MV 100 MPEG-4 AVC-enabled video encoder and the AmiNET124 expands the range of top quality, ready-to-deploy solutions available to IPTV service operators."

Tim Sheppard, IPTV Business Development Director, EMEA and APAC for Tandberg Television, noted: "Advanced compression technology is crucial in enabling operators to launch new IPTV services over bandwidth constrained networks.

"To truly deliver with high quality, advanced compression solutions need to be optimized from the video head end all the way into the home and we are delighted to support Amino as it brings MPEG-4 AVC innovation to the set-top-box sector."

"Amino has achieved a rapid time to market along with high quality with their AmiNET124 product," explained Mark Tiedeman, Vice President of Marketing for Tut Systems.

"The market for MPEG4-AVC IPTV is growing very rapidly and by closely partnering with Amino, we can provide the most advanced services to our customers."

Triple-play test

Last year, Shenick received Frost & Sullivan's Product Line Strategy Leadership Award in the European communications test equipment markets.

Sankara Jambulingam, Frost & Sullivan's research analyst, says: "The award is especially deserving, because Shenick was one of the first companies to anticipate and address the many new real-world deployment issues that the emergence of triple play brought to IP communications."

Established in 2000 and based in Dublin, with offices in San Francisco, Atlanta, the UK, Stuttgart and Singapore, Shenick has deployed its diversifEye test system throughout North America, Europe and Asia.

"Converged networks sharing one broadband connection is rapidly becoming a reality," says Alan Robinson, CEO of Shenick Network Systems.

THE TELEVISION EXPLORER

The evolution of the field strength meter : PRODIG-5

PROMAX continues to revolutionise the television field strength meters market.

The PRODIG-5 is a new meter that is going to change the way users make and understand signal measurements.

A new concept

PROMAX is a leading European manufacturer of installation and maintenance test equipment for the television market. With the launching of the **TV EXPLORER**, the equipment concept has changed and so from now on it is never going to be the same again.

They have introduced a new instrument that has an entirely new approach to measurements. In the design they have exploited the possibilities that new digital design techniques are offering and so produced an instrument that is above all, easy to use.

The **TV EXPLORER** is innovative both in the functional aspects and in ergonomic design.

Any television systems installer expects from an analyser such functions that allow for installation and maintenance in the fastest and most comfortable way possible.

At the same time, he requires the instrument to established reference criteria before determining the source of problems at the input signal, in the distribution components or with the reception equipment.

Due to the extremely compact design, the technical specifications and the low cost, the **TV EXPLORER** is becoming the benchmark instrument for professional installers.

Channel identification

The **TV EXPLORER** has been designed to satisfy the measurement needs during the transitional period leading to the analogue switch off in terrestrial, satellite and cable. For this reason it is equipped with functions to measure both analogue and digital signals.

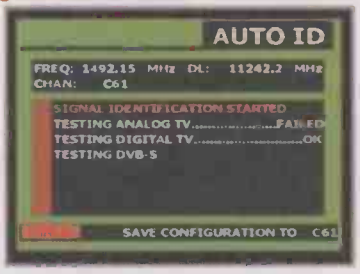
When pressing the 'identification' key, it searches and identifies the signal under test. First it recognises whether the signal is an analogue channel or a digital. If the channel is analogue, it determines the television standard of the signal.

When the signal is digital, it analyses for each modulation type QAM / QPSK / COFDM all the associated parameters such as the modulation system (2k-8k), the symbol rate and the code rate. This data is applied to determine the true characteristics of the signals under test.

In this way, the **TV EXPLORER** becomes a fully automated and agile instrument, able to detect and to identify virtually all of the channels in a television system.

Even in adverse situations, when the conditions of the signal to be identified are very poor or when the characteristics of the signal do not comply with any of the algorithms for their identification, the equipment allows a manual configuration.

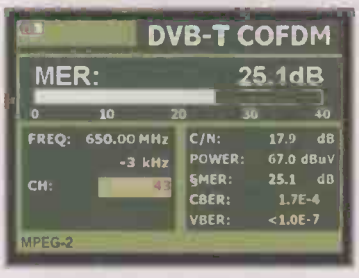
Signal detection



When the same 'identification' key is pressed for a few seconds, a new spectrum exploration session begins.

The **TV EXPLORER** is able to determinate channel bandwidths and digital channel off-sets.

Simultaneous measurements



The operation of the **TV EXPLORER** is remarkably easy. A symbol based keyboard allows the direct access to the various functions and the measurements are displayed active and simultaneous.

The TV Explorer

Unlike the meters currently on the market, the **PRODIG-5** makes a dynamic exploration of the spectrum, detecting all the channels in the selected band, this applies for the terrestrial, cable and satellite television bands.

This measurement concept marks a radical change in the way to understand and to use the meter. The meter is no longer a passive piece of equipment, that only allows to measure the state of a series of channels, but it is the meter alone that begins by locating the channels and collecting them in a data base.

The meter locates all the channels in the spectrum with no need of any previous information about the number of channels, the type of signals transmitted or their characteristics.

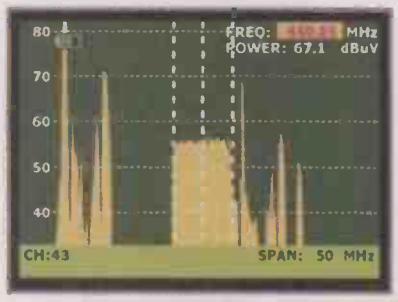
The **PRODIG-5** discriminates between analogue and digital signals. With the data collected after each exploration, it creates a register that contains tables of channels that can be independent for each system or installation. These tables of channels can be personalised by assigning them a name. At any time, the measurement sessions using only the pre tuned channels can be repeated. It becomes possible to reduce the actual measurement process time.

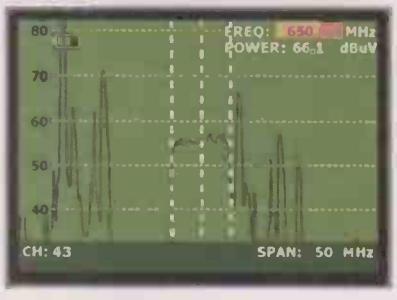
Speed of process

Time is a limited resource By increasing the equipment's intelligence, devices have been incorporated that allow to increase the speed of processing. The final result is much shorter measurement times than those equipments with traditional designs that have existed, until now.

Display

The **PRODIG-5** incorporates a high quality 5" TFT- LCD display that allows optimal resolution. A light sensor activates the contrast and luminosity of the display according to the environmental conditions.





Indication of status

At all times the instrument indicates the type of measurement that is being made i.e. Terrestrial / Satellite and Analogue / Digital.

PROMAX

Ergonomics

The **TV EXPLORER** is the ideal shape and size to hold with a hand. The instrument can be held to the body with the carrying bag which at the same time protects it from the rain. Another detail that has been taken into account, especially considering its outdoors use, has been the anti-shock protector that completely covers the instrument.

The front panel does not have any keys or gaps to avoid accidental water ingress.

The weight without the anti-shock protector is less than 2 kg, ideal for roof and ladder work.

Li-ion Batteries

The instrument is fitted as standard with Li-ion batteries. These batteries are the type that provides a maximum operating time and a minimum charging time. In level measurement mode, the estimated duration is more than 4 1/2 hours. It is possible, at any time, to check status of the battery.
A sensor initiates adjustment of the contrast and brightness of the display, which also extends the

already highly practical battery operation time.

Video output

On some occasions, it is convenient to display the measurements of the spectrum analyser in a larger format.
The equipment has a video output that provides a signal to a bigger screen or a projector.

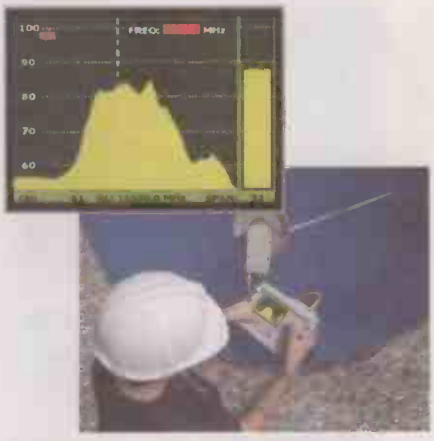
Transport case (option)

The instrument can be supplied, as option, with a strong transport case for those rough journeys.

Antenna Installation

The **TV EXPLORER** has been designed to make compatible type of measurements that require of very different working configurations.
A specific function has been developed for easy antenna alignment.
When selecting...

the instrument configures itself to offer a very fast sweep time of the spectrum and a high sensitivity graphical bar allows the fine adjustment of signal peaks necessary to optimise TV aerial or satellite dish alignment.
The **TV EXPLORER** incorporates the supply voltage for amplifiers and LNB, including the 5 V for DVB-T indoor antennas. It does also include commands to program Diseq 1.2 devices.



Selection of measurement

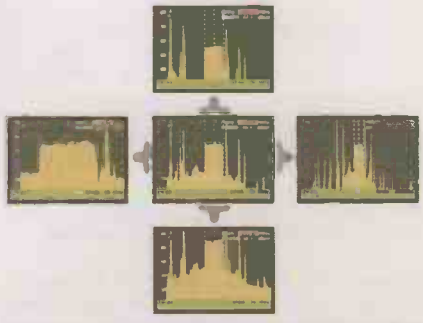
All the related measurements are displayed simultaneously on the screen.
When pressing the measurement key, a key measurement can be selected, so that it appears highlighted in a large bar graph display.

Which means the instrument adapts to the diverse preferences of the user without adding any complication during familiarisation or operation.

Spectrum analyser

One of the features that has been most carefully studied in the instrument design has been the spectrum analysis functions.
Features like accuracy, resolution, sensitivity and sweep time can make a spectrum analyser a very useful tool or a completely useless instrument. We believe the **PRODIG-5** is well designed to meet the diverse applications the telecommunication installer has to undertake.
Our accumulated experience and know-how has been used in the **TV EXPLORER** to develop a spectrum analyser adapted to a wide variety of measurement requirements, from the installation of the antenna to the detection of complex impulse noise events. While all advanced control possibilities have been incorporated, a new system to simplify its use has been fully implemented.

The **TV EXPLORER** presents an innovative control system based on four arrows that makes the use of the spectrum analyser very intuitive.
The 'UP-DOWN' arrows set the reference level, so that when pressing the 'UP' arrow reference level is increased by 10 dB (when in a dynamic margin of 10 dB/division).
When pressing the "DOWN" arrow, the reference level is reduced by 10 dB allowing to check signals of lower level.
The "Left-Right" arrows allow to select the span or expansion, so that when "right" is pressed the margin of frequencies in display is increased and when "left" is pressed the zone around the cursor can be analysed with more detail.



By means of the rotating button any frequency or channel that needs to be tuned can be selected.

Alban

PROMAX

DTT TEST BENCH SYSTEM

DTT service has been launched or announced in practically all Europe. While in most of countries the coverage has already reached a large percentage of its population, some others are just starting with trials and test transmissions.

In any case, the implementation of the system is now started and the digital switch over will take place within the next few years.

Many digital television set top boxes and integrated digital televisions are sold during the launch campaigns but, not always are these devices really ready to be marketed. As a result, the rate of replacements is high. Installers and distributors rush to replace defective units but there are certainly problems in the field. This is not an optimum situation because changes in the transmission conditions, channel plans, etc. might revert into reception problems eventually.

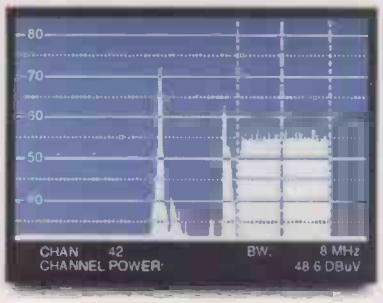
The challenge is not small for the manufacturers. There are many different network configurations depending on the country and lately, on the operator itself.

First of all the allocation of the channels. Digital channels are placed in any part of the spectrum, depending on the country's spectrum plan.

The multiplex can be operated in 2k or 8k mode. This parameter determines the number of carriers that are transporting the information within the channel.

Then there is a range of modulation types for these carriers 16QAM, 64QAM, QPSK whilst the code rates and the Guard Intervals are also configurable. These vary according to their circumstances from one operator to another.

In some cases, the compatibility of the existing analogue channels with the new digital ones creates intrinsic incompatibilities.



In the UK, for instance, the topology of the network includes digital channels next to analogue channels. Some of these analogue channels have a 6 MHz audio carrier offset followed by a NICAM carrier. This causes an overlap with the digital multiplex in the adjacent channel. To solve this, the digital multiplex can be shifted forward or in some cases, backward.

The broadcasters have yet another compromise when deciding the 'load' of the multiplex. If we consider a multiplex with a 64 QAM modulation and hence a 24 Mbits/sec payload, 4 video channels at 6 Mbits/sec or 6 video channels at 4 Mbits/sec can be supported. Depending on the partition carried out the decoding times can change.

Receiver and iDTV manufacturers manufacture their products to get the lowest cost possible and therefore have to be universal, considering that their receivers will have to cover all possible present and future broadcast possibilities. The performance of these devices varies not only in between different manufacturers but also among equipment of the same type.

Making strict performance test to the receivers and iDTV's is a must and a solution to reach low and acceptable rejection rate levels.

The **MO-170 MODULATOR** can create a DTV multiplex at any frequency in the range of 45 MHz to 875 MHz at signal levels of -30 to - 70 dBm in steps of 1 dB. The DVB-T parameters are fully programmable offering high flexibility.

The **MO-170's** can be stacked so when combined with analogue generators they can simulate complete transmission networks. To generate the analogue channels there is the versatile **PROMAX GV-998** or **GV-898**.

This test bench will allows the user to reproduce many different conditions as found in any area and can help to identify receiving problems that could prove extremely difficult to find.

With a test bench composed of two analogue sources and two digital sources, for instance, it will be possible to simulate any combination of channels:

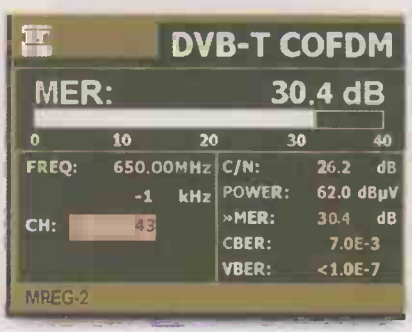
Digital - Digital - Analogue

Digital - Analogue - Digital

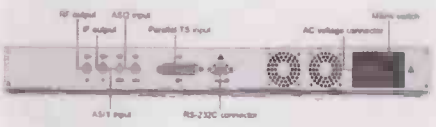
Analogue - Digital - Analogue

It becomes possible to now test how the change in level or power on each individual signal creates influences onto the others. Likewise the user can check the effect of the digital on the NICAM of the preceding channel or the effect of making a frequency offset to the signals.

The **PROMAX PROLINK 4C Analyser** will become a perfect match to make all of the tests. It allows to measure both the analogue and the digital signals, check the spectrum and also demodulate the signal.



The combination of the **MO-170 MODULATOR** and the **PROMAX PROLINK 4C ANALYSER** provides a very low cost solution for testing of DTV receivers, iDTV's and related equipment.



PROMAX

FIELD STRENGTH METERS : PROLINK-4 & PROLINK-4C *Premium*

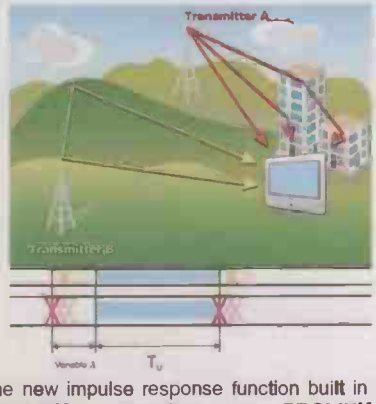
New functions for DVB-T measurements : the impulse response

The most complete instrument on the market now incorporates a new function: the impulse response. To the already very wide range of functions for measurements in satellite, terrestrial cable television systems, the instrument adds now a new feature, especially useful to work in DVB-T Single Frequency Networks.

The impulse response

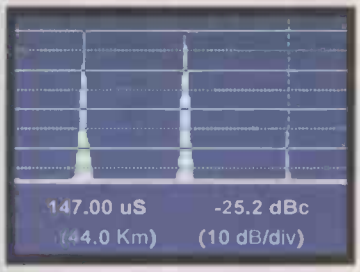
PROMAX has introduced the new channel impulse response function for **PROLINK-4C** ***Premium*** and **PROLINK-4** ***Premium***. This feature allows the detection of "echoes" in digital television signal reception. DVB-T digital terrestrial television has begun to be implemented in a few countries whilst in many other countries the introduction is planned.
Working in Single Frequency Networks, SFN, all the transmitters in the covered area transmit the same programme in the same channel.

It is necessary that all the transmitters are very well synchronised both in time and in frequency. Usually, GPS based systems are used for this purpose. In the area where the coverage maps from different transmitters overlap, the signals from different transmitters reach the same receiver at different instants of time.
The guard interval is the period of time that the signal incorporates to absorb these differences in the arrival time to the receiver, so that only one of the signals is going to be considered as a reference and the rest will be echoes.



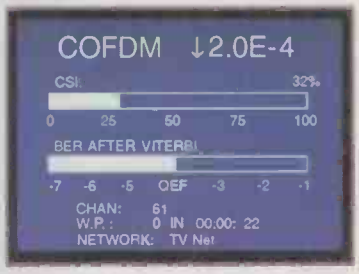
The new impulse response function built in the **PROLINK-4** ***Premium*** and **PROLINK-4C** ***Premium*** allows the graphic analysis of this guard interval and the different events.
The guard interval is represented in the figure above. The horizontal axis shows the different arrival times of the signals from different transmitters and the vertical axis shows levels.
Distances in kilometres for different arrival paths are also indicated on the screen. The further the distance to the transmitter, the longer the time required for the signal to reach the receiver.

This function is now included as standard. If required, it is also possible to upgrade the firmware of the instruments in the field.



Quality of the digital signal

The **PROLINK-4** ***Premium*** and **PROLINK-4C** ***Premium*** include many other functions to determine the quality of the DVB-T signals. For example, the measurement of Channel Power, C/N, BER, CSI and MER.
The Bit Error Rate (BER) is a parameter that determines the limit of acceptability of the signal. This limit is established by DVB. Signals with a BER value higher than 2×10^{-4} are not acceptable as they may contain too many errors and could even generate artefacts in the picture, showing as frozen square pieces on the screen.
But to define the quality of the signal other measurements such as CSI or MER have to be taken in consideration.



Such parameters will determine the noise margin or, in other words, how far we are from the limit of acceptability.

