HARRIS

DX Series.
10-50 kW Digital Solid-State AM Transmitters

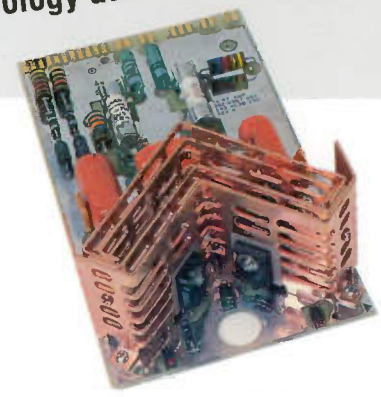
DX-10/25U/50

Proven digital technology delivers top reliability, performance and efficiency

HARRIS DX TECHNOLOGY...The world's first and only digital solid-state AM transmitters

MAKE THE OUTSTANDING BENEFITS OF DIGITAL AM YOURS:

1. Field-proven Harris technology provides top reliability and FM-like sound.
2. Typical overall efficiency of 86 percent throughout the DX Series reduces electricity costs dramatically.
3. Engineered for easy monitoring and maintenance.
4. Every DX transmitter includes an output matching network that allows the transmitter to be tuned for maximum efficiency into varying antenna conditions.
5. Meets IEC 215 regulations for worldwide applications.
6. Available in 10, 25 and 50 kilowatt models. Even higher powers coming.
7. Revolutionary patented digital technology available only from Harris.



Featuring Harris' patented digital technology, Harris solid-state DX transmitters set new standards for efficiency, performance and reliability. Today's DX Series of digital solid-state transmitters offers models in 10, 25 and 50 kilowatt power levels. All DX transmitters meet IEC 215 requirements, making the DX Series world-class transmitters for world-wide operation.

Achieve the highest on-air reliability

Users worldwide will attest that Harris DX transmitters, with a high-redundancy design and conservatively-rated components, offer exceptional on-air reliability. At each power level solid-state power amplifier modules are identical and interchangeable, and DX transmitters are designed for continued operation even if a module should fail. Harris' exclusive Flex-Patch™ enables you to restore performance while continuing on-air operation.

Other standard features include lightning protection; power line fluctuation safeguards for tolerance during brown-out conditions; and VSWR foldback protection.

Improve your station's performance

With superior square wave response and 140% peak modulation, Harris DX transmitters provide unmatched signal quality. Even non-technical listeners with ordinary receivers will notice the difference, because this technology delivers FM-like sound. You'll also discover that reception in fringe areas greatly improves, and when you're ready, DX transmitters are stereo-ready with the simple addition of an AM stereo exciter.

The most user-friendly transmitters you'll find

From installation through years of dependable operation, you'll find that DX transmitters are designed for easy use. Equipped with a matching network which facilitates operation, complete external interface for extended or remote control, and easy access to solid-state modules, DX transmitters are truly user-friendly.

Harris' exclusive at-a-glance ColorStat™, a front panel signal flow diagram, makes it easy for virtually any operator to monitor the condition of the DX-Transmitters.

Designed for at-a-glance monitoring by virtually any operator, DX transmitters feature Harris' exclusive front-panel ColorStat™, a simple signal flow diagram. The ColorStat diagram uses 28 separate LED indicator lights to monitor all key operating stages.

Cut your power bills without compromise

With extraordinary AC to RF efficiency of 86 percent, DX transmitters yield dramatic cost savings that go straight to the bottom line. Compare DX Series AM transmitters with tube or solid-state transmitters at the same power levels with typical efficiencies of 50 to 73 percent, and you will find that a Harris DX transmitter will lower your transmitter power bill by as much as one-third.

These cool-running transmitters also will reduce your air handling requirements for additional savings, and the 100 percent solid-state design will eliminate recurring tube replacement costs forever.

Make your own comparisons

With introduction of the DX-10, the world's first digitally modulated solid-state transmitter in 1987, Harris changed the standard for AM transmitter technology. Pioneered by Harris, the digital modulation system was described by **Broadcast Engineering** magazine as the first truly new concept in AM broadcasting since 1972 when Harris introduced pulse duration modulation. Today Harris DX transmitters are on-the-air worldwide.