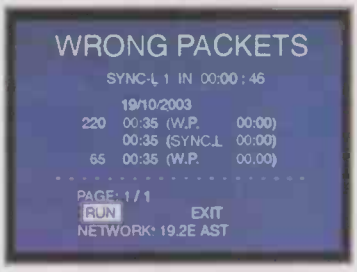
The constellation

Another very important and complementary function to that we have described previously is the constellation.
A well designed and perfectly synchronised transmission system does not assure a reception free of errors in all the coverage area.
The DVB-T Digital Terrestrial Television uses COFDM modulation.
This technique divides the bandwidth of a television channel in many portions. Each one is occupied by a QPSK, QAM 16 or QAM- 64 modulated carrier. Most of these carriers (1705 in 2k systems and 6817 in 8k) are transporting information. The so called pilot or TPS carriers are necessary for the synchronisation of the receivers. The constellation diagram is a graphic representation of all the digital symbols received in a period of time.
Thus, the 16 QAM is represented on the screen by a total of 16 different zones.
In the ideal case, the symbols are recognised without any noise by the demodulator and they appear in the constellation diagram like points that one after another are hitting the centre of each zone.

The noise and other defects of the transmission to channel cause the demodulator to not always read the symbols suitably. The points can not then hit in the theoretical centre and the constellation diagram will show a greater dispersion with diverse forms depending on the type of noise.
The constellation function allows to analyse each one of the QAM carriers within a COFDM signal: 1705 in the system 2k and 6817 in 8k.

Transport stream analyser

Another very useful function is the transport stream analyser. This function allows the detection of impulsive noise affecting the signal reception. The impulsive noise is mainly caused by home appliances, vehicles, etc. These interferences are easily leaked through the antenna and can affect the reception, but they are not always present. This function allows permanent surveillance of the signal to detect the appearance of such random interferences.



The **PROLINK-4** ***Premium*** and **PROLINK-4C** ***Premium*** allow the demodulation of the signal to verify the tables of channels and services, the PID tables, pictures and sound.
The built in CAM module also allows the demodulation of encrypted signals.
These PROMAX analysers are the fruits of many years producing installation field test equipment and where the words and wisdom of professional broadcasters have always been carefully listened to. As a result, PROMAX has been able to put into the hands of installers and broadcasters a powerful and highly accurate measurement tool whilst remaining at affordable prices.

PROMAX

Oscars for techies

Last February, Frank Fletcher and Dave Sherwin of British company A&C received a Technical Achievement Award for 2005 from the US Academy of Motion Picture Arts and Sciences. The award was for the introduction and ongoing development of the company's Power-Pod remote controlled, modular camera head system.

Frank Fletcher demonstrates the Pee-Pod remote controlled camera head system in his workshop.

The Power-Pod offers enhanced production flexibility by enabling filmmakers to quickly configure a remote controlled camera head to meet particular shooting requirements.

The award certificate was presented to A&C's managing director, Frank Fletcher, accompanied by co-director Dave Sherwin, at the Scientific and Technical Awards Dinner and Ceremony at the Beverly Hilton Hotel, Beverly Hills, California on Saturday February 18th, 2006 - an event that has become a highlight affair in the Academy's Oscar season.

Scientific and Technical Academy Awards may be granted in any of three categories, and The Technical Achievement Award received by A&C is in the category 'for those accomplishments that contribute to the progress of the industry'.

Commenting after the awards ceremony, A&C's managing director Frank Fletcher said: "We are proud that our small design and manufacturing company based in Harrow, North West London has been acknowledged as a significant player in the important motion picture industry.

"We believe our range of professional remote controlled camera heads are the most practical and versatile available for feature film and television production, and it's good to see British technology and ingenuity receiving credit in such a competitive world market."

Dangerous shots

The range of Power-Pod and Pee-Pod remote controlled camera head systems from A&C allow film and broadcast TV camera crews to take shots that would otherwise be too difficult, dangerous - or even impossible - to achieve.

By allowing film or video camera teams to operate from a convenient or safe distance, they can capture dramatic action in assignments ranging from stunt shots, sports

events and wildlife productions to news coverage in hostile and war zone environments.

Further commenting at the awards event, director Dave Sherwin said: "Our first professional remote controlled camera head systems were built back in 1986, and were soon recognised as being amongst the first to be truly practical and reliable.

"Since then, development of these products has been thorough and on-going - establishing us as a world leader in this field and culminating in the prestigious accolade we have received this evening."

A&C has more than 40 years experience in the design and manufacture of world class equipment for film and broadcast television production.

All aspects of manufacture, from design concept through to the finished article, are carried out at the company's facility in Harrow, not far from London Heathrow Airport. All products are backed by a full after sales service.

A&C operates a network of agents to handle many of its overseas sales. Its UK office in Harrow deals with all other sales.

Servo controllers

When Power-Pod was first designed, Frank found there were no usable off-the-shelf servo motor controllers. "We could not use off-the-shelf systems for a number of reasons," he said.

"Firstly, their size: all our equipment has to be portable and capable of being taken on location to various film sets and studios, where it would be used for a few days at a time and then moved somewhere else again.

"The industrial electronics and servo systems available were never designed for that application. Often, they were three-phase systems and very big. The electronics were designed to be built into machine tools and not portable film and TV equipment.

"Secondly, most of them used a motor drive method called pulse width modulation (PWM) as an efficient way to control a DC servo motor in a closed loop feedback system.

"However in the early days, PWM gave off too much interference for the video systems of the time, most of which used the Philips Novacom tube, and which was sensitive to external interference, so that you got a picture covered in white snow."

Frank was then faced with using linear amplifiers, which had been side-stepped in favour of PWM developments since the 1950s. They were also big and inefficient, and generated too much heat.

MOSFETs

In the late 1970s Frank revisited linear amplifiers and applied the technology of the time to rebuild linear amplifiers with modern electronic devices like MOSFETs that were far more efficient.

"We bought off-the-shelf linear amplifiers from a servo supplier, and they had TO3 devices for each channel motor, each of which had a can diameter of 25mm," Frank continues.

"We replaced those with MOSFETs. That allowed us to reduce the size and improve the efficiency of the circuitry by a factor of ten or more. Our early systems were analogue linear amplifiers.

"They had to be closed loop servo systems because most of the time, the camera would not be perfectly balanced. The operator had to have a link between hand movement and lens movement that he could predictably rely on."

The electronics had to determine whether or not the lens movement was that required, and compensate if it met any increased load.

Unbalanced loads cause particular problems in the film business, where if you have about 1,000 foot of film in a magazine weighing about seven pounds moving into another magazine, it causes vibration on the lens.

Black art

Frank found ways to both damp down vibrations and compensate for them. There were about seven factors that had to be right for a system to be forgiving enough of a cameraman to allow him to put a camera on the head, and be assured that it would work without it being a black art.

The cameraman needs to feel that the controls are as close being behind the actual camera itself. The closer the interface is to simulating the real thing, the less training and education is needed by the camera operator.

"We have progressed through 20 years of development from early analogue systems," added Frank.

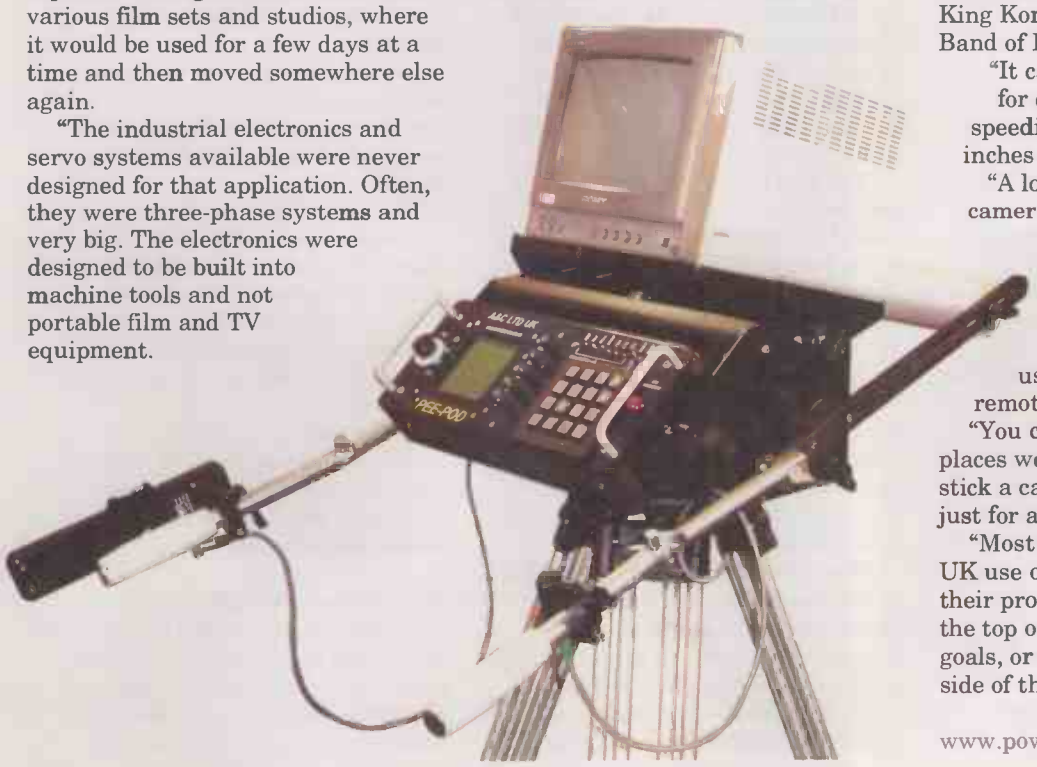
"About four or five years ago, out of every three feature films being released, one of them used our system somewhere in its production, including Star Wars, Titanic, Lord of the Rings, the Da Vinci Code and King Kong, and in TV series like Band of Brothers.

"It can be a question of safety, for example, if you want a speeding car to pass within a few inches of the lens.

"A lot of the time we now use cameras on the end of crane arms, or booms, and if you do not have to have an operator at one end, the boom can be lighter and longer, and you can also use telescopic arms with remote heads on the end.

"You can put remote heads in places were you would not want to stick a cameraman for the whole day just for a few shots.

"Most Sky football matches in the UK use our remotes somewhere in their production. They might be at the top of the stands, behind the goals, or on tracks moving along the side of the pitch."



www.powerpod.co.uk

World Cup to convert one million homes to digital TV

One million households plan to convert to multi-channel digital TV before the World Cup, research from Digital UK reveals. Of particular interest to *Television* readers will be the opportunities offered in the aerial installation market.

On the day after the Department of Culture, Media and Sport announced the 'landmark' figure that 70% of households in the UK have at least one set equipped to receive digital broadcasts, a BMRB survey conducted by Digital UK shows that 15%, or just over one million of the remaining 7.5 million households which have not yet converted, plan to do so before the World Cup.

The BMRB survey also shows a further 16% of the current non-digital households intend to convert in the next 12 months, a trend that could see the 'landmark' 70% penetration figure rise to an estimated 80% by this time next year.

Research regarding awareness of digital switchover showed that it has increased from 85% in November 2005 to 88% in March 2006 in the Border region.

The Border region is the first to switch over in 2008 and the communications campaign run by Digital UK has been active in that region since November 2005. The national awareness figure is 66%, up from 61% in November 2005.

Registered installers

Ford Ennals, chief executive of Digital UK, said: "It is great news that more than a million people plan to go digital ahead of this summer's World Cup.

"It is the first time that the majority of homes will be watching the tournament on digital which clearly enhances people's overall enjoyment of television."

Ford Ennals, chief executive of Digital UK

Interest in the Confederation of Aerial Industries' (CAI) Registered Digital Installer (RDI) scheme is crucial to Digital UK's plans.

The CAI claims that its 800 members represent 40% of the UK aerial installation industry.

The CAI is the trade association for the TV and radio signal distribution industry.

Its members are installation companies providing everything from domestic installations for a single TV set to large scale distribution systems known as MATV (Master Antenna TV), SMATV (Satellite Master Antenna TV) & IRS (Integrated Reception Systems) plus the manufacturing and product distribution companies who serve the needs of those installers.

One of the key roles of the CAI is to provide consumers with the assurance that the installation company they use will provide a high quality installation at a fair price.

Most people will only use an aerial or satellite installation company once so it is difficult for them to satisfy themselves as to a company's abilities.

By inspecting every applicant before admitting the company to membership, the CAI makes this assessment on behalf of the consumer.

David Hodges, CAI Chairman and managing director of Blakeglow, says: "The process of changing the nation to digital continues at a growing rate and, with the recent introduction of free to air set top boxes for terrestrial digital, it is expected to grow even more.

"In conjunction with the broadcasters and the DTI, the Confederation is putting a huge amount of effort into the technical aspect both of reception and training.

Benchmarking

"In order to improve the reception of terrestrial digital and increase the immunity to interference, the Confederation has embarked on a number of initiatives. These are

cable benchmarking, aerial benchmarking and training."

"The CAI is now launching a new series of training courses aimed specifically at the reception of digital terrestrial.

"The expanding technical requirement of digital systems and measuring instruments places a large emphasis on the need for training."

The CAI will oversee training by means of National Vocational Qualifications (NVQs) for the installation of signal reception and distribution equipment - in many cases installing a TV aerial or satellite dish.

The 'national' bit means that the 'qualification' can be gained on a nationwide basis and is recognised as being the 'standard' for that vocation.

The qualification instigates an assessment framework of how the job is done and if the installer is competent, in a similar fashion to gas fitters with Corgi or electricians with Part P.

Plan of assessment

It divides the installer's job into nationally agreed areas of work, called Units, and then provides a plan of assessment within each of the units so that a judgment can be made on competence.

These units will relate to areas of the work like:

- Dealing with customers
- Installing the equipment
- Working safely while working
- Explaining how equipment works
- Practical and theoretical

Where weaknesses are identified in the installer's work within a unit then there is supporting knowledge that can be provided, usually in the form of practical and theoretical courses. These fill in the knowledge gaps identified.

In order to achieve an NVQ the installer gathers evidence of competence in a portfolio.

Generally of course the aerial industry provides signed documentation such as job sheets from completed, satisfactory installations that prove the installer can do the job to a certain level.

The installer would then file this evidence in a way that is presentable to an outside assessor.

The installer can also be observed carrying out his job by a qualified NVQ assessor who then provides signed evidence sheets that the installer has proved competence in a certain area of his work.

Map showing the digital switchover by ITV region.

The assessor then 'measures' the evidence provided against the national standards for the qualification.

The NVQ is awarded at Level 2 or Level 3. Level 2 concerns itself with individual receiving systems for the single home user, such as installing aerials for TV, radio and satellites and distributing those signals around the home.

Level 3 will be for systems engineers who install distribution systems in commercial buildings or apartment blocks.

Digital logo

This NVQ for Signal Reception is to form the basis for the government's project to have a digital logo that covers different aspects of the switch to digital broadcasting.

In order for an aerial installer to carry this logo he will have to be working towards the NVQ.

Many of the construction related trades like the gas and electricity industry have had NVQs for many years now.

In order to gain access to work sites the workforces in these trades have had to prove competence before engineers were allowed on site to carry out work.

The aerial industry has now been included in these trades so competence-based training is now going to become any everyday part of the aerial installers working life.

The CAI offers a comprehensive, education & skills programme with the objective of ensuring that members have the opportunity to keep themselves and their employees fully up to date with the latest technologies and techniques.

It also benefits the customer by providing them with the best possible standard of service.

The CAI's intense courses are designed to develop skills and competencies necessary to meet the demands of the aerial and systems installation industry.

The courses are delivered by professionals with real hands on experience at well-equipped centres around the UK.

Towards automated colour grading

(a) original image

A major problem in the post-production industry is matching the colour between different shots possibly taken at different times in the day. Francois Pitie of the University of Dublin Trinity College proposes an original method for grading the colours between different images or shots.

The first stage of the method is to find a one-to-one colour mapping that transfers the palette of an example target picture to the original picture.

This is performed using an original and parameter-free algorithm that is able to transform any N-dimensional probability density function into another one.

Applying the colour mapping on the original picture allows reproducing the same 'feel' as the target picture, but can also increase the graininess of the original picture, especially if the colour dynamic of the two pictures is very different.

The second stage of the method is to reduce this grain artefact through an efficient post-processing algorithm that intends to preserve the gradient field of the original picture.

Colour grading is important because shots taken at different times under natural light can have a substantially different 'feel' due to even slight changes in lighting.

Currently, experienced artists manually match the colour between frames by tuning parameters.

This is delicate task since the change in lighting conditions induces a very complex change of illumination.

The method presented here however succeeds in automating this painstaking process even when the lighting conditions have dramatically changed.

Colour statistics

The first stage of colour grading is to transfer the full colour statistics of a target picture example to the original picture.

The idea of transfer of statistics encompasses an entire range of possibilities from the simple match of the mean and variances of both datasets to the exact transfer of the whole probability density function (PDF) of the samples.

The one-to-one colour mapping to the original picture makes the transformed picture having the same 'feel' that the picture example but it might also produce some grain artefacts on parts of the picture.

Dynamic range

This can be understood if the mapping is done from a low dynamic range to a high dynamic range.

The resulting mapping is stretched and thus enhances the noise level of the picture, which makes the transformed picture appear as a grainy.

The second step to colour grading is therefore to reduce this artefact. The method proposed is to use a variational approach to preserve the gradient of the original while preserving also the colour transfer characteristic.

Preserving the gradient of the original picture especially protects the flat areas and more generally results in the exact aspect of film grain/noise than the original image.

The overall method, which includes as a first step finding the colour mapping and then reducing the possible grain artefact, is simple and gives attractive results.

One important aspect of the colour transfer problem is the change of

Original

Target

No Grain Reducer

With Artefact Grain Reducer

(b) recolored with (a)

(b) original image

(a) recolored with (b)

content between the two pictures. For example the target picture may present more sky than the source picture.

Unrealistic renderings

Since all colour transfer algorithms are sensitive to the variations of the colour cluster sizes, they risk overstretching the colour mappings and thus producing unrealistic renderings.

A simple solution is to manually select swatches in both pictures and thus associate colour clusters corresponding to the same content.

One automated solution is to invoke the spatial information of the images to constrain the colour mapping. The extreme case concerns the difficult task of colouring greyscale pictures.

Retrieving the missing chrominance channels values can be done by taking advantage of similarities between spatial neighbourhoods of the two pictures.

Another automated method is to restrict the variability on the colour mapping. This gives a more natural transformation but limits the range of possible colour transfers

Our method is able to map shades of green to shades of orange as shown above.

The colour mapping to the original picture transfers correctly the target colour palette to the original picture but it might also produce some grain artefacts as shown below left.

The solution is to run a post-processing algorithm that forces the level of noise to remain the same.

The idea is to adjust the gradient field of the picture result so that it matches the original picture. If the gradient of both pictures are similar, the level of noise will be the same.

Variational approach

Matching the gradient of a picture has been addressed in different applications like image stitching or high dynamic range compression, and it can be efficiently solved using a variational approach.

In figure 5, the original mountain picture is used as a target colour scheme for the seaside image in figure 6 taken from the original in figure 7.

Even when using the grain artefact reducer, an unavoidable limitation of colour grading is the clipping of the colour data: saturated areas cannot be retrieved. A general rule is to match pictures from higher to lower range dynamics.

Conclusion

The proposed original technique for colour grading is based on an exact transfer of colour pdf of the target picture, which is guaranteed to converge at low computation costs.

The possible grain artefacts are removed in a second step. The overall technique is easy to implement and works for a large variety of scenarios, even when the example picture is very different from the processed images.

Acknowledgements

We would like to acknowledge the helpful discussions with Bill Collis at The Foundry. The Foundry has licensed this technology for use in the product called Furnace.

This work was supported in part by HEA Project TRIP and GreenParrotPictures. The above is an excerpt from a paper presented at the IEE's CVMP 2005 conference.

Panasonic LCD TV gets rave reviews

You don't get much change from £900 if you buy the Panasonic TX-32LXD52 from Dixons or Currys, but some high street prices can go almost as high as £1,400. With free delivery thrown in, this is still a bargain says Boris Sedacca, who had one for review.

Panasonic's 32-inch LCD digital television is high definition (HD) ready and currently receives up to 30 digital channels.

Wall mountable, it features Viera colour management, Nicam Stereo Sound (10W x 2), HDMI digital connectivity, 14ms Panel response rate, seven-day electronic programme guide, 2000-page top fast text and component video input.

Above – Panasonic equipment has proven to be invaluable to the coaching staff of the British Bobsleigh Association.

Right – The Italian bobsleigh team in action.

Below – Shelley Rudman won Team GB's first medal.

It also provides a sleep timer, parental lock, two SCART sockets, 170-degree viewing angle, auto install digital tuner and front AV sockets.

Dixons customers have given the Panasonic TX-32LXD52 rave reviews. One customer said: "Great picture quality and well designed at a reasonable price."

Black is black

Another said: "Very good looking design. Colours are magnificent - black is black," but also thought the sound could be improved slightly, and concluded: "I am very pleased with this purchase."

"Superb picture quality" was the verdict of another customer who found no bad points and added: "This TV exceeded my expectations."

Big screens take up space, but one customer said: "Top quality LCD with best use of space as speakers are under screen, saving width. I have always found Panasonic to be a superior brand."

Yet another customer said: "Excellent! I am delighted with a whole new viewing experience," while another simply said: "A lovely TV with no bad points."

Winter Olympics

I was lucky enough to have a set for review during the Winter Olympics in Torino, and I must say the experience was quite breathtaking. It was almost like watching a film in a cinema.

I managed to take photos, one of which is shown here with the Italian bobsleigh team in action.

Panasonic equipment has proven to be invaluable to the coaching staff of the British Bobsleigh Association in their preparations for the Turin Games.

"During bobsleigh training it is essential to gleam as much information from each run as possible," explained a team spokesman.

"To this end we always try to video our sessions where possible. This gives us additional information that we can pass on to the drivers.

"The use of video means that someone who is not a coach can capture the day's events and the information can be viewed by coach and athlete after the day's training.

Video replay

"This can be more useful as it gives the driver an opportunity to see first hand how they are doing on a particular corner.

"As the saying goes, 'A picture paints a thousand words' and this is definitely true in the world of bobsleigh where a coach may only see a bobsleigh on a corner for one second.

"The video enables the coach to slow the action down and show the driver frame by frame where they are on the corner.

"We have also found that with the Panasonic projector it is possible to film the TV screen at the track with remarkable quality. This has not been possible with any other camera to date.

This coupled with the ability to watch the film magnified by the PT-LM2 Panasonic projector to a large size has assisted greatly."

Silver medal

Shelley Rudman won Team GB's first medal of the Games with a superb

silver in the skeleton. Shelley staged a sensational second run in the women's skeleton to snatch Olympic silver.

"I just can't believe it. I'm so shocked," the 24 year-old from Wiltshire said afterwards.

Olympic Skeleton Team members' preparations were given a last minute boost by the generous donation of a new top of the range video camera and PT-LM2EB data projector for capturing and viewing track side footage.

Head National Coach, Michael Gruenberger highlighted the importance of good video footage: "The new Panasonic camera produces high quality images that allow us to more accurately see what our sliders are doing in corners.

"Video feedback to our sliders has been significantly enhanced by viewing these images on a big screen with the PT-LM2 projector rather than a small TV."

Video feedback

Video feedback is a core component of the skeleton coaching process. The British Team captures footage of our own athletes and major competitors from other nations on key corners every day in training throughout the 20-week winter season.

The images are then captured onto a laptop, and analysed in great detail using Quintic biomechanical motion analysis software system before the coaches show clips to athletes using the PT-LM2 projector. This feedback is used to develop sliding strategy, perfect lines and correct faults.

Performance Director, Simon Timson explains: "Athletes only have two or three runs per day on the track. That is 180 seconds of sliding time.

"Perfecting performance on a track takes hours of planning, preparation and review. High quality video feedback is essential and the equipment provided by Panasonic has helped to make the difference between success and failure in Turin."

TOP Sponsor

Panasonic, a sponsor since the 1988 Olympic Games in Calgary and Seoul, played a key role in bringing the 2006 Torino Olympic Winter Games to spectators in Torino and to billions of TV viewers around the world.

Panasonic implemented several branding activities during the Olympic Winter Games.

Under the theme: 'Sharing the Passion,' Panasonic began an Olympic-themed advertisement campaign throughout Europe in newspapers, magazines and television focusing on the excitement of the athletic performances unfolding.

Panasonic opened a website featuring Olympic Games highlights, original short movies as well as an explanation of Panasonic's involvement in the Olympic Games.

The website's archives provided immediate access to the dates and venues of every Olympic Games and came with official Olympic video footage of key moments in Olympic history.

Panasonic has also commissioned five directors to create innovative movies regarding 'Capturing the Motion' and 'Glory of Sports.' There is also a section explaining how Panasonic's technology brings the Olympic Games to billions of spectators around the world.

Media at the Games received a copy of the Panasonic Media Guide, an overview of the Games, including a schedule of events, details of all Olympic Games medal winners from 1896 to 2004, as well as information and pictures about Panasonic's involvement at the Olympic Games.

Key dealers from Europe and the rest of the world were invited to attend the Olympic Games as part of a hospitality program to promote Panasonic's sponsorship. They had the opportunity to visit different venues at the Olympic Games, watching the thrills of various competitions.

World of ideas

In major airports around the world, Panasonic has been sponsoring an exhibit space called 'Panasonic world of ideas' consisting of multiple HD displays, interactive and branding content.

Two exhibits have been installed at the Milan and Torino airports for the Olympic Games.

Panasonic supplied DVCPRO P2 solid-state memory as well as DVCPRO HD and DVCPRO50 recording equipment for the games, as well as 200 DVCPRO VTRs, 100 cameras and camcorders and 600 LCD monitors for the International Broadcast Centre, venues and broadcasting companies.

The host broadcaster of the Torino 2006 Olympic Winter Games, Torino Olympic Broadcasting Organization (TOBO), used the Panasonic DVCPRO 50 as their official video recording format and used numerous Panasonic VTRs, camcorders and monitors, as well as Panasonic's HD VTR AJ-HD1200A, which can handle both HD and SD signals.

Other broadcast stations, which have already bought their own HD products like DVCPRO HD camcorders, brought HD-related equipment to Torino to shoot, edit and transmit additional HD footage to their audiences.

With all sports being televised using the high-definition television format (HDTV), Panasonic is playing a key role in providing the necessary equipment for broadcasters to make the transition to HD.

DVCPRO P2 solid-state memory devices were also used in Torino. DVCPRO P2 solid-state memory devices have no moving parts, making them suitable for the Olympic Winter Games, because they are reliable and robust, even in severe weather.

This digital solid-state recording technology is regarded by many in the industry as potentially the most significant change to news and broadcast acquisition since the arrival of videotape over 35 years ago.

Panasonic supplied broadcast video equipment and maintenance support to the host broadcaster during the Barcelona'92, Atlanta'96, Nagano '98, Sydney 2000, Salt Lake City 2002 and has provided similar services for the Olympic Games in Athens, Greece, last summer. For the Athens Games, Panasonic's 4:2:2, 50Mbps DVCPRO 50 equipment was the official video recording format.

Panasonic's DVCPRO 50 VTRs as well as new "P2" camcorders and decks covered over 3,200 hours of live sporting competition during 17 days, from August 13 to 29, of the Olympic Games.

Supporting the Olympic Games has become a part of the tradition of Panasonic. Since the inception of the TOP Programme by the International Olympic Committee, Panasonic has been a TOP Sponsor and has supported the Games in the following capacities:

- Video Equipment Sponsor in the 1988 Olympic Games in Calgary and Seoul (TOP I)
- 1992 Olympic Winter Games in Albertville and the Olympic Games in Barcelona (TOP II)
- Video and Audio Sponsor in the 1994 Olympic Winter Games in Lillehammer
- 1996 Olympic Games in Atlanta (TOP III)
- 1998 Olympic Winter Games in Nagano
- 2000 Olympic Games in Sydney (TOP IV)
- Video and Audio Equipment and Recording Media Sponsor in the 2002 Winter Olympic Games in Salt Lake City
- 2004 Olympic Games in Athens (TOP V).

Panasonic will also support the Beijing 2008 Olympic Games (TOP VI) as a TOP Sponsor.

Could you be a soundtrack pro?

It does not have all the bells and whistles of full-blown multi-track audio recording software, but Apple's Soundtrack Pro is pretty cool, even if it is only part of a bundle within Final Cut Studio. Boris Sedacca juggles with loops and lays down some tracks for readers to listen to.

Apple has a flagship multi-track recording software package called Logic Pro, which I hope one day I may feel confident enough to try out. In the meantime, I have been having a lot of fun with its not-so-poor cousin, Soundtrack Pro.

"Sound is half the picture," proclaims Apple in its marketing blurb. With more than 50 effects from Logic Pro and over 5,000 Apple Loops, Soundtrack Pro provides sample-accurate and nondestructive editing in an intuitive interface.

Using ready-made loops, I was able to quickly lay down backing tracks over which I can record live instruments and vocals later. I now have backing tracks made up entirely of loops for three pieces.

My first attempt, a sort of Bluesy Fleetwood Mac-type sound, was initially abandoned after laying down only guitar and bass loops, but as I moved on to other pieces of music and got to understand more about the product, I decided to come back to it to add drum tracks.

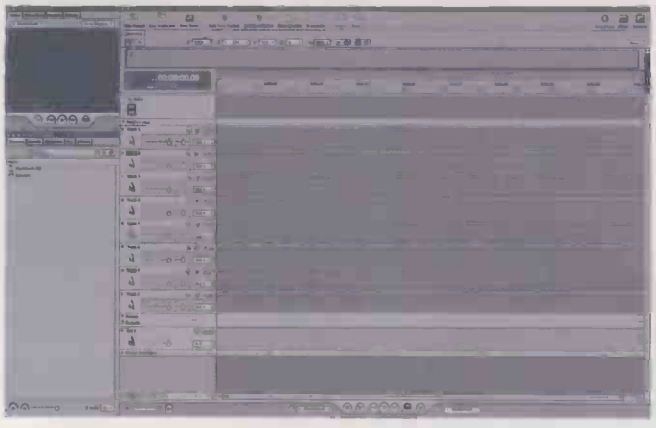
The second and third pieces are a little more polished and almost complete apart from waiting for some solo instruments to be recorded. But more on that later.

One Sunday afternoon, I laid down several percussion tracks from loops, and a few live guitar tracks played by a mate of mine.

You can record several tracks simultaneously with suitable external hardware, and there are many suitable FireWire devices available out there, but I only record one track at a time using a simple Roland Edirol USB-to-RCA socket audio interface and an RCA-to- Jack Plug adaptor for the guitar, which you can also use to record a mic.

The beauty about Soundtrack Pro is that if you zoom down to sample level, you can accurately align loops to make it sound like all the 'players' are playing together and in time.

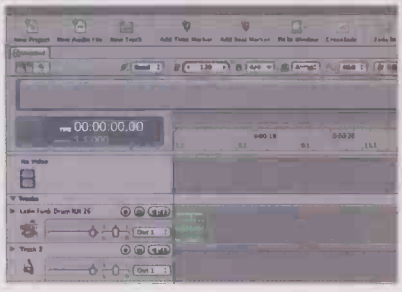
When you first load up the software, you get the following screen:



The main window shows the empty tracks. There are two smaller windows to the left of the main window, each with several tabs. The lower window has a tab called 'Search', and that is where you will find your loops. The next screen on the right shows that I have scrolled down the keywords to the drum kit loops.

Each loop property is displayed according to tempo, key, beats, and so on. Clicking on a loop starts it playing repetitively. When you find one you like, you can drag it onto a track in the main window.

I scrolled down the loops until I found one called 'Latin Funk Drum Kit 26' and placed it in track 1 as shown below.



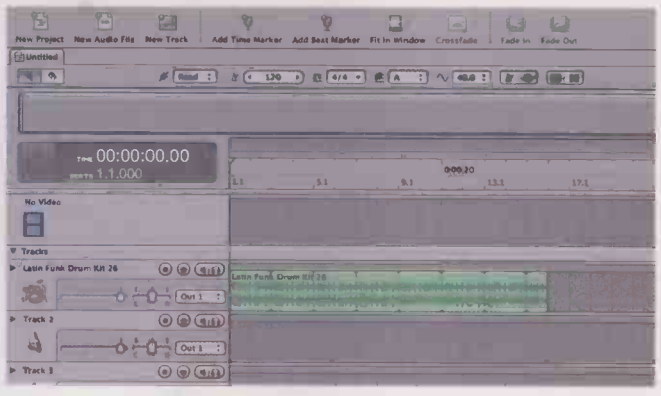
The track is automatically named after the first loop that is placed in it.

Now note the bottom of the main window; the 'tape transport' mechanism reproduced below. The record button is first, and the next four are fairly self-explanatory, but the item after that - looping - is shown as 'greyed in', or in the ON state.

This means that if you click on play, the loop will just repeat itself, with the tape head going back to the beginning every time it reaches the end of the loop.

Switching it off allows the tape head to continue after the end of the loop. The loop length is only four seconds long, but if you click on the right edge and drag along the track, you can make it any length you like.

In this case, I have dragged it to seven-and-a-half times its length, or 30 seconds. This verified by the timeline above the video track at the top.



You are bound to want to do more before mixing down, but you can do a mixdown at any stage as often as you like by going to the file menu, then export/export mix. The mixdown is saved as a stereo AIF file, which can then be converted to MP3 in iTunes to keep file size down.

This is what I have done to allow you, the reader, to hear what 30 seconds of Latin Funk Drum Kit 26 sounds like. This is called Sample 1.mp3 and you will find it at www.televisionmag.co.uk/MP3.

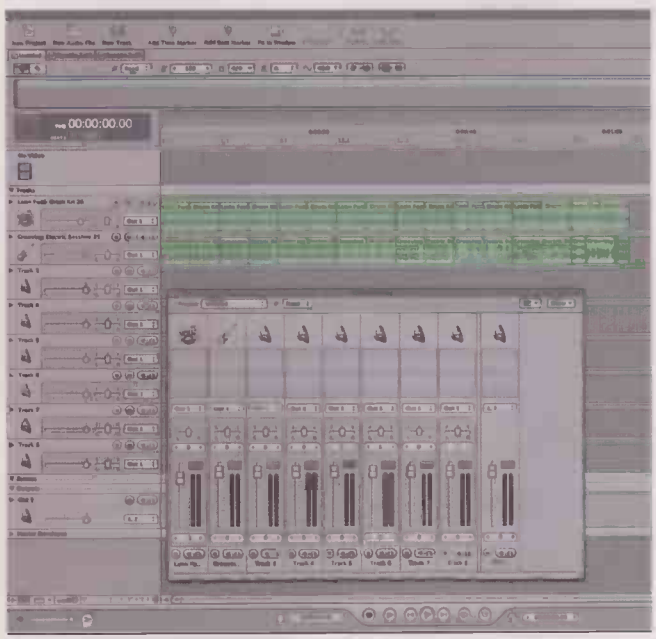
On its own, I must admit it is pretty boring. You need to add other instruments in other tracks. You also need to vary the drum track itself, so instead of thirty seconds of Latin Funk Drum Kit 26, let us just make it eight seconds, followed by eight seconds Latin Funk Drum Kit 27 (or any other track you choose), and so on.

For the sake of simplicity, I have just used eight seconds of Kits 26 through 33 consecutively, which makes 64 seconds, and mixed down to produce Sample 2.

Now you will hear there is a bit more variation in the rhythm. The track now looks like this:

Now let us add another instrument. Not all samples are four seconds long - some are two, some eight, and so on.

In the case of the Grooving Electric Bassline, which starts with loop 35 on the bass track as shown below, for the last 16 seconds I have used one eight-second sample, one two, one four, and one two (without lengthening any of them as I did for the previous samples).



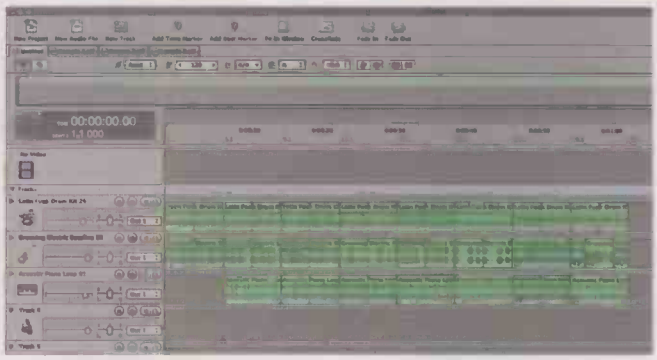
Note that I have dropped in a mixer (from the Window menu) because I needed to reduce the level of the drum kit by -3dB. (Flaming drummers always thrash their kits don't they?)

So now I am going to mix down 64 seconds of drum and bass and post it up as Sample 3. The size is 1.5MB, as with Sample 2 because they are the same length. However many tracks you add, a 64-second mixdown sample will always be 1.5MB in size once converted to MP3 (11.8MB in AIF).

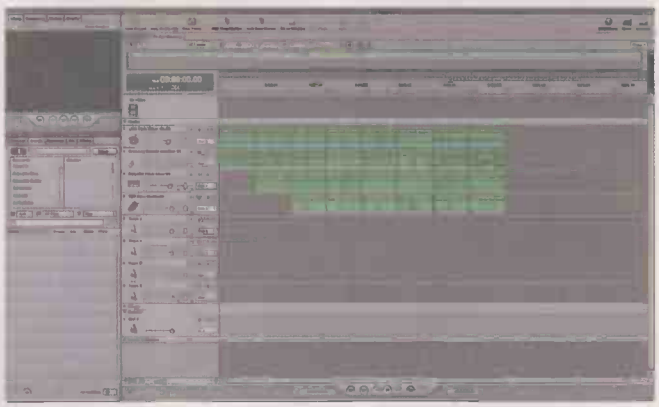
I will add piano in a similar fashion and call it Sample 4. I reduced the piano level to -1.5dB. If any reader/listener has a trained ear, he or she might have noticed that all my instruments (non-drum or percussion) loops are in the key of C.

If you want to change key, right-click (why does Apple exclude this superior feature in its own mouse) on the loop and choose transpose, then select the interval.