The DX-25U and the DX-50 extend the benefits of digital modulation to higher power levels. Before you purchase any 10, 25 or 50 kilowatt AM transmitter, you owe it to yourself to compare the benefits which will be yours with a Harris DX model.

See how much a Harris DX Transmitter will reduce your power costs

Annual Operating Cost = P/E × H × C

KEY:

H = Operating hours per year
P = Average power output with program modulation (kW):
  P = 65 kW for 50 kW transmitter
  P = 32.5 kW for 25 kilowatt transmitter
  P = 13 kW for 10 kilowatt transmitter
C = Cost per kilowatt hour
E = Efficiency of present transmitter (%)

EXAMPLE:

Annual savings by replacing a 55% efficient 50 kilowatt transmitter with an 86% efficient DX-50 transmitter:

H = 24 hour per day station; 50 kilowatts day/night (8760 operating hours per year)
P = 65 kW
C = U.S. $.10 per kW hour
E = 55 percent

65/.55 × 8760 × $.10 = $103,527.00 at 55% efficiency
–65/.86 × 8760 × $.10 = **$66,209.00** at 86% efficiency
Annual cost savings = $ 37,318.00

CALCULATE YOUR SAVINGS:

H = Hours per day × 365 = _____
P = 65 at 50 kW; 32.5 at 25 kW; 13 at 10 kW
C = Your cost per kilowatt hour = _____
E = Efficiency of your current transmitter = _____

P/E × H × C = Annual power cost of current transmitter
–P/.86 × H × C = Annual power cost of 86% efficient transmitter
_____ = Annual cost savings with DX transmitter

DX benefits over broad power ranges

MODEL	POWER RANGE
DX-10	1 to 11 kW
DX-25U*	10 to 27 kW
DX-50	10 to 60 kW

To discuss even higher power DX requirements, please contact Harris.

*The Harris DX-25U is upgradable to a DX-50.

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CP-5M-389

ADV745 PTD. IN U.S.A.

HARRIS

THE-1 55 or 15 watt Solid-State FM Exciter

THE-1 FM Exciter

The one for high power, high performance

HARRIS THE-1...A Fifth Generation Solid-State FM Exciter

MAKE THE OUTSTANDING BENEFITS OF THE-1 YOURS:

1. 55 or 15 watt maximum output power, selectable
2. Monaural, composite and SCA subcarrier inputs standard
3. Outstanding signal performance
4. Low profile, slide-out drawer construction
5. FCC type notified for direct replacement of older generations of FM exciters
6. Low-power FM transmitter for emergency use

THE-1 Harris' fifth generation solid-state exciter, is built on long experience and designed to provide top performance in any FM transmitter. Rated at 55 watts or 15 watts RF output for today's applications, THE-1 also offers flexibility for easy retrofit in older FM transmitters.

Super-clean signals

THE-1 provides a high power, high performance signal source. Existing transmitters can benefit from the improved reliability and super-clean signals when used as a direct replacement for their present exciters. And for low power or standby transmitter service, THE-1 will provide more watts to your antenna for better local coverage.