Using the Apple key allows you to select several loops and transpose them in one go. I have transposed the bass and piano up two semitones for the last 16 seconds as shown below, and called it Sample 5. OK, the last eight seconds don't sound that great, but this is just by way of illustration.



For the next track, I added and R&B Horn Section and transposed the last 16 seconds by two semitones again. This is called Sample 6, and could serve as a quick-and-dirty advertisement jingle. This is what the full screen now looks like:



OK, it isn't the greatest song in the world, and it is only one minute and four seconds long, but if it can inspire you to try it out for yourself, then I will be happy.

By the way, if you don't have Soundtrack Pro, there are any number of other loop-based software packages available, both for the Mac and PC.

I have shown you how to go about putting loops together, but now in time-honoured fashion, I am going to say: here's one I prepared earlier - or three to be precise.

I have posted up some of my work which I described earlier, as A, B and C (all MP3s) to the website mentioned earlier.

Next month, with a little help from my friends, I am going to record some original audio tracks over the pieces that I already produced.

Sibelius helps you score

The music for the new film Harry Potter and the Goblet of Fire was prepared using Sibelius 4, claimed to be the world's best-selling music notation software. In addition to Harry Potter, other films and TV shows for which Sibelius has been used include The Chronicles of Narnia, The Constant Gardener, Nanny McPhee, James Bond, Shrek 2, The Simpsons and Lost.

Vic Fraser: "Sibelius 4 is invaluable for preparing film music.

In the film world, professional music copyists are engaged to input, edit and print the music to tight deadlines.

The music for Harry Potter was prepared on Sibelius 4 by copyist Vic Fraser and the team at Global Music Service.

It was recorded by the London Symphony Orchestra at Air Studios, which is chaired by Beatles producer Sir George Martin - also a Sibelius user.

Last-minute changes are often required - for this reason, copyists using Sibelius 4 on laptops are present at recording sessions to make instant revisions and print updated parts.

Vic Fraser comments: "Sibelius 4 is invaluable for preparing film music. As well as Harry Potter, we've used it for many other major films and recording projects.

"Also, more film composers and orchestrators are writing straight into Sibelius rather than using pencil and paper."

Compose to video

Sibelius 4, the latest version of the software, was released last July. New features of particular use for film scoring include the ability to compose to video on the screen - the first ever music notation program to allow this, asserts the company.

You can add any video file to a score, which is then displayed on the screen in a video window, and plays in sync with the music.

Whether you are writing music, playing back, fast-forwarding or rewinding, you can always see exactly what is happening in the video at any point in the score.

You can also add 'hit points' to mark important visual events in the score, which make it easy to make the music fit the action.

Howard Goodall, film/TV composer (Mr Bean, Red Dwarf and Blackadder), is excited by the new video feature.

"For those of us who spend our days either fitting music to pictures or teaching others how to fit music to pictures, this new feature of Sibelius 4 is a dream come true. I only wish it had been available for the last 20 years," he says.

Additionally, Sibelius 4's new Dynamic Parts feature is for anyone who needs to produce separate instrumental parts, which are required for films as well as for orchestral, band and ensemble music.

Whenever you make revisions to a score, the Dynamic Parts feature instantly updates all of the relevant parts, ready to print. This is crucial for making rapid last-minute revisions to the music.

"Sibelius was absolutely vital for Narnia", says multi-award winning composer of the Disney blockbuster score Harry Gregson-Williams, recently nominated for a Golden Globe for the soundtrack.

The score for The Chronicles of Narnia: The Lion, The Witch and the Wardrobe was composed entirely within the Sibelius environment.

Both Harry Gregson-Williams and his assistant, Stephen Barton, are fulsome in their praise for the new features in Sibelius 4 and the role that the program overall played in contributing to the efficient creation of the score.

Harry Gregson-Williams is currently working on Shrek 3 and his previous score credits include Shrek 2, Sinbad: Legend of the Seven Seas, Father of the Bride and Bridget Jones: The Edge of Reason.

Sibelius rocks

As a committed and enthusiastic professional Sibelius user, he comments: "Sibelius 4 rocks! The Dynamic Parts function makes life easy and gives us flexibility under

pressure, as we can quickly change things and know exactly what parts to print out without having to make edits to every one.

"It has become feasible in a ten minute break to, say, completely alter a violin part and be able to get 20 parts revised and back on to the stand, and a new score onto the podium and into the booth quickly."

The complimentary Auto Layout feature also ensures that all parts are printed out on the page ready to play.

Sibelius 4 is used by film, classical and jazz musicians to write, play and print scores. It is also widely used in education. Film customers include composers, orchestrators, copyists, and studios such as Disney, Paramount and Universal.

By using notation software, Sibelius 4 allows composers to write music notation on the screen, edit and orchestrate it, and hear how the score will sound using realistic playback. The software also instantly produces individual parts for every player in the orchestra.

Sibelius claims to be the world's market leader in music notation software. The company was founded in 1993 by Ben and Jonathan Finn to sell music notation software for the Acorn computer.

The Sibelius notation software was released for Windows and Mac in 1998/99. Since then the Sibelius Group has developed 20 additional music products for the professional, educational and home user, ranging from Internet publishing to guitar software.

Sibelius boasts customers in over 100 countries. Sibelius is used in 60% of schools in the UK, Australia and New Zealand.

Sibelius is endorsed by the Royal Academy of Music and is used by all the major music academies and colleges: the Royal College of Music, Trinity College of Music, Oxford and Cambridge Universities, the Juilliard School, Berklee School of Music, the Sibelius Academy in Finland, the Royal College of Music in Stockholm

The world's leading music publishers including Music Sales, Hal Leonard and Yamaha use Sibelius. Sibelius was recently awarded a Queen's Award for Innovation.

Sibelius is headquartered in London, with a US subsidiary, Sibelius USA Inc in California, and an Australian subsidiary, Sibelius Australia (Pty) Ltd, in Adelaide.

www.sibelius.com

The music for Harry Potter was prepared on Sibelius 4.

Help for our industry

The Electrical and Electronics Benevolent Association (EEIBA) provides help to the needy and distressed who work, or have worked, in the electrical and electronics industries and any connected or allied industries and sciences (including mechanical engineering) in the UK.

It all started 100 years ago, when Justus Eck of the Union Electric Company published a letter on 16th December 1904 in *Television's* sister publication, *Electrical Review*.

Eck wrote: "It having been pointed out in many quarters that the electrical industry, although very wide reaching and giving employment and occupation to many thousands of individuals in all grades of life, has in connection with it, no means of supporting any of those unfortunate members who fall into temporary or permanent need, an influential Committee of gentlemen actively connected with various branches of electrical work has been constituted, to organise a Benevolent Fund for the Industry."

A long sentence, to be sure, but those were the days before Microsoft Word. The first pension for the elderly of the Electrical Trades Benevolent Institution as it was then known, came in 1910.

Poor Law

Before that, if you were unable to work, either because you were too old, or sick or infirm, then unless you had the safety net of a family or a benevolent company, you had to rely on the 'Poor Law' legislation, which meant the workhouse.

Men would be separated from their wives and their children would go to orphanages or sheltered homes.

Every year, EEIBA receives close to 1,000 new applications for welfare help. The total number of individuals and families it helps is approximately 3,500 and half of them are of working age.

EEIBA also provides sheltered accommodation. Buckingham Court is in a suburb of Birmingham where EEIBA helps to provide peace of mind and security for people of pensionable age in 19 self contained flats.

Patience is a virtue

David Patience was Financial Director of Horstman Controls but in June 2004 his life was turned upside down when the car he was driving was involved in a road traffic accident, which left him paralysed from the chest down.

Fortunately his wife and children were unscathed. After a year in hospital, he was now determined to get back to work and would like to become a non-executive director of his local Primary Care Trust.

To return to work, he needed transport that is easily accessible by a wheelchair.

A suitably adapted vehicle cost £14,500. He approached the EEIBA who arranged a visit by a voluntary visitor.

Together with a social worker they researched and produced a list of charities that they could apply to for help.

Having managed to find £6,000 themselves, David and his wife were pleased to receive help from the EEIBA and a number of other charities to produce the balance that allowed them to purchase the vehicle.

Eugene Camper, Regional Welfare Officer for the West Country & South Wales, reports that he is extremely impressed with David's positive attitude, resilience and determination to get out of the house and back to work.

David says " My family were unhurt so I can count myself a lucky man. I am also extremely grateful to all those who have helped."

Shortfall

John Grumitt, who is disabled, and his wife Maureen who is wheelchair bound, found that it became necessary for them to convert a downstairs room into a bedroom.

Their local council awarded them a Disabled Facilities Grant but this, together with a contribution they were able to raise themselves, left a large shortfall.

They approached the EEIBA to see if the charity could help. EEIBA's Regional Welfare Officer got to work and with some additional funding from another charity, the EEIBA made a contribution.

When Maureen and John were given the good news they said, "Without this help from the EEIBA,

David Patience with his children

Maureen & John Grummitt

we would not have been able to have got this work done. The new downstairs bedroom has helped to make life so much easier for us."

Trips to the countryside

Lillian and Dennis Mulligan live in Nottinghamshire and both have health problems. Dennis now has Asbestosis and Lillian has great difficulty in walking. Pushing a wheelchair for someone with this complaint, is to say the least, difficult.

Dennis approached the EEIBA to ask whether we would be able to help them to purchase an electric scooter - one that would easily dismantle and store in his car, so that they could continue to enjoy getting out into the countryside.

John Westwood, EEIBA Regional Welfare Officer for their area moved quickly to their aid touring the local disability suppliers to find one that was ideal for their needs.

Lillian and Dennis were overwhelmed with the charity's generosity and are looking forward to the better weather when they will be able to enjoy the countryside again.

Difficult access

Frank Holland worked for Carrington Power Station for almost 30 years, also being a local councillor for Trafford Borough Council.

Frank has poor mobility following a heart attack and has high blood pressure, diabetes and emphysema.

Frank needed an electric powered vehicle and after being assessed by the occupational therapist for the EPV, it was recommended that a porch be built, with electric power points, so that the vehicle could be housed.

The porch was the subject of a Disabled Facilities Grant (DFG) and included lift access to the front door.

The process was proving to be rather slow, so the local Regional Welfare Officer helped put together the case to the local authority to speed up the DFG application.

The EEIBA was pleased to help Frank with financial assistance towards the provision of his Electric Powered Vehicle.

Power Ball

The EEIBA has a broad range of events throughout the country during the course of the year, covering all tastes and interests ranging from sports activities like fishing, golf, five-a-side football and sportsmen's dinners to formal and informal occasions including local and national

Lillian & Dennis with the EPV.

dinner dances to black tie balls.

The annual Power Ball, held in the Great Room at the Grosvenor House hotel in London's Park Lane, is the jewel in the crown of these events. Originally, the Ball was a dance only, and started at 10pm after everybody had had their dinner, continuing into the wee hours, with breakfast refreshments served at 2am.

After the Second World War, the popularity of Foxtrot and Quickstep waned with the advent of Jazz and Rock & Roll, and the Ball changed to a Dinner Dance.

EEIBA chief executive Timothy Lambert recalls his first Ball in 1995, having joined the EEIBA at the end of 1994.

"We used to provide midnight refreshments – a whole variety of sandwiches and cakes. Bearing in mind that everybody had had a four-course dinner and did not finish eating until about 9.30pm, most of it went back untouched," he reminisces.

"Another significant change has been how the companies use it for entertainment. At the last Ball in November, about 250 people out of a total of 1,100 came from four companies."

More sophisticated

The military band, introduced in the 1970s, was also axed from the programme this year. Lambert feels that the audience has become more sophisticated and there are now more non-UK owners running companies.

"When London Electricity became Electricite de France, and you have French directors, it brings about cultural and social changes. Also, the average age of people who attend the ball, and those who hold significant positions in these companies, is coming down.

"There are fewer companies in the electrical industry than there were ten years ago, be it in wholesaling, generation or contracting, and fewer staff within these companies. Consultants and service providers now do the work.

"This does not only affect the EEIBA, but similar organisations, trade associations and professional institutions. The Institution of Electrical Engineers (IEE) has a benevolent fund for its own members, and we work very closely on welfare matters.

"The IEE is mentioned back in our earliest records, as are other organisations like the Electrical Contractors' Association (ECA), the Electrical Wholesalers' Federation as it was, now renamed the Electrical Distributors Association (EDA), and NEMA now BEAMA. One of our founding members was the secretary of NEMA."

www.eeiba.org

Frank and his scooter on the lift

Varicam in-depth

HD Expo's 'Varicamp' seeks to teach directors of photography how to get the most out of Panasonic's high definition camera: the Varicam. London and San Francisco-based director of photography, Jon Felix, recently attended a Varicamp in Los Angeles.

Jon Felix at Varicamp.

Widely used in Hollywood, the Varicam 720p camera, shooting on DVC Pro HD tape, offers unique features such as a film-like Gamma curve and variable frame rates.

This allows true slow motion, shooting at up to 60 fps (frames per second), in much the way a film camera can.

The three day intensive workshop is taught by distinguished DPs Robert Primes ASC, Sion Michel ACS and Michael Caporale, and DIT (digital imaging technician) CR Caillouet Jr.

Going into intricate detail, the course covers a huge range of subjects such as menus (there are several menus on the camera with hundreds of settings), set-up of the picture with waveform and vectorscope, color correction and color matrix settings and post-production – particularly with Apple's Final Cut Pro.

Originally a film DP and before that an editor, Jon Felix has become an expert on digital image acquisition and post-production. He is keen to fully understand the pros and cons of the many digital cameras available.

"I would not say particularly that one camera was better than another – the Sony F950 and the Panasonic Varicam often being compared and contrasted," he says.

Variable frame rates

"Although on paper the Sony is higher definition at 1080, for me, the Varicam provides the most interesting options. Particularly the variable frame rates."

Traditionally TV commercials have been shot on 35mm films – acknowledged as the highest quality acquisition format. Inevitably film will eventually be superseded by digital and it is therefore important for digital cameras to be able to produce similar effects. Jon Felix explains that he often 'over-cranks' the film camera when shooting commercials.

"Shooting at say 32fps for example, produces a subtle, almost imperceptible, slow-motion effect," he continues.

"It nonetheless 'softens' the movements of say an actor pouring out a drink into a glass.

Robert Primes demonstrates 'painting' with the Varicam.

A view of Varicamp from above.

"Of course, more dramatic slow-motion effects are often used as the beer splashes into the glass.

"By shooting at 50 fps (the film being shown on UK TV at 25fps) the liquid is slowed to half speed."

Previously there were no really satisfactory ways of getting these effects except through the use of film cameras. The Varicam is unique in that it always shoots at 60 (progressive) frames per second.

Only the required frames are selected – the rest being 'thrown away'. So for example, American TV with its 60Hz electricity supply is often shot at 30fps (actually 29.97), so with Varicam originated material – every other frame is discarded.

Of course by keeping all 60 frames and showing at 30fps or 24fps (for cinema) a dramatic slow-motion effect is produced.

Varicam has several menus.

Exhaustive detail

The Varicamp workshop went into exhaustive detail about the use of the variable frame rate option.

Participants learned that the camera can even 'ramp' its frame rate in the middle of a shot – so for example a runner can be seen at normal speed and then slow down to slow-motion in one continuous shot.

Robert primes ASC, a veteran of features and TV shows such as 'Quantum Leap' shared his enthusiasm about the film-like images of the camera.

With an extensive range of control of gamma curves, knees, black levels, color matrix settings, it is possible to produce images very far removed from the traditional 'video camera' look.

This takes a comprehensive understanding of the workings of the camera and the science behind it.

HD Expo is an organization dedicated to promoting the adoption and growth of High Definition tech-nology by building a community of experts and users through shared knowledge, experience and education.

Jon Felix says that the Varicamp was a most useful event, with its great blend of instructors, enthusiastic participants and loads of gear to play with!

He explains: "You know, on the one hand it is almost frustrating - the technology is constantly changing and improving, new developments appearing all the time. It's something of a full time job just keeping up.

"Film was never like this. The design of the film camera has not fundamentally changed for 80 years.

"On the other hand I am excited by the possibilities that the new technology offers.

"I have to keep reminding myself that all these cameras are just tools and that their main purpose is to assist in the making of films."

Felix collaborates with many innovative film-makers (see January's magazine article 'Something Fishy').

"As director of photography, it is expected that I will make informed choices as to camera technology and acquisition format according to the needs of the script and the limitations of budget," he adds.

"This I can do – but that the end of the day, what is this all for? To inform, educate, tell stories.

"One can loose sight of the fact that all these technological innovations are just tools."

www.jonfelix.com

www.hdexpo.net

Sion Michel ACS shows the various controls on the camera.

Keep your cool

There are two main reasons why you may want to pay special attention to PC cooling issues: small case dimensions or CPU over-clocking for games performance. Boris Sedacca re-opens the mini tower PC that he built two months ago.

The AMD Athlon PC that I built inside a mini tower case a couple of months ago was getting really hot at the top towards the rear, above the power supply and CPU.

The fan guard at the top of the relatively tall Qtec gold-coloured heatsink and fan assembly was almost touching the power supply because of the way the latter hangs alongside the CPU inside the mini case.

In a midi case, the power supply is safely tucked away above the motherboard.

Fortunately, I use a great Internet forum called Tek Tips (www.tek-tips.com) and someone there advised me to use a dual-fan supply, as per AMD's recommendations.

I obtained a matching Qtec one from eBay for £15, as shown in the photograph below.

Note the extra intake fan on the side of the power supply. Not only does it help the exhaust fan, but it is precisely positioned to fit over the heatsink exhaust fan in a mini tower configuration.

Make sure that the CPU fan blows up from the CPU. If it does not, you can just undo the retaining screws and turn the fan the other way up.

In the next photograph with the mini tower on its side, the heatsink and fan are shown in situ through the opening left by the missing power supply.

When the power supply is fitted, the grille of the intake fan just touches the grille of the heatsink fan. The next task was to try it out. I switched on the PC and left it on for a while.

When I came back it and touched the top, it did not feel like it was overheating. Finally, I ran the Asus motherboard's built-in PC Probe utility, and that checked out OK as the following photograph shows.

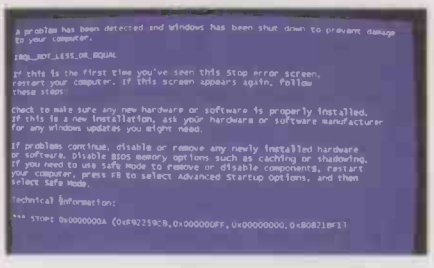
A real SOD

It's is a real sod when you get Microsoft's blue screen of death (BSOD). Once you're done (unjustly?) cursing Bill Gates, what exactly can you do get a PC back to life?

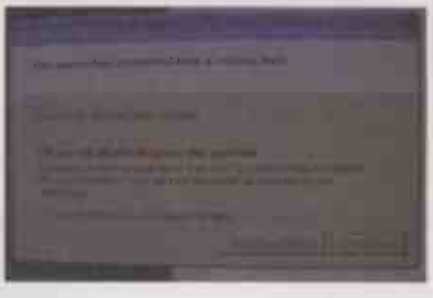
I do not guarantee a fault-free Windows installation the next time around (I do not believe anybody can), but at least I can help you get your disk back in use.

If you really get fed up you could always try Linux, but I have an atttitude that Windows is like a horse that has just chucked you. You have to get back on it and show it you're still in charge, even if you eventually decide you have to kill it.

Back in the February issue I talked about how frequently Windows dies on you. Once you get the BSOD, there is nothing for it but to perform the cyber equivalent of a blood transfusion. The BSOD will usually look something like this:



But many times the machine starts dying a slow death. Here is a photograph of how my last Windows XP installation started dying after a spontaneous reboot.



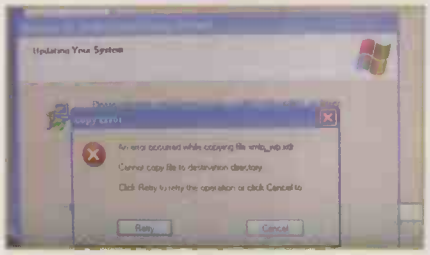
You would think that if Microsoft asks you to send an error report you should do so, but if I clicked on the 'Send Error Report' button, the machine would spontaneously reboot, and this happened several times.

Don't send

After going around that one a few times, I tried the 'Don't send' button and that helped me get back into the system, although by now it would keep toppling over after a short while.

I think it might have been a USB 2 card that I installed on the Elite K7S5A motherboard that started this, but at one point Microsoft's error reporting also identified a possible problem as a duff Nvidia graphics driver.

Then the spontaneous reboots got more frequent and I got this several times afterwards. I even tried tried to reinstall Windows XP a few times, but I kept getting the following:



Reformatting the disk under Windows XP or 2000 did not help either – Windows XP would not install cleanly.

So I decided to wipe the disk completely using a free software download called KillDisk from www.killdisk.com.

KillDisk

KillDisk allows you to destroy all data on hard and floppy drives completely, excluding any possibility of future recovery of deleted files and folders. It is a hard drive and partition eraser utility.

If you use FDISK, FORMAT utilities, or DELETE standard operating system command for data removal, there is always a chance to recover deleted data (using undelete file or some data recovery software) and use against the owner's will.

KillDisk conforms to US Department of Defense clearing and sanitizing standard DoD 5220.22-M. The most secure Gutmann's data destruction method is also implemented.

You can be sure that once you clean up with KillDisk, sensitive information is purged out forever.

This is security software for unrecoverable data elimination for any computer capable of booting in DOS mode from floppy drive.

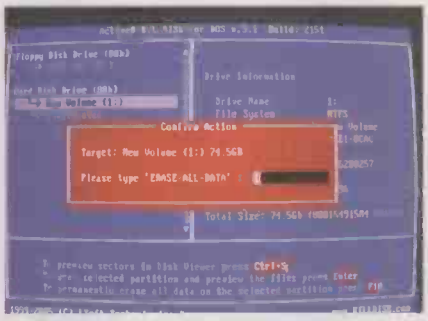
It uses access to the drive's data on a physical level via BIOS bypassing logical drive structure organisation, thus it does not matter what operating systems and file system is on the machine.

It can work with DOS, Windows 95/98, Windows NT/2000/XP, Linux, Unix for PC.

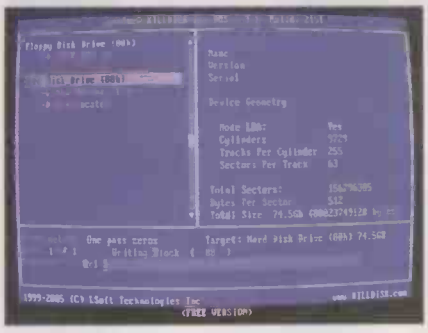
You will need a formatted diskette for the free download, which will boot the PC and start up the software. After some initial screens, you will get to the following screen:

Clicking OK will get you into the drive selection routine as follows:

You can select the entire drive or just a partition and then the following screen asks you to confirm.



KillDisk will then start erasing, showing a progress bar at the bottom of the screen as follows.



Now go to bed, or do something else because this will take a few hours.

When you come back to it and everything is erased, the system will exit you into DOS, whereafter you can format the disk.

I prefer to format to NTFS on a Windows 2000 or XP machine.

I prefer Windows 2000 because it provides the option of either FAT32 or NTFS, wheras XP only offers NTFS.

The machine will need to have a free shell on an IDE cable from the motherboard and a free shell from a power supply cable for the extra drive.

You can then switch on the PC and from the desktop, right-clicking on My Computer, and then selecting manage.

You can then navigate down the tree to Disk Management where you will see all the IDE drives installed in the system, and you can then select the drive to be formatted.

New 64-bit Sempron

The upshot of all this is that I decided to do a fresh install of Windows 2000 on my old Athlon XP2400+ and to reinstall XP on a brand new 64-bit AMD Sempron 2600+.

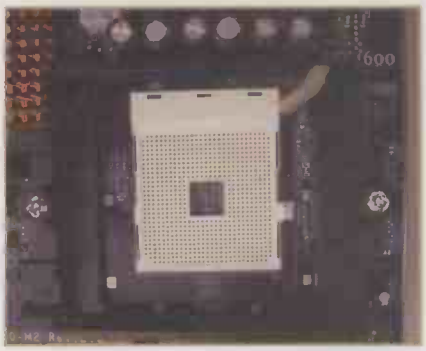
Always on the lookout for eBay bargains, I obtained a brand new Elite ECS K8M800-M2 motherboard for £30 including carriage.

This came with a backplate for the rear of the case where the various sockets come out.

I have had this problem several times and normally a case will have a punch-out backplate, but this case had silly perforations, which needed a metal nibbler tool to cut, as shown in the next photo.

The next photo show the motherboard inside the case:

Remember that this is a new type of CPU, so it has a new type of socket, called Socket 754 (for the number of pins issuing from the CPU, as shown below.



You can see a major difference in the way the heatsink and fan assembly is mounted - not on the socket itself, as is the case with Socket A motherboards, but on a separate mounting unit fixed to the motherboard.

You can see in the next photo how the CPU is locked into position in its socket.

Let us now have a look at the heatsink and fan assembly. This came with the AMD CPU in a retail package.

New lever

There are two clips either side as with earlier Socket A assemblies, but there is also an additional black plastic lever to lock it into position onto the CPU surface as shown below. This is a big improvement over the socket A system which could be very fiddly and required quite a lot of force to mount the clips. Once the clips are fastened, the lever is turned to its locked position as shown next.

I continued to build the machine in pretty much the same way as I had the previous one, and when I thought it was ready, I switched it on, but although everything started like normal, I did not the get the first BIOS screen or in other words, the system did not power on self test (POST).

New power socket

It took me a while to realise that unlike Socket A motherboards, there is also an additional four-pin +12V socket that needs to be fed from the power supply as in the next photo.

Once I did that, the machine fired up normally, and I installed XP on it. At first Microsoft would not allow me to activate XP on the new configuration, so prompted by screen messages, I had to call a US number and explain the situation.

To help those who may be confused by the different Sempron models AMD has out there, I have taken the following excerpts from hardwaresecrets.com.

AMD's Sempron processor can be found in two different socket types: 462 and 754 (these numbers refer to the kind of motherboard necessary to install the processor).

Socket 462 is the same socket type used by Athlon XP and Duron processors, while Socket 754 is the same used by Athlon 64 processors (there are also Athlon 64 models that use a different kind of socket, called Socket 939).

Thus, Sempron processors based on the socket 754 pinout use the same motherboard originally designed for Athlon 64 CPUs.

Actually, these processors are in fact Athlon 64 CPUs with less L2 memory cache and with the 64-bit instruction set disabled.

However, since last June AMD decided to activate the 64-bit extensions on socket 754 Sempron processors.

Because of that there are Sempron processors in the market that have these instructions and processors that don't have them.

How can we detect if a Sempron CPU has the 64-bit instruction set? By looking on the processor metallic plate to see what is written on it.

If the two letters of the first line are "BX" it means that this model has the 64-bit instruction set. For example, "SDA3100AIP3AX" indicates a Sempron 3100+ without the 64-bit instruction set, while "SDA3100AIO3BX" indicates a Sempron 3100+ with the 64-bit instruction set.

Sempron is a slower Athlon XP (the exception goes to the Sempron socket 754 versions, which are Athlon 64s with less L2 memory cache; these models use socket 754 pinout, thus requiring motherboards originally developed to Athlon 64, having a greater performance then socket 462 models).

Originally Sempron socket 754 didn't have the 64-bit extensions available on Athlon 64, but since July, 2005, AMD introduced the 64-bit instructions on these processors. So, the socket 754 Semprons listed below can be found with or without the 64-bit extensions.

The models with 64-bit extensions enabled have the letters "BX" as the two last letters printed on the CPU package.

The difference in performance between Sempron and Athlon XP occurs due to the numbering system used to designate the processor's speed, which is differente for each processor.

A Sempron 3000+ isn't faster than an Athlon XP 2800+, even though it has a greater number.

The processor numbers can only be used to compare CPUs in the same product line, i.e. you can only compare Sempron to Sempron and Athlon XP to Athlon XP.

Innovation in Surrey

The University of Surrey is gaining an international reputation for its short courses in electronics and communications, developed specifically to address the current needs of the electronics industry.

Recent courses in Satellite Communications, IP Networking, High Definition Television, Antennas and RF have attracted international as well as UK delegates.

The courses have recently been endorsed under the IEE's Professional Development Endorsement Scheme.

Barbara Steel, Continuing Education Manager for the School of Electronics and Physical Sciences said: "We are delighted that our courses are so successful.

"We have many repeat delegates who give us very constructive comments on our courses and we make changes to our courses on an ongoing basis based on their feedback.

"We have a firm commitment to developing courses relevant to the needs of industry today and always welcome ideas for new courses on emerging technologies.

"I am delighted that our courses are recognised internationally and are seen as standards for the Satellite Communications and Television Industries in particular.

"We have some bursary funding for UK and EC students on our Modular MSc via short courses and this is appealing to employers who wish to improve their employees career prospects whilst retaining employee loyalty."

New courses planned for 2006-2007 will include 'Television for Mobiles' and 'Introduction to Nanotechnology.'

HDTV

The University of Surrey, in association with Mandercom, has recognised the need for training for engineers working within the television industry who need a clear view of the wider context within which their role lies.

Following on from their successful courses on Digital Terrestrial Television, which has trained over 250 engineers to date, a new course in High Definition Television is taking place from 28-29 March 2006 and a further course will be run in Autumn 2006.

The main aim of the course is to give delegates an overview of technology issues that distinguish high definition TV systems from standard definition.

The focus will primarily be on encoding, transmission, receivers and displays, but will also explore production processes where they have a particular impact on subsequent parts of the system.

The course will be suitable for a variety of organisations including production houses, platform operators, carriers, transmission companies and CE manufacturers.

Topics covered include Standards, Video Coding, Audio, Displays, Receivers and Measurements and are given by presenters from leading companies such as BBC R&D, TTi, Dolby, Pace, Gennum, Tandberg and Sony.

Richard Brooking of BSkyB will give a keynote speech at the start of the two-day course including a demonstration of the latest HD technology and there will be a roundup by Brendan Slamin, followed by a panel discussion.

Visits are also being arranged to the University of Surrey's I-Lab and HD Laboratory.

Discounts will be offered to members of the IEE, Royal Television Society and the Digital Television Group.

DTT

In 1998 the world's first commercial DVB-based Digital Terrestrial Television (DTT) service was established in the UK.

Arguably one of the most complex broadcasting systems in existence, this system now supports over 1.2 million pay TV subscribers, as well as providing a wide range of free-to-view channels.

The University of Surrey's School of Electronics and Physical Sciences recognised an immediate need for a technically based short course which would give an overview of DTT to those working in the industry and for engineers interested in the subject.

Sponsored by Philips, this course has benefited over 200 engineers working within the television industry.

Transmitter at National Grid site, Guildford.

In addition to learning new topics, the course gives them the opportunity to mix with others in their field of expertise and to learn both from the presenters and the other attendees.

The course draws on speakers from organisations directly involved in the DVB/DTT industry.

Speakers include those working for Mandercom, Tandberg Television, Philips Semiconductors, National Grid Wireless Group, NDS, TTi, Broadlynx and the Independent Television Commission.

Topics covered include MPEG-2 encoding, OFDM modulation, coverage planning, receptions issues, receivers, distribution networks, operational monitoring and transmitters.

The course includes a visit to National Grid's transmitter site in Guildford.

The next Digital Terrestrial Television course at the University of Surrey will run on 26-28 June 2006.

For further information contact
Barbara Steel on +44(0)1483 686040
Email: B.Steel@surrey.ac.uk

John Parker

Matsui 28WN20 (AK37 chassis)

When you put this TV into standby, then turn the set on out of standby the green LED on the front would pulse with no further action. I found zener diode ZD901 (8V2) was short circuit in the standby circuit. It looks like a surface mount resistor (330 marked on its body).

Matsui 28WV2DP (CUC2059 chassis)

This TV would not come out of standby. Resoldering the usual dry joints did not cure the fault, so I decided to go back to basics and check all the HT rails. I found the main HT, the H+(5V) and the F+(5V) rails to be present but E+(8V) rail was at 0V. With my meter I established a short circuit was present on the 8V rail. After much time spent removing links to isolate the short, I arrived at the tube base, where I found C24022, a 100uF capacitor, had been ripped from the PCB with its legs shorted together. I also found C40012 had been ripped out of the circuitry. Replacing these cured the fault. I wonder if someone had sabotaged the set?

Grundig WF82-3020A

This set had an east-west fault i.e. no east-west correction. I found the frame IC TDA8358J had no output on pin 11. I measured pin 11 to earth and found it to be short circuit. Replacing the frame IC cured the fault.

Toshiba 28W2B

This set had excessive width. I found C622 (15NF) was short circuit.

Ferguson FTV280N (AK37 Chassis)

This TV would not come out of standby with the red LED flashing I found D810 (UF5402) was short circuit.

Ferguson FTV28FW1 AK45 chassis

This TV would start up then shut down. The usual fault is a corrupted EEPROM, which usually affects the 4:3 mode. Selecting the different ratios can prove this. The set will usually cut out in 4:3 mode. You sometimes find the frame IC STV9379FA to be faulty. An easy way to establish this is to check R603 (0.47 ohm). If it is open, the frame IC is faulty. In this particular case the fault was different. I managed by sheer luck to get a raster for about 30 seconds then it shut down. All the HTs from the power supplies where correct, but going on a hunch I decided to check the frame output waveform at pin 5. It appeared to be OK. However I found the 60V rail to pin 3 of the frame IC low at 27V. Usually this would be the frame IC or R603 (0.47 ohms), but in this case it was C631 (100nF) leaky on pin 3. A small disc type capacitor replacement cured this fault.

Ferguson FTVD421T TV/DVD/VCR combi

This TV was completely dead, no standby light, I found R1703 (2.2 ohm resistor) was open circuit along with IC701 (STR-W6853) being short circuit between pins 1 and 3. Replacing these, and replacing the optocoupler for good measure, cured fault. A soak test showed all was well.

Philips 24PW6005/05 (A10 chassis)

When this TV was switched on, the standby light would come on and immediately go out. Removing the chassis for a more detailed look showed the mains switch was arcing. Moving the shaft assembly got the set working and fitting a new mains switch cured fault.

Ferguson FTV280n (AK37 chassis)

This set would not come out of standby with its standby light flashing. D810 (UF5402) was short circuit.

Philips 32PW6526/05 (A10 chassis)

This set would produce green flashes on screen. Tapping the CRT neck produced the fault. I replaced the CRT only to find the remote sensor did not work. Fitting a new sensor got the remote section working. I then discovered I had no sound. I had to replace the painter IC, an ED1.2, to finally get the set working.

Ferguson FTV28FW1 (AK45 chassis)

This set was dead. I found the internal fuse S103 was blown due to the FET, Q102, being short circuit along with R112 (surface mount resistor) being open circuit. After replacing these items along with IC106 (MC4408), the set was still dead. I then found R108 (10 ohm) in series with pin 5 and Q102 gate was open circuit. Replacing this finally cured fault.

Ferguson FTVFW1 (AK45 chassis)

This set was tripping. The HT diode D121 was short circuit. The usual cause of this fault is the primary reservoir capacitor C107 (330uF) dropping in capacitance. I have had this fault several times: if you just change the diode it will almost immediately go short circuit. Changing C107 will provide a cure.

Matsui 28wn20 (AK37 chassis)

This set was stuck in standby with just the red LED on, I found the micro to have the correct supply present along with the reset pulse, but it had no clock on pin 50/51 (4MHz). Replacing crystal X501 cured the fault.

Charles Arundel

Daewoo GB14H3T2 14" CTV/VCR Combi (Chassis CP082)

Fault: no picture. On switch on HT comes up to 143V then drops back to 40V. The problem was caused by an open circuit 3.3V regulator I826, therefore no feed to the micro.

Daewoo DP42SP 42" plasma monitor (Chassis SP115)

Fault: very faint square patterns, each about 1cm square, in the background of the whole picture. Replacing the digital PCB cured the fault. At present, plasma repairs are not expected to be completed down to component level.

Daewoo DSL-17D3 LCDTV (Chassis SL110P 17")

N.B.: This same model could also have the later SL120P chassis, recognised from the rear of the set by the position of the aerial input coax socket. The SL110 chassis has the aerial socket on the right and the A/C adaptor input on the left. The SL120P chassis has a different chassis with the aerial input socket on the left and

the A/C adaptor input on the right.

Fault on SL110P Chassis:
Dark negative picture (solarisation). Cause: Faulty main (video processing) PCB.

Fault on SL110P Chassis:
No picture, screen black, sound OK. Cause: faulty inverter PCB.

Fault on SL120 Chassis:
Intermittent dark negative picture (solarisation). Cause: loose LDVS plug from the main PCB to the connector at the top of the LCD panel. N.B.: There is an interference choke placed around the cables to this plug and later models have taped the choke to the back of the LCD panel, for added rigidity, to stop the choke pulling the plug out of the socket.

Fault on SL110P Chassis:
Initially picture perfect, then after a while it goes dark and negative (solarisation). Cause: Faulty Main (Video processing) PCB

Fault on SL110 Chassis:
Green vertical line on screen, otherwise picture perfect. Cause: faulty LCD panel (probably a bad connection in the panel assembly but this cannot repaired, so complete panel has to be replaced).

Fault on SL110P Chassis:
On switch-on, picture breaks up and starts jumping, then eventually produces a mass of horizontal and vertical lines, which completely obliterates the picture. Cause: faulty main (video processing) PCB.

Fault on SL120P Chassis:
Small dark transparent spot on the screen about the size of a thumbnail. The rest of the picture perfect. Cause: the screen has received a knock from a small object, possibly a kid's toy, which has deformed the front filter assembly of the LCD panel. The cure is to replace the complete LCD panel.