Superb linearity

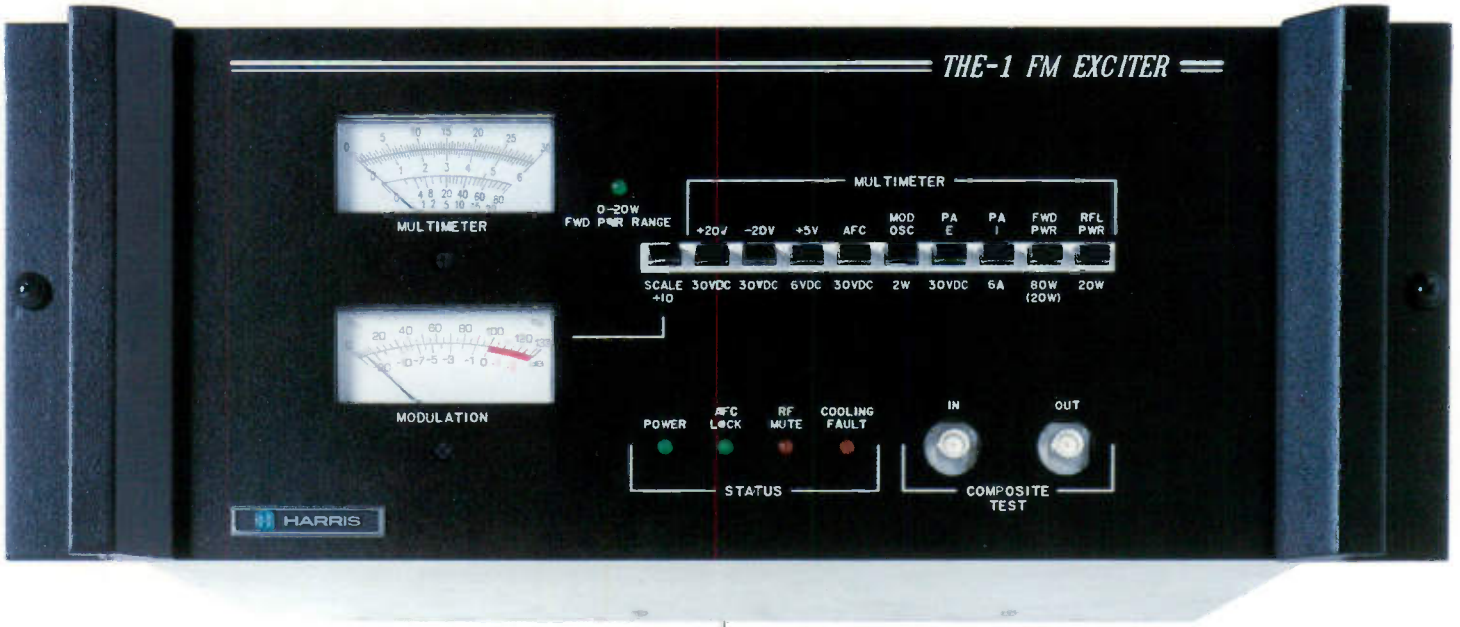
Signal performance of an FM transmitter is a direct function of the performance of the modulator section of the exciter. The Harris THE-1 uses an ultra-linear voltage controlled oscillator (VCO) operating at final carrier frequency. This VCO has superb linearity for virtually transparent passage of stereo and multiple subcarriers, without adding coloration or a distinctively different sound of its own.

The VCO also features exceptional immunity to microphonics and externally induced hum. Composite signal-to-noise measurements of **-85dB** are typical, and the exciter will meet or exceed its specifications even when mounted in the transmitter cabinet.

High-stability digital synthesis

The Harris THE-1 uses a 10MHz, high-stability, temperature-compensated crystal oscillator (TCXO) as a frequency source.

A programmable, digital synthesizer uses the TCXO as a reference to control the center frequency of the VCO. A dual speed AFC loop locks up quickly, then slows to provide fine control of center frequency with excellent audio performance.



Multiple inputs, standard

One unbalanced and one floating balanced composite input, two unbalanced SCA inputs, and one balanced 600 ohm transformerless monaural input are all provided on the rear panel. All inputs are continuously active. A buffered, unbalanced composite test input and output are also provided on the front panel.

Ultra-reliable broadband output amplifier

The THE-1 features a modular, broadband output amplifier requiring no tuning. Ultra-reliable RF devices, operating in an advanced, integrated package, provide extremely conservative operation and extended life. The module is fully protected for any load VSWR and excessive operating temperature.

Easy to install, adjust and monitor.

With its slim profile, minimal depth requirement and slide-out rack mounting, the THE-1 is ultra-easy to install. High-reliability wiring strips eliminate the need for crimp or solder terminals when connecting to the rear panel control/monitoring interfaces. The exciter remains fully operational on the extended position of the mounting rails for easy access to internal components.