John Coombes

Sanyo model CE21MT3H
No Result: if there is no result and the red LED is flashing check on the main PCB for resistor R48 (1.8 ohm) for dry joints. Resoldering will restore normal operation.

Sony model KV24LS35
Dead: if the set is dead but the green LED is lit and red LED is flashing just twice, be sure to check the power supply. In this case we found resistor R618 (270k) had gone open circuit.

Ferguson model T10R
No sound or picture: in this case, if the picture is grainy when searching for channels, or even by direct entry of the channel, the picture rotates between picture and grainy picture. Check the tuner units pin 4 for 33V. If this is missing or very low, check resistor RH04 (27k) for open circuit. The resistor is fitted near the line output transformer.

Sharp model 28HW53H
Front controls and remote controls not operating: if this fault occurs then check Q715 (2SK2175) and/or Q717 (2SC2412) for leaky condition.

Sharp model 28HW53H
Bright raster with flyback lines: this fault can sometimes be incorrect setting of the G2 screen control on the line output transformer, but in this case it proved to be faulty transistor Q912 (BC337/40) on the CRT tube base.

Proline model 2895S (Chassis 11AK19P5)
Tripping in standby mode: this can be due to a short circuit in the power supply or line stage. In this case we found resistor R816 (1.5M) open circuit.

Sharp model DV5105 chassis DECO4
No result: if there is no result, with the set tripping, check resistors R751 and/or R757 both (0.33 ohm) part No. VRN-VV3ABR33J - check for open circuit.

Philips 32PW9631/25 (Chassis GFL2.30E)
Intermittently dead: if the set goes dead intermittently with the LED flashing, and with the set then going into protection mode, check for dry-joints on coil 5480 in the line stage.

Toshiba model 28YT56
Bright raster/flyback lines: on checking for 200V on the tube base it was present on one side of resistor R906 (10 ohms) but the other side was zero due to resistor R906 open circuit.

The resistor R906 was at fault however due to IC900 (TDA 6108AJF) having gone short circuit. The replacement of both components restored normal operation.

Thomson model 28DG170G2
No result: this fault can be traced to the start-up circuitry. Check the resistors RP005 and/or RP007 (2x 100k). Check for open circuit or very high in value.

Matsui model 28M3
Dead LED flashes: this fault can be traced to resistors R620 and/or R621 (2 x 120k) for open circuit.

Matsui model 28WN03
No picture: if there is no picture and no on-screen display with just a blank raster, this is due to diode DC04 (1N4148). Check by replacement because in some cases the diode does not read faulty.

Chris Plaice

Bush 28" widescreen TV model WS6674
The fault with this set was 'no sound or vision' with, unusually, a plopping from the speakers, instead of the usual power supply ticking. I found that the power supply was running but the voltage on the collector of the line output transistor was jumping all over the scale on the digital voltmeter. This normally is a sign that there is a lot of AC, and sure enough CP18 a 47uF 100V capacitor in the HT to line output stage feed was o/c. It looked perfectly OK, but a replacement brought the set back to life.

Bush WS6680 SIL
The set was continually stepping up the channels. I unplugged the lead connecting the front panel to the main chassis to eliminate the possibility of a leaky or short circuit programme-up switch and it was still the same. This meant a possibly faulty 80-pin surface mounted IC. However I discovered that if I held in the front panel programme-down button, the remote control worked all functions normally,

so I short-circuited the programme-down switch.

The set is now 100% except the front controls volume-up and volume-down, and programme-up and programme-down have no effect, but I am sure that the customer can live with that in view of the cost saving.

Sony WEGA KV32FQ86

There are big TVs, bigger TVs, and then there is the Sony WEGA KV32FQ86! It took three of us to lift it onto the bench. The fault description was: "It takes half an hour to come on." And sure enough it did. At switch-on, the relays clicked a couple of times and the set went off again. Not having a circuit diagram for this monster, I resorted to the wife's trusty hair drier, and after a bit of poking around, found that heating IC6802 on the front of the LOPTX panel started it up and a squirt of freezer stopped it again. The IC is an MC300 1DB, which I obtained from Wiltsgrove. It arrived the next morning (quick service!) I fitted it, and the set burst into life, in spite of the fact that my workshop probably got down to minus 3 during the previous night. One happy customer. (Needless to say I suffer from 'TV repairman's Back'. Don't we all?)

Neil Baker

Sony TV model KVM 1420U

This came with the report that the picture would go darker and darker till you could see virtually nothing after half an hour. The tube heaters were checked and were functioning normaly. Further checks where made and C012 22uF 50V was found to be leaking.

Matsui 28M1 MK11 (Chassis EB4-A28)

Dead: standby LED flashing and no output from the power supply. Check the two start-up 120k resistors R620 and R621. R621 was very high and this cured the problem.

Daewoo TV/VCR combi GB5582txt

Dead: no sound or picture. Checks in the power supply soon revealed that the electrolytics were low in value: C808, C807 and C810, all 100uF 25V, and C809 1uF 50V. Once all these had been replaced the set sprang to life in this ageing combination.

Thompson 24WT25UG

Intermittently cuts out to standby, a fault which may become common. Check whether the connections on the small sub/PFC 17300 stand off PCB in the power supply are dry jointed. Mine has never been soldered correctly from new. You need to take the PCB out from the motherboard. All was once again fine after re-soldering all connections.

David Kerrod

Sony KV28FX68

Very small picture only about 8", also with lines: The HT supply was OK but we found the +11V was incorrect. C6028 4700mF 25V was faulty.

Sony KV28LS60 AE6B Chassis

This set had a very intermittent no sound problem. There was no audio from the MSP IC2000 to the output stage. The supplies were OK but after monitoring the data lines SCL/SDA on pins 2 and 3 the signal went low on pin 3. Following the print from pin 3 across to the tuner area there is an insulated print track which was going high resistance. This was confirmed with use of freezer. Link out from suitable points cured the fault.

Sony SLVD900 VCR/DVD Combi

The picture freezes on the DVD: replacing the traverse motor Pt No 988503722 cured this one.

Panasonic TX14GV1

This set would not start up – only the relay would click. Diode D830 1N4007 was leaky in the power supply.

Loewe Xelos 5381

Excessive width and poor E/W was traced to a badly dry jointed C542 which also s/c L537. After replacing both the problem was still there. There is a 1-ohm resistor mounted underneath L590, which was o/c and is marked as a link on the circuit. Replacing this provided a perfect picture.

Loewe Xelos 5270

This set had no sound or picture and the red/green LEDs would go straight off after switch-on. Voltage checks on the secondary side showed the +14V/+12V feed was not there.

After checking the diode and print, the fault was traced to the SMPT pin 17 being o/c. A replacement was supplied my SEME.

Panasonic NVSJ220

Dead: no secondary voltages. Replacing IC1101 STRG6352lf cured the problem.

Panasonic TX24DX1 Euro 4

This dead set had no HT supply and also no standby +5V. The +7V feed was missing due to C871 1000mF 25v being s/c

Panasonic TX24PS1

A dead set with the mains fuse o/c and R813 2R7 7W o/c was caused by C821 220mF 400V being s/c.

Panasonic TX29AD1 Euro 2

This older set had poor E/W but a very good picture otherwise. The fault was traced to D536 being dry jointed and L594 u/s. Replacing both gave excellent results.

Panasonic NVSJ220

No E-E Video or sound but OSD worked OK. This machine is not really economical to repair nowadays but the customer insisted. There was video from the tuner on pin 50 of IC 3001 but no o/p on pin 52. A replacement 80-pin AN3531NFBS cured this one

Panasonic NVVP30 combi

Very slow FF and REW: if the gear/clutch is functioning correctly replace the capstan motor. We have had several with the same fault.

Panasonic NVHV830

The tape ejected straight away without being fully laced up. After removing the mechanism and cam gear, there is a lever which had the rivet broken away. Replace the lever and main cam gear and realign.

Panasonic DVDLX9

This displayed a very dark picture

with graphics barely visible. The backlight was not working. Check the +9V supply to the inverter. If it is OK replace the inverter assembly. This then produced a good bright picture.

Panasonic NVVHD1 combi

This would not play a disc and signalled 'NO DISC'. The laser was not lighting up. I checked IC5201 LD on pins 3/5, which were low, and the A+5V was low at 1.3V. The +5V comes from an unregulated +6V, which was OK and the Q33011, a 2SC1959, which was o/c.

Sony SLVSE830

This video was dead. The A5.5V was missing. DISS33 a SE55 diode was s/c.

Panasonic TX14BT (Z185 chassis)

This new set had no picture and frame collapse. A new I501 Drive IC restored a raster with the OSD working but we had a snowy picture. Replacing the tuner as well produced a good picture.

Panasonic TX36PD30

A very intermittent no picture/ brightness varying, but sound OK, was a difficult one to trace. I could eventually monitor the +12V supply, which went low to +7.8V. Replacing IC832 C0CACKH0002 +12V regulator provided a cure.

Panasonic TX32PD30

This one had a blank screen and no sound but the menus were visible. The TV/AV inputs go to the AVS PCB. On checking the supply voltages, the +12V was OK but the +9V was missing. IC3001 AN78L09TA was u/s.

Malcolm Parr

Beko NR28421NDS (14.2 Chassis)

This set came from another dealer with C623 (2200uF 25V) blown up. When replacing capacitor, set worked OK with all voltage readings from power supply OK. When the set was put into standby, C623 had 39V across it instead of 12V. Replacing ZD602 (12V Zener diode) restored normal operation.

Philips32PW9616 (MG3.1E Chassis)

The problem with this widescreen set was no picture, sound OK. When the G2 was tuned up there were no fly back lines and no picture. After replacing frame output IC there was no change. Scope readings around the HOP chip on the small signal panel lead to C2323 100nF cap was int. Replacement cap restored normal operation.

Panasonic TX28PK10 (Euro 5 Chassis)

This very reliable set was dead with standby light on. When it was brought out of standby, the relay would click then go back to standby. The problem was 300V across smoothing block on main power supply when relay switched on, but no output. Pin 8 of IC 801 had 9V on it, this being over volt sensing. Pin IC 801 was turned off. Replacing D803 12V zener restored working IC801.

Phil Alvis

Goodmans GTV69W3VPLSILI

This 28" set was tripping and the HT rectifier, UF540 type was s/c. Also the line output transistor was s/c. The HT rectifier was replaced with the recommended up-rated type and a new line output transistor. All the connections in the p/s and line scan and line drive were checked along with the relevant capacitors and the set was powered up. It worked for about 30 seconds and then frequently shut down. After much testing, and quite by accident, I noticed that the chopper transformer lead out connections were sparking across enamel wire to enamel wire. Carefully spacing the enamelled wires cured the problem and the set worked fine.

Audio Faults

Stan Falmouth

Technics SU7100 Amplifier

The owner said that this venerable unit 'sounded tizzy' when driving good speakers. On inspection it seemed that at some time the SVISTK0039 output blocks have been changed. However, a small ceramic decoupling capacitor for the RH block had been left with 'one leg in the air'. Closer inspection revealed that the 0.01µF HF roll-off capacitor C238 for the RH block was missing, although the PCB legends showed where it should be. A link associated with the capacitor was also missing although shown on the PCB.

The Technics circuit drawing shows the LH 0.01µF C237 correctly but does not show the RH component C238. Fitting the missing capacitor with its link and soldering the loose leg of the coupling capacitor restored the amplifier to an impressive performance.

It sounded fine and the Hameg scope showed that the behaviour when driving a 400Hz square wave into an 8 ohm resistor load was immaculate. Sometimes it pays to look at the hardware rather than the paperwork – the right hand should know what the left is doing!

Audio Faults

George Cooper

Philips MC-120/25

This basic micro Hi-fi came in with the complaint that it could not be switched on. When plugged in the LCD display light up but there was no response to the power button, or any other button for that matter. The operating buttons are very small on this set and do not move very much when pressed, but I did notice that the rewind button did not have the same feel as the others although it did move

After removing the case top and front panel I was able to see that this button had somehow gone off center to the small tact switch it operates and had jammed the switch on by pressing from a side angle. Once the button had been straightened the Hi-fi powered up and worked fine. Pushing the button again I found it all to easy to get it to jam again, the end of the button which pushes the tact switch seemed to have a slightly domed end, so I took a small file to the end to flatten it.

This solved the problem and the button now worked fine.

VCR, DVD & Home Cinema

George Cooper

Sanyo VHR-H791

This VCR came in with the complaint that it was dead. On test this was almost the case as the standby LED was lit, but that was it, no clock display and no response to controls by the tape transport. With the AVO I found that the voltages on the secondary of the power supply were all OK, and the two small circuit protectors were all right also. I removed the deck in case a motor short was bringing it down, but it made no difference. There was a tape stuck in the deck fully laced so I unwound it by hand as the customer was bound to want it out of the machine. I then repositioned the mode switch since I had moved the mechanism and replaced the deck. When I then powered the machine up it sprang to life, clock and all, and a test tape showed the machine was now working well, but why? Could the mode switch have caused a lockup? I could find no dry joints and the machine performed flawlessly for the next few days on the test bench. So the mode switch was changed and a further week on the test bench showed no repeat.

Sony SLV-E700UX Video Recorder

This venerable old and rather dirty machine came in with dead symptoms but the customer was keen for it to be repaired.

After checking the fuses in the plug top and PSU input, which were OK, from previous experience the PSU was deemed suspect and was removed for inspection.

The main unit is under the screened can module, which has to be carefully removed by de-soldering the lugs as well as all the through connections.

Once inside the unit looked as if it had been well cooked, dark brown staining on the circuit board and black smoky marks on the inside of the screening can.

Checking soon revealed the normal cause of the dead PSU with all the electrolytic capacitors needing replacement: C103 1uF (100V) o/c, C204 1uF (50V) o/c, C202 1,000uF (50V) low at 700uF with high ESR and C203 2,200uF (10V) OK, but weeping electrolyte also with high ESR.

Interestingly C103 and C204 were only 850 types fitted as originals. Needless to say I fitted all 1050 replacements.

The PSU was cleaned, tested and replaced into the machine the tape path and pinch roller also cleaned which restored operation with excellent results.

While this case of capacitor failure was obvious I must point out the usefulness of an Equivalent Series Resistance (ESR) meter. Many electrolytics can give good capacitance readings but the ESR can increase to the point where the circuit malfunctions.

Substitution has been used for years for suspect components but an ESR test can be done in-circuit saving time and needless damage through unnecessary removal of component.

Colin McCormick

Philips VR2023

This fault could probably have occurred on any of the VR20xx range of Philips Video 2000 (V2000) format machines, which are quite valuable today when in good working order. This one would very occasionally shut down while playing a tape. Sometimes the machine could play for three hours or more before such a failure. Nasty problem!

It was monitored very carefully and with the aid of a camcorder watching the picture and mechanism, it was possible to see

some disturbance in the picture just before the failure.

No obvious tape path problems could be detected by watching the camcorder footage during the fault condition, but the camcorder did pick up a strange sound. Just as the machine was struggling, it sounded like a motor hunting.

Hooking up an oscilloscope to monitor various points, also being watched for hours by the camcorder, eventually narrowed down the area of interest - the head drum speed was slowing just before shut down. Sometimes the drum speed would recover and playback would continue, other times the machine would stop.

During the slowing of the drum motor speed, it was noted that the motor drive voltage fell. This might have been instigated by an overcurrent condition in the motor, but in this case the motor current detection circuit did not show any deviations during the fault condition.

The feedback from the head motor tacho was a nice sinewave even during the fault, though of course it varied as the drum speed wandered. The 'Block Rotor' signal from U202 was not being activated, so no clues there.

Having been in the workshop for over a week, at this point I attempted a cheat: I swapped out the Head Servo Panel (HSP) U202 with that from another VR2023 I just happened to have awaiting attention.

A small adjustment to the head switching point and the machine was working. Confident that the problem was solved, I reassembled everything and left it on soak test. Several days later, the fault reappeared.

Checking all other signals on the Head Servo Panel was the only way forward, and I suspected a PSU problem. But the +12b, +12.1b and +5.3b lines were all stable during the fault condition.

Signals around the head piezo actuators also appear on this panel, but are not connected to the drum servo circuits so I could ignore the +/- 175b lines. 'The Hitchiker's Guide To The Galaxy' played on the machine and, as Deep Thought announced his problem was 'Tricky', the machine shut down. Tricky indeed.

Head Servo Reference and Head Disc Position signals varied during the fault condition, but more as a consequence than as a cause, I concluded. The Search forward and backward signals were not jumping around during the fault, so there was not much left to input to the U202 panel.

Only the 'Threaded Out' signal remained, which is derived from panel P70. This signal is around 12V whenever the machine is laced up. And it was. Except during the fault condition, it seemed to wander slightly, jumping about.

It might have fallen to 11V or less for an instant just as the drum speed was slowing. This would have switched on transistor 7015 on U202 and so shut off the head disc motor output stage.

Panel P70 is underneath the deck. This is accessible by undoing three screws, which hold down the deck, and placing the whole deck upended in slots provided for the purpose.

Now all signals underneath the deck were accessible during operation (if only modern video decks were built with such consideration!). The 'Threaded Out' signal on P70 comes from relay 1002 Pin 9.

During the fault condition, relay 1002 Pin15 was at a solid 12V and the relay remained energised, and so the fault had been isolated. A relay contact, which was responsible for virtually no current flow at all, had gone resistive. I replaced panel P70 and soak tested for a long time.

I treated the front panels to some new switches because some of the buttons were unreliable, even though this model has remote control. And so ended one of the most time consuming, but ultimately rewarding, video recorder repairs I have ever undertaken.

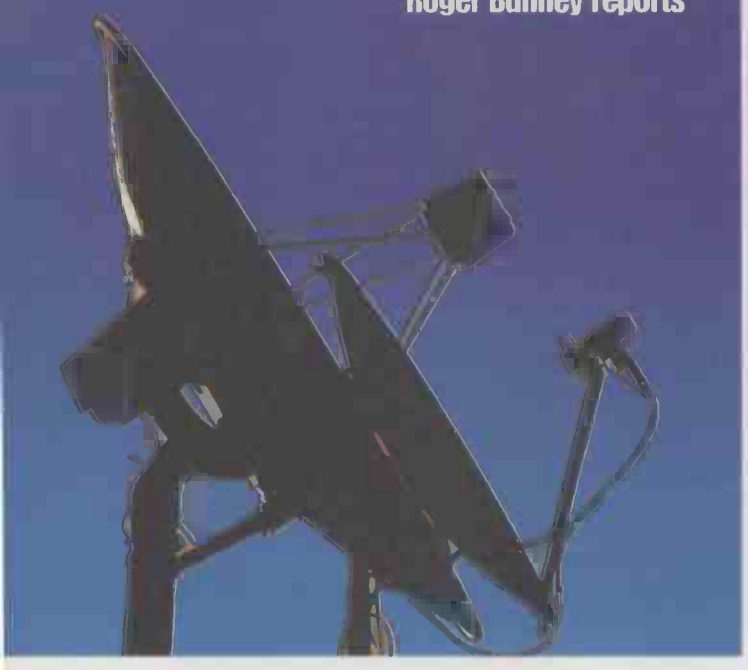
A Philips VR2021 would almost work, but in Play the pinch roller solenoid did not engage and the machine would then shut down. Had I tried Record rather than Play, I would have found that the solenoid worked! The not-PB signal was missing because transistor 7006 on U20 (Control Module) was open circuit.

These do demonstrate that this range of machines can usually be repaired by logical fault-finding and sheer perseverance, provided you have the diagrams.

DX and Satellite Reception

- Terrestrial DX and satellite TV reception reports.
- Broadcast and satellite TV news.

Roger Bunney reports



The wintry weather across the UK this January and February of 2006 has offered bitter winds, rain, sleet and snow – even an experience of frozen drizzle one day in Southampton!

Much of this has been due to the prevailing Easterly winds blowing the cold from Eastern Europe – and then towards the end of January a very settled high pressure system became 'wedged' across the UK between the warmer Western and much colder Eastern winds.

The result was a 3-4 day period of enhanced Tropospheric reception from about January 29th through to February 1st here in the Test Valley town of Romsey, Dutch TV appeared and a wide selection of French TV in Band 3/UHF to the South.

Elsewhere for those in friendlier 'Trop locations' there was much to see with enhancements mainly towards the East. The 29th January favoured into the Benelux, North France and Denmark as the opening gathered strength.

The 30th, 31st into February 1st were the peak days offering UK receive paths into the Benelux, France, Germany, Denmark and into both Norway and Sweden.

Encouraging that many local and regional UHF stations were seen in Denmark and one real 'DX catch' was Garry Smith [Derby] with the Dutch 'TV Gelderland' ch.E32 on PM 5544 test card – there are still test cards in use!

Many Band 3 signals were received in Denmark, Germany, Norway and Sweden. As conditions faded into the 2nd another DX catch by Garry Smith was the ch.R10 Plezn transmitter from the Nova network in the Czech Republic.

Cyril Willis (Kings Lynn) also exploited the excellent conditions to experience DAB reception from several UK, Benelux and Danish regions, together with 'Freeview' DTT pictures from various UK, Germany and Denmark. There is a form of digital DX after the slow demise of analogue!

It's unusual to experience such activity at this time of the year, which was described as impressive and resembling the 'good old days' when trop openings were remarkable and local Band 3/UHF stations could be wiped out for days with continental 'interference'.

Such analogue DX reception if of course very welcome but the added problems now is the growth of digital TV transmissions within the analogue bands. Thanks to Garry Smith for reception notes.

Broadcast News

Ethiopia. A relaxation in broadcasting law some years ago has at last allowed the issue of broadcasting licences to 2 private companies – 'Zami Public Connections' and 'Tisae Fine Arts & Adei Promotion'.

At this time the radio station names aren't known though will operate in Band 2 FM. Subject to vetting by the Ethiopian broadcasting authority the relaxation may well see the opening of private TV stations in the country.

Bulgaria. A new application for a nation-wide terrestrial TV channel plus local channels in Sofia and Plovdiv has been promoted by the cable group 'TV Evropa' and now awaits government approval – or otherwise.

The current 125 provisional local broadcast licence holders are likely to receive permanent broadcast licenses 'TV Evropa' may well become the nations 4th national network though it is up against strong competition from competitors Balkan Bulgarian TV and TV-7.

Digital News

UK. A new 500kW Short Wave transmitter has been installed for VT Communications allowing an expansion of DRM [digital] transmissions into Europe.

For DRM-DX chasing digital enthusiasts there have been digital test transmissions within the 26MHz band from Crystal Palace, London at 26.000 and 26.00080MHz, tuning in with a scanner on AM/NBFM produced a loud hiss – these tests ended in January.

The international rebroadcast provider WRN is providing programme content for the very few that can actually use their DRM radio to receive test signals that Arqiva are using from their Croydon transmitter site to radiate more DRM test transmissions which started January 30th.

These are airing 24 hours a day to investigate how well the DRM signals are received across London as a built up area. A 2nd UK nationwide DRM transmission to cover the UK also started early February – with no radio receivers available it's questionable how the

Murder suspect Neil Entwistle's cab awaits to whisk him to prison, courtesy State Patrol car no. 670, as seen from the WNAC-7 news chopper (via W1)

results can be assessed!

A 2nd Freeview STB has once again caused an air-sea rescue operation following a rogue mayday 'transmission' from a faulty STB being received as a distress signal by RAF Kinloss. Coastguard searches in the Portsmouth and Plymouth areas were scrambled but the 'distress signals' were found on dry land and from faulty STBs in both instances!

Brazil. Though the country is committed to enter the digital broadcasting age a decision as to the eventual standard to adopt should be made by early March. It's hoped that the political decision will be in time to allow experimental transmission in the main cities of the World Cup matches in June, the government broadcasting ministry has created a budget for the initial digital test transmissions and equipment upgrades.

Sweden/Finland. The Finnish broadcast ministry responsible for broadcasting has recently offered a 5th national digital TV licence to allow the transmission of Swedish TV programming across the country. Interested parties must send in their applications by May 1st for the 20-year licence.

Denmark. 'Digitalt Terrestrisk TV' has now full coverage over the whole of the country with an official opening for 'Digi-TV Danmark' on March 31st 2006. The national channels now fully digital are DR1; DR2; TV2; TV2 Regional; there is also a channel for the hearing impaired, interactive TV via DR-Extra and TV2-Extra.

Transmitted ERPS are high, for example Kobenhavn on ch.D51 is 50kW horizontal. The analogue TV network should remain on-air until at least October 2009 though subject to confirmation by the government.

And for DAB- radio DX enthusiasts, Danmarks Radio transmits in Band 3 ch.12C 227.360MHz [Blok 1] and Blok 2 is the 2nd DAB programme nationwide on ch.11C 220.352MHz, all vertical. 'Danmarks Radio' is planning to transmit on DAB in Sweden on channels 11C, 12C and 13B.

France. DTT is proving a hit across the country with 1.3 million set-top boxes sold by end 2005 and viewing time in digital homes has exceeded that of analogue only homes. Viewing of the 'extra' channels offered by DTT rather than the 'traditional' national channels from terrestrial has caused the increased viewing times.

Russian States. Estonia currently has DTT activity in the Tallinn/Harjuu region operated by 'Levira' with ¼ viewers to the English, Russian French and German language programming.

Latvia is on a DTT hold following the possible sale of the main TV production centre though Riga has seen some DTT tests. It had been hoped that most of the country would be DTT by end 2006 leading to a closedown of analogue TV.

Lithuania's move into DTT is more positive with at least 6 cities having 16 digital channels and by 2009 DTV should be available to 95% of the population. Switchover to full DTT will start on a regional basis from 2012 with analogue switch-off following.

Thales-Thompson and the RTRN company [operator of all TV and radio networks across Russia] are co-operating in a major distribution network upgrade to bring the system up to a fully digital standard across the Russian Federation.

Eire. Irish broadcaster RTE has started DAB radio testing early January until Easter across the Dublin area and if successful RTE will then apply for a full DAB transmitting licence.

Satellite News

The Isle of Wight local TV station 'Solent TV' announced on February 14th that their move onto the Sky 28.2° East platform, expected during March 2006, has been postponed for the foreseeable future due to a funding stream problem.

'BBC World' goes totally digital from April 18th when all analogue TV satellite transmissions cease and will be found on either Hot Bird-6, 13° East - 12.597GHz-V (27500+¾) or Astra 28.2° East - 11.597GHz-V (22000+⅝).

3A 16:9 test card compressed into 4:3, BBC London (AB-1

An Arabic language version of the Russian new channel 'Russia Today' – which currently airs in English – will soon hit the satellite air waves. The government financed TV channel provides the Russian viewpoint on both domestic and international news and developments, the Arabic language channel head is a former newsman from the 'Al Jazeera' Arabic news channel.

A new arrival on Intelsat 10-02 @ 1° West are additional TV channels from the Romania Cable Systems DTH company (RCS). RCS are expanding their coverage into both Slovakia and Hungary with further digital programme bouquets. RCS has been active since 2004 with nearly 60 channels across Europe and North America on this satellite.

Over the UK horizon is the new 'Americas0-8' satellite (Intelsat IA-8) slotting @ 89° West with DTH transmissions into Central, Latin and South America with both Ku and C Band transponders, the former down to 65cm dishes.

The Intelsat IA-8 provides for internet, SNG, DTH and broadcast network distribution for the main market of Brazil and with further coverage of central America and the Caribbean.

Vietnam is intending to launch its own satellite in 2008 and the government is seeking companies to bid for the project which is valued at $US200m and will be operational until past 2020 providing general communications and TV transmissions across the country. There still remains the resolving of orbital slot allocation which already created delays whilst this difficulty is resolved with other satellite operators.

Satellite Sightings

At the time of writing the Winter Olympics is in full session from Torino (Turin) Italy and with regular and one-off sports transmissions appearing on many

satellites across the Clarke Belt.

I was alerted by Alan Richards (Skegness) to check out the Eurobird 33° East slot where there was a mass of downlinks to be found.

These appeared in several multiplexes across the 10.950-11.750GHz spectrum both vertical and horizontal with dedicated content feeds identified such as Snowboard; Bob Sleigh; Speed Skating; Alpine Ski Biathlon etc and a single feed for the Austrian TV service 'ORF-1 feed' – parameters used – Symbol Rate 27500 + Forward Error Correction ¾ – but all the signals are encrypted!

There have been Winter Olympics appearing on 28, 16, 13, 10 7° East and on 1, 5, 8, 12½° West, probably others that I've not seen. Typical of a short sports feed was on February 13th via Intelsat 10-12, 1° West with the sat truck 'MMG-SNG 2A' for MDR, Germany and interviews + video playbacks @ 11.512GHz-V (6109+¾), content was being fed for 'STRATOS TV - Film Fernseh Produktion'.

A rare live Syrian news feed (W1)

Mid February and the arrest of the murder suspect Neil Entwistle in the UK and transfer to Massachusetts, USA for trial over the shooting of his wife and baby at Hopkinton, Mass.

At 2200 hours UK time, February 15th, the APTN UO4 European distribution slot over Eutelsat W1, 10° cut from their on-screen logo to an in-flight news chopper 'somewhere' over an American airfield.

High in the distance the lights of an approaching 'plane which is followed into its landing in close-up from the news chopper. The aircraft carries the motif 'United States of America' and 'Spirit of America' but it's not President Bush that disembarks but the handcuffed Neil Entwistle.

He is quickly moved to the nearby 'State police' patrol car no. 670 which is driven in convoy along with another four cars, again followed in vision by the news chopper and eventually arrives at an overnight custody building.

The following UK evening UP4 cuts into further news chopper coverage of Neil Entwistle's appearance in court and the drive back to jail in a Transit like van, coverage again from the local terrestrial channel 7 news chopper – probably WNAC-TV Boston.

There is intense interest in this case by the American public mainly from the shooting of the baby and the accused internet activities. Check UP4 on W1, 10.972Ghz-V (41657+⅝).

Neil Entwistle had previously been featured on 'SKY NEWS UKI-588' from 'SKY NEWS LONDON SIS CREW' Feb. 9th with a shivering reporter outside of Bow Street Magistrates Court updating viewers on the latest extradition moves in returning Entwistle back to the 'States – using the favoured 12.525GHz-H 95632+ ¼) slot on W2. This transmission courtesy 'Tandberg Service'.

'GLOBECAST AFRICA' often pops up on PAS-12, 45° East but you must be quick as news feeds are short – for example 'GLOBECAST CPT' appeared on February 19th at 1600 hours on a 'blind scan' but by the time it had been put into memory and checked the signal had gone down (11.252Ghz-V, 5632+¾).

However a February 13th reception from 'GLOBECAST AFRICA' was on a nearby frequency of 12.517GHz-V and the feed was 'transmitting back' the 'BBC 24 Hours' channel suggesting that the transmission had just been carrying a two-way between Johannesburg and BBC London.

PAS-12 can be active but you've got to be quick on the draw! Inadvertently I caught a 'rare DX' signal from Damascus, Syria @ 1640 hours UK also on the 13th.

Having just swung the dish back from Eutelsat W2, 16° East to W1, 10° East I carried out a 'blind scan' but failed to adjust the LNB settings and scanned over the 12.500-12.750GHz-H spectrum over 10° East. The signal appeared from Damascus which had been carrying a news feed at 12.523GHz-H (3151+¾).

Two days after sending my last column, tragedy hit Poland when the roof of an exhibition centre at Katowice collapsed killing over 60 of those inside – January 28th.

There have been heavy snowfalls over all of Europe this winter and at the Katowice centre the weight of recent wet snow froze that on the centre roof caused it to collapse during a pigeon fanciers show.

Though the centre management claimed the snow had been cleared, the live news reports transmitted by 'POZNAN TVN 24' clearly showed the snow over the wreckage – it hadn't snowed since the collapse. For several days rescue updates were carried live from the disaster by the 'Poznan' sat-truck - 12.540GHz-H (5632+¾) on Eutelsat W2, 16° East.

'Lifestyle TV' is an American religious TV channel that appears over Intelsat 10-02, 1° West, 11.406GHz-V (24500+⅞) – it was signed as '3ABN' = '3 Angels Broadcasting OB' and 'On the Road Soon'! [NB OB = outside broadcast).

The BBC uses Atlantic Bird-1 (AB-1) @ 12½° West extensively for its regional/national TV feeds – always between 12.050-12.150GHz-V (4226+⅞). February 10th and an easy one to remember – 'UKI-534 BBC SCOTLAND DSNG' using 11.111GHz-V and we're up in Fife at 8PM local.

A rare sighting of a new 'Associated Press' company caption (W1)

The newly successful Lib-Dem candidate lives next to George Brown's constituency and the BBC Scotland reporter is 'arranging' a 'vox-pops' interview albeit with several retakes on the doorstep of our new MP. End of interview and an interesting 16:9 test card 'BBC LONDON TV CENTRE, CAR'. [NB CAR = Central Apparatus Room ie Master Control]

Normally BBC feeds over AB-1 use an SR 4226 + FEC ⅞ but early February a regional feed used an entirely new SR 6138 during a BBC Sports OB with a hard fought Welsh football match between Carmarthen Town v. Swansea City – 11.063GHz-V (6138+⅞).

When 'UKI-560' transmitted a 'live' from Sothebys Auction Rooms, London over W2 on the 7th February I was amazed to see Sotheby umbrellas for sale in a floor stand at the bargain price of £45 each.

Mobile TV

Mobile TV is already on the go albeit on a test basis is selected areas of the UK. There are 2 main operators involved at this time - Virgin Mobile/BT using DAB frequencies and mobile operator O2/Arqiva involved with 3G.

The former operators have been using 'BT Movio' digital radio and TV programming which commercially launches later this year, which offers programming onto mobile phone equipment on which channels are selected via the system EPG.

From a test bed of a 1000 test users of this service within the M25 area, some 75% were sufficiently enthusiastic to use TV content for + 1 hrs and digital radio for +1½hrs a week.

News, sport and entertainment were cited as the most desired content. The DAB delivered network is now capable of running commercially with live TV to the mobile receiver.

Interesting to note that Microsoft have come on-board with Virgin anxious to push their Microsoft Mobile software expertise into the ever expanding mobile world – Windows Mobile is now available on over 100 mobile models across 55 countries - and Mobile TV offers great potential for even more penetration.

The 02/Arqiva 3G test service has operated across the Oxford area using DVB-H though this cannot be used until analogue TV is cleared from the UHF spectrum. depending on area this will be from 2007-2012 - and its the highly populated (and commercially rich) regions that will switch off UHF later.

Tests offered 16 TV channel access over 24 hours with their 375 test users accessing the service ('Personal TV') up to 3 hours weekly mainly morning, early evening and commuting times + a lunchtime peak.

The test period ran from late September 05 to Spring 06 offering 16 national TV channels such as BBBC-1, 2, News 24, ITV1,2 ch.4,5 CNN, Discovery, Sky News, Sports etc.

Generally DAB seems a favoured runner since it can and is operating currently at lower frequencies providing easier reception than UHF and requires less transmit power from fewer transmitters than the DVB-H 02 system.

At the recent '3GSM' conference in Barcelona Virgin Mobile have linked with Microsoft/NTL to launch their +5 channel mobile TV service (BT Movio) across the UK mid 2006 using the present DAB allocations.

Alcatel however suggest that S Band transmission would allow both satellite and terrestrial carriage - being an allocated telecommunication band - offering wide bandwidths and cross boundary roaming capability.

T-Mobile have selected Alcatel to provide the system for their mobile TV service in Europe whilst the Sony-Ericsson group are working with Nokia for their own mobile TV solution - based around TVB-H.

Spring 2007 should see the Spanish 'MNO ABERTIS' 3G mobile TV network go on-stream across the country also based on TVB-H. Abertis has linked with Telefonica and Nokia to push into mobile TV operation.

Solution to Test Case 520

The worst kind of fault in consumer electronic equipment is that which destroys newly replaced components at switch-on after repair. Those who serviced audio power amplifiers in the days before 'big chips' will have experienced this: some TV chassis, too, had similarly nasty habits. The Philips L01.1E type dealt with here is not normally prone to this sort of thing; indeed it is generally quite engineer-friendly, as the Television servicing guide (March 2004 issue) showed.

The problem here was not in the flyback transformer or anything associated with it: the line output transistor was not getting a proper drive waveform. The line driver circuit here is somewhat unusual, with two transistors in a push-pull switch configuration.

The centre-point is coupled to the line drive transformer 5461 by electrolytic capacitor 2455, a 47µF 25V type, which was found to have a high ESR. The resulting waveform must have had a lot of slope to cause the line deflection transistor such distress - it is essential to the health and cool running of a transistor playing this role that it switches on and off very rapidly and cleanly.

Replacement of the capacitor restored normal operation to this TV, and in fact since then we have had this capacitor fail in another set using the same chassis. So now we replace it with a high-quality 105° type in all L01.1 chassis which come through the workshop.

We welcome reader's fault reports.

Send your reports to: TVeditor@nexusmedia.com

Preference will be given to reports emailed as Word.doc attachments, and reports submitted on CD. Send to: Television Magazine, Fault Reports, Nexus Media Communications, Azalea Drive, Swanley, Kent BR8 8HU

Please do not send handwritten reports.

Payment will be made after publication

Too much, the magic bus!

If you want to carry your TV crew in style, you could do a lot worse than choosing the new Renault Trafic nine-seat minibus, Boris Sedacca took one out on a road test.

Renault triumphed at the 2005 Fleet World Honours picking up three of the prestigious awards.

The Renault Trafic scored a hat trick, scooping the Best Medium Van category for the third consecutive year.

Commercial Fleet World Editor John Kendall said: "Alongside rivals such as the Ford Transit, VW Transporter, Mercedes-Benz Vito and Citroen Dispatch/Fiat Scudo/Peugeot Expert, the new van looked modern and distinctive as well as different.

"A nine-seater SWB minibus model also joins the range as well as a semi-automatic gearbox option. Most UK models are built at the IBC plant in Luton, which is currently working flat out to satisfy demand for the model, with three-shift working around the clock.

"A range of four engines, including common rail 1.9-litre and 2.5-litre diesels from Renault, with six-speed gearboxes on many models, make the van a quiet, economical long distance vehicle, helped by a very car like driving experience.

"Despite the tough competition, this is still the medium van to beat," added John Kendall.

Renault's new Trafic nine-seat went on sale in the UK in May last year.

Available in short wheelbase guise, with its three rows of seating, considerable boot space and numerous stowage cubbies, the newcomer provides flexible accommodation for its passengers as well as good refinement and interior comfort.

Wrap-around bumpers

The vehicle features light grey wrap-around front and rear bumpers, two sliding doors with opening windows and 180° opening rear doors, and 60W radio/CD.

As befits a Renault van product, the Trafic nine-seat also boasts numerous safety features such as ABS with EBD and ASR traction control, plus ESP and driver's airbag.

The model supplied for road test had a 1.9 litre engine, which is fine as long as you're not carrying nine adults - otherwise, it is advisable to go for a bigger engine.

However, the1.9 dCi engine returns 37mpg on a combined cycle and Renault engines only require servicing every 18,000 miles.

The new Trafic nine-seat is one of the most comfortable vehicles in the market, with boot space of $1m^2$ and the added convenience of a tailgate with twin sliding side doors and opening windows. The vehicle's third row of seats fold, increasing boot space to $2.5m^2$.

Safety credentials

The Trafic nine-seat has impressive safety credentials with the seats and seatbelt anchorage points tested up to a 20G deceleration rate.

All seats are fitted with headrests and three-point seatbelts, with load-limiters and pre-tensioners on the rear seats.

Options are available, including: air conditioning with heat reflective windscreen (£650), electric windows and door mirrors (£275) and metallic paint (£325). All option prices listed exclude VAT.

Two short wheelbase, low roof versions available, SL27dCi 100 and SL29dCi 100, costing £15,963 and £16,440 (excluding VAT and on-the-road fees).

www.renault.co.uk

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Capstan motor and tape guide slant poles for Hinari VCR model no. VXL4. Capstan motor for DAEWOO VCR model no. V436. Cassette mechanism for Sharp TV/radio/cassette recorder model no. 10P 18H.
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I have VCR components, all new, dozens of heads, kits, gears, etc. I used to repair VCRs for friends and their friends in the early 80's and many spare parts have just accumulated. Offers please to
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WANTED
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Phone 01229 774749 (Doug)
dougcarson@tiscali.co.uk

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Wanted a power supply scan PCB for a Philips 28CL6770/05Z with FL1.0 chassis or does anybody know why the standby power supply blows up intermittently. **Chris Hart**
chartelectron@aol.com

FOR DISPOSAL
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All costs reimbursed.

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Can anyone help? I have a Amstrad computer PC 3086 and have tried to get an IC DS 1287 Real Time 9031B3-005662 Philippines 520AA, but because of the age I have had no luck. I hope you can help?
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Tony: 0208 954 0716

What a life!

Donald Bullock's servicing commentary

Irrevocably bonded Peter Tankard • A thousand crazy Marx Brothers • UHF transmissions bounced up • A sallow complexion and an oily rag •

I wonder how many readers have noticed, in these pages, the ongoing plea from Peter Tankard, of Sheffield, for ferrite aerial rods?

It has been appearing now, in this and other publications, for years, and amongst those who have asked me all about it is an old correspondent of this column, Chris Drewe.

"Why ever does he need these things?" asks Chris. "What's he doing with them?"

Well, I couldn't imagine, and I figured that the best way to find out would be to ask Peter Tankard himself, so I did, and the first thing I discovered was that Peter never set out to buy these rods in quantity, he merely wanted, and still wants, two, to enable him to repair two ancient radios to which he has grown attached.

And when I say attached, I mean absolutely and irrevocably bonded, to the tune of parting with good money in the hope of getting the right ones. And he hasn't struck lucky yet!

But he has, by my reckoning, shelled out at least £150 up to now, for rods that seemed promising when described by their owners, but which proved to be of the wrong size.

Grundig Yacht-boys

The radios concerned are both Grundig Yacht-boys, and both, he says, are virtually mint and of a quality that isn't seen today.

The first, a model 210, was made in 1960, and the other, a model 202E is even older, going back to 1958.

Both have broken rods, and I asked Peter, who is forty-four, whether he had tried the old trick of cementing the bits together, something we always used to do, using Araldite and splints.

He had, but it seems that they are both so badly and extensively fractured that he has been unsuccessful.

The original rods were half an inch in diameter and eleven and a half inches long, and Peter has, over the years, had scores of rods offered, and bought well over a dozen, all from separate sources, only to find, when each arrived that it was not of the correct size.

I asked him what sort of money he has parted with for those that he's received, and he says that he's happily paid at least £10 a time, only to find that some are too short, and that others are not the required half an inch in diameter.

"It seems people are a bit hazy about the length and diameter of the rods they have offered," said the affable Peter. "Most have been three-eighths, and in one case, it was even less!"

Essential Question

There was one question I had to have an answer to. "What is the most you've ever paid?" I asked him.

"Thirty pounds for one sent from Lithuania," he said. "And of course, it turned out to be the wrong size, like the rest."

"I'm staggered," I said. "Wouldn't it be better to throw these radios away and get hold of two more that would be easier to find the spares for?"

"No," said Peter. "In the first place, the Grundigs I have are absolutely mint and in pristine condition, and in the second place, both their manufactured quality and their sound quality are exceptional."

I began to have a sneaking feeling that there was more to it than that. "Is there another factor in the equation?" I ventured.

Peter laughed. "Well, to be frank, I have an inner compulsion to get them perfect. The same compulsion that spurs on so many renovation enthusiasts," he admitted.

So, if any kind soul has a rod aerial that is precisely half an inch in diameter, and eleven and a half inches long, do telephone Peter on 0114 231 6321 between 9 am and 10 pm.

One final point: Peter is no longer too keen on forking out his tenners for rods of the wrong size. Half an inch diameter they MUST be, he insists.

My Schoolmate Charles

The other day I ran into Charles, an old schoolmate of mine, who was brighter than me at school.

I decided to rise in life from making crystal sets, to courting the social status of being a television and electronics engineer.

Believe it or not, when I began in this trade, a television engineer was just about the most prestigious thing to be, and it didn't hurt your pocket any, either.

So I got myself accepted as general lackey and tea-boy in a busy radio and television workshop and spent my salad days in the trade.

On the occasional heaven-sent day I was allowed to accompany a proper engineer on his service calls to the Forest of Dean, and boy, did it improve my education!

Not only did the customers put themselves about to receive us, they practically licked our boots, and many were actually waiting outside on the pavements, for fear of missing us.

He (and me, by extension) were greeted as though we were wonderful, if not royalty.

Dogs were kicked out into the back yards, out came the best china, every face came bathed in a warm smile, and we were given tea and cakes and offered snacks and even meals.

We always got tips, and were often given vegetables or flowers from their gardens.

And how brilliant the proper engineers seemed to me. They could dive their hands into their pockets, produce a PL81 valve, and restore a brilliant picture to a blank screen in no time, or produce an ECL80 valve, and spring a collapsed frame into a full picture.

A new PCC84 RF amplifier valve,

popped into the tuner, always restored ITV, and a PCL83 recovered lost or distorted sound.

Wonderful!

"What a wonderful engineer!" the lady of the house would say as she tipped out her purse and sent her dull and ordinary husband to the garden to raid his crops for us.

"Oh, I do wish my Cyril could have been a Somebody." Then, more than likely, when he staggered back, loaded with produce: "Get the gentlemen more than that, you blockhead!"

How I aspired to become an engineer. Sometimes, when the real engineer ran out of a particular valve, I elected to return to the house on my bike to enjoy the prestige of plugging it in.

Further, I used to beg to be allowed to take service manuals home to study them, to work out how the circuits worked, how a valve's anode dragged electrons from the cathode, how the signal grid modulated the flow, how the screen grid prevented electron splash-back, how cathode ray tubes worked, and why they sometimes did not.

I saw the electrons as herds of happy cartoon midgets, like energetic bubbles that had passed their fizz-icles, flowing up from the metal chassis, and leaping from the cathodes in their hordes, some squeezing successfully through the grids and flying to the anodes, others stumbling and trying again.

I conjured them into similar antics in condensers, (nobody knew capacitors, then) all being pushed and squeezed together into their tiny waxy cases, like a thousand crazy Marx Brothers pressing into a single lift.

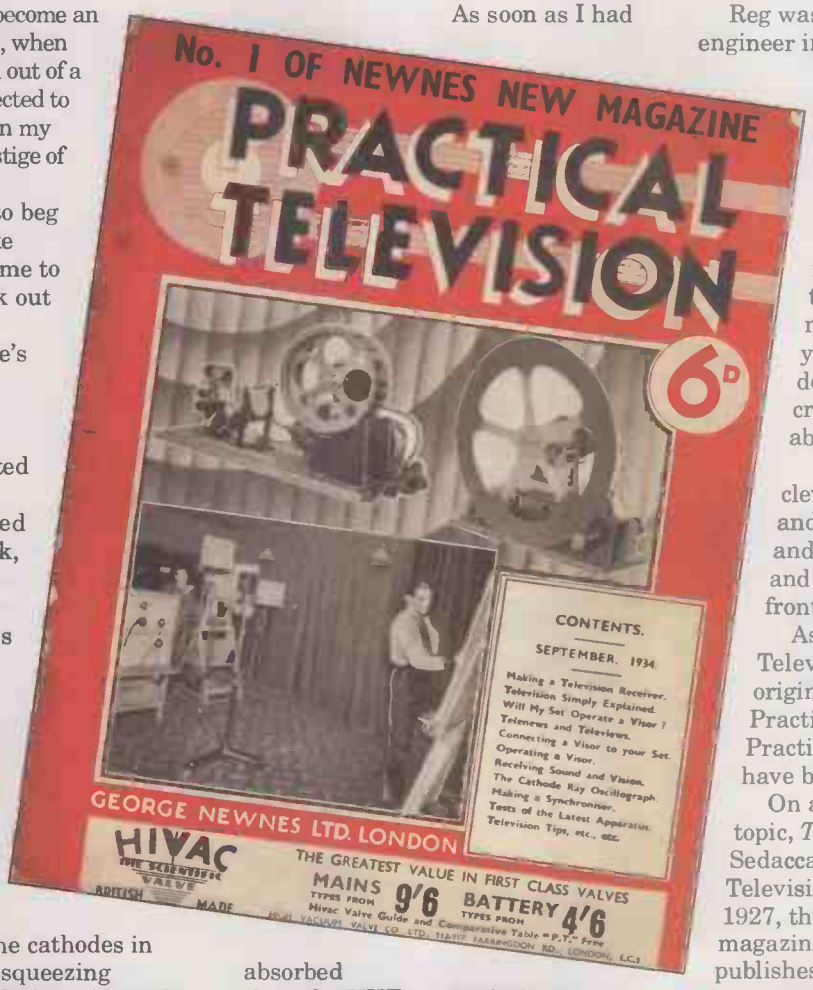
When I came to work out how resistors worked I arranged a game of cartoon character tag in a tunnel, each electron gamely pressing though in spite of being hampered and slowed down by the look-alike dummies put there to impede them.

And the higher the value, the greater the number of dummies I invoked, to slow them down. I'm sure you all understand why, don't you? My crystal diodes were pairs of saloon bar doors, which opened one way, but not the other – the electrons were on a one-way trip.

But as fast as I sussed the circuits out, technology galloped on. Long playing records came, and machines to play them on.

Audio tape recorders galloped in. Printed circuits, transistors, thyristors, and integrated circuits made their bow. ITV came, using frequencies and wavelengths I scarcely knew existed.

As soon as I had absorbed that, the UHF transmissions bounced up, with tuners where the signals came coupled by jumping through pinholes.



Video recorders frightened me for a while, but I settled to them, too, and to all the other items that came flung to us.

Then I began to realise that the cleverer we were becoming, as a group, the less the public respected us. We had become too clever, and, by that token, in their eyes, too powerful.

But what about my old mate Charles? Once he'd got into medicine, it didn't take him long to find that throughout his working life he would have to deal with only one model, plus a slightly modified Mark 2, and that once he'd swatted up on those, his basic learning was done.

They didn't go out of date, and they all thought forever that he was wonderful. Furthermore, his dignity, status and pay handsomely reflected it.

Back to the Start

I had an Email from Reg Killingly, of Leicester. Reg's father bought the first issue of FJ (Fred) Camm's Television magazine in September 1934, and duly passed it on to Reg, who has now retired at 65, although he still works part-time.

Reg was a Chartered Mechanical engineer in the Nuclear Power Industry, and it isn't his fault that our electricity didn't end up so cheap – as we were told it would – that it wouldn't be worth billing to us.

He has taken a lively interest in electronics, has taken and read the magazine for over forty years, and (before I delivered that last cruel crack) wrote kind things about me and 'What a Life'.

Fred Camm was a very clever man who personally and simultaneously produced and edited several magazines, and his name appeared on the front cover of every issue.

As well as Practical Television (this magazine's original title) I remember Practical wireless, and I think, Practical Mechanics. There may have been another.

On a separate but similar topic, *Television* editor Boris Sedacca reminds me of the Royal Television Society. Formed in 1927, the Society produced its first magazine in 1928, and still publishes it today at the rate of ten issues a year.

Available only to members on a private prescription basis, it too is called Television, though, of course, it has never had any connection with FJ Camm or, inter alia, with this magazine.

As we go to press, I hear that car engineers who work for franchised dealers are now better paid, per hour, than barristers! And to think I've been seeking an absurd second-hand wig and an old waistcoat in which to hook my thumbs.

Will somebody please pass me a sallow complexion and an oily rag?

donald@wheatleypress.com

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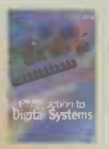

John Crisp

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4th edition ▲ Mar 2002 ▲ 394 pages
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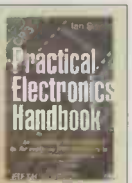

Ian Sinclair

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Radio Society of Great Britain

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Nov 2000 ▲ 336 pages ▲ PB ▲ Illustrations
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REFERENCE DATA FOR ENGINEERS: RADIO, ELECTRONICS, COMPUTERS AND COMMUNICATIONS

Mac E Van Valkenburg; Edited by Wendy Middleton

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9th edition ▲ Aug 2001
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Lewis & Sinclair

This title aims to provide the service engineer with all the necessary information to carry out work on domestic electronics equipment. The coverage ranges from satellite reception to NICAM. Both analogue and digital equipment are covered, and there are chapters on common problems.

Jan 1998 ▲ 238 pages ▲ HB
Code BUTO-7506-3448-0 **£14.99**

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Eugene Trundle

A practical hands-on guide for service engineers, installation technicians and servicing students, this text emphasises the practical business of fault diagnosis and repair of TV, satellite and video equipment.

Revised 2nd edition ▲ Nov 2001 ▲ 336 pages
Symptom index ▲ PB ▲ Published in UK
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2nd edition ▲ Jan 2000 ▲ 245 pages
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Code 0-7506-4581-4 **£18.99**

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Mar 2000 ▲ 447 pages ▲ Illustrations ▲ PB
Published in UK
Code 0-7506-4634-9 **£20.99**

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J Edwards

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A comprehensive guide to domestic VCR technology and repair techniques. This edition brings the information fully-up-to-date, with expanded coverage of camcorders, sections on DVD equipment and the latest VCR technology.

5th edition ▲ Apr 2001 ▲ 323 pages
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This edition has been updated to include information on digital television, datacasting, interactive video, digital camcorders and VCRs, and video interfacing. Coverage is international, including European, Asian and North/South American video standards, methods and techniques.

3rd edition ▲ Jul 2001 ▲ 784 pages & CD-Rom
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Ian Poole

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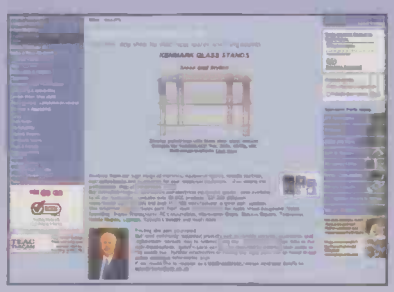

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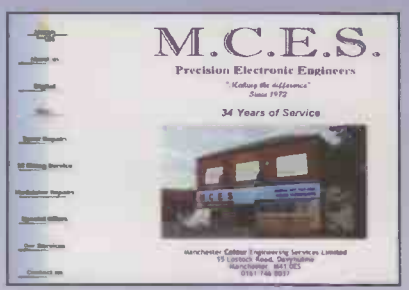

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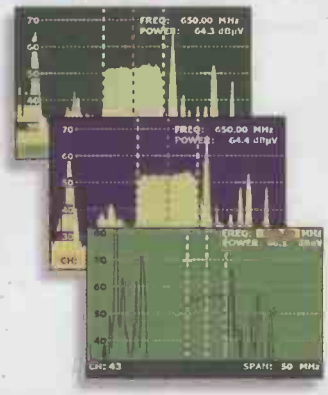

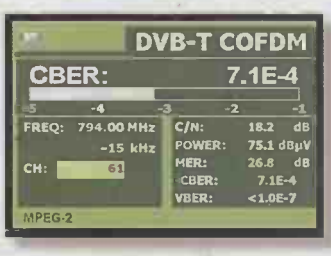

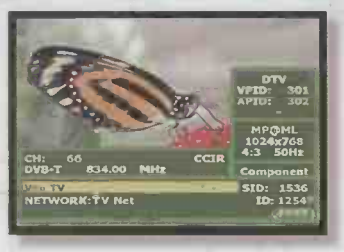

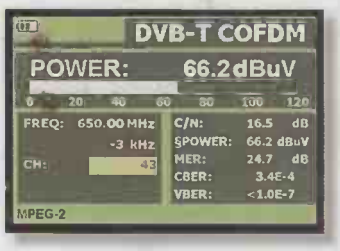

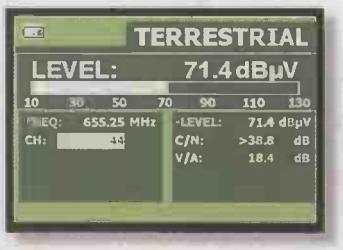

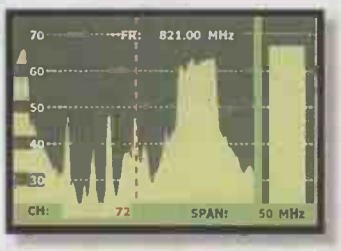

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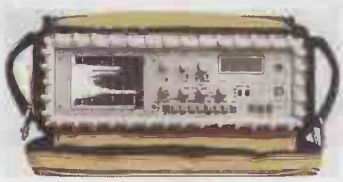

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