A peak-reading modulation meter constantly monitors the total composite baseband signal applied to the VCO. A momentary switch increases meter sensitivity for easier adjustment of pilot and SCA injection. Metering and controls are remoteable.

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P.O. Box 4290, Quincy, Illinois 62305-4290 U.S.A.
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ADV 726 PTD. IN U.S.A.

HARRIS

3.5, 5, 10 kW HT Family FM Transmitters

HT 3.5/5/10FM

Superior performance and proven reliability

HARRIS HT FM Family...High Efficiency Single Tube Design

MAKE THE BENEFITS OF THE HT 3.5/5/10FM FAMILY YOURS:

1. High-power 55-watt THE-1 FM exciter delivers super-clean signals and outstanding reliability.
2. Single, high efficiency tube in a wideband, quarter-wave cavity enhances performance.
3. RF patch-around capability keeps you on the air.
4. Automatic AC restart returns transmitter to air after power outage.
5. Automatic VSWR foldback keeps you safely on the air during antenna icing.
6. Front-panel block diagram monitoring simplifies maintenance.
7. Automatic power control minimizes operator adjustment.
8. Full remote control interface is standard.

THE-1™ FM Exciter

The HT 3.5/5/10FM Family from Harris offers a unique combination of features and the latest field-proven technology to give you unequalled reliability, performance and value.

Four transmitters are represented in the HT 3.5/5/10 Family. In addition to standard single-phase 3.5 and 5 kW models and the standard three-phase 10 kW transmitter, the HT 10FM also is available for single-phase installation.

At the heart of all HT FM transmitters is the Harris 55-watt THE-1 Exciter. With two selectable RF power outputs, low-profile slide-out design, an ultra-linear voltage controlled oscillator and full stand-alone capability, THE-1 provides super-clean signals with minimum maintenance.

To ensure top performance, HT 3.5/5/10FM transmitters feature a standard quarter-wave cavity design which maximizes signal performance. Additionally, these transmitters provide for top on-air reliability with incremental or ramp-up soft start; automatic power control; automatic VSWR; AC restart and RF patch-around capability to remain on the air with 55 watts of power should a stage fail.

For simple use, HT 3.5/5/10FM transmitters offer straightforward controls, comprehensive front-panel status information and are designed for remote control interface.

Designed for flexible, efficient operation

High Power THE-1 Exciter uses an ultra-linear VCO for virtually transparent signal performance. Operates as a low power emergency transmitter.

Highly Efficient Power Amplifier yields significant power cost savings over the life cycle of the transmitter. Rugged single tube operates in a wideband quarter-wave cavity.

RF Patch-Around Capability permits the IPA or final PA to be bypassed for continued operation at reduced power in emergency conditions.

Transmitter Control And Status At A Glance shows all major transmitter operating parameters in an easy-to-read format.

Automatic Power Control automatically maintains output power during AC line voltage swings that would otherwise create over or under power conditions.

Automatic VSWR Foldback permits continued on-air operation at the safest power level during heavy antenna icing.

Automatic AC Restart provides built-in protection against total AC failure and loss of phase.

Internal Power Supplies permit entire transmitter to be housed in a single cabinet, saving floor space.

Remote Control Interface allows HT transmitters to interface easily and directly with most remote control systems.

Model	Power Range	Power Consumption
HT 3.5FM	800 W — 4 kW	7 kW at 3.5 kW output
HT 5FM	1500 W — 5 kW	10 kW at 5 kW output
HT 10FM	5 kW — 10 kW	15.7 kW at 10 kW output

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Harris Corporation, Broadcast Division
P.O. Box 4290, Quincy, Illinois 62301-4290 U.S.A.
217/222-8200

ADV 736 PTD. IN U.S.A.

HARRIS 20 and 25 kW HT Family FM Transmitters

HT 20/25FM

Superior performance and proven reliability

HARRIS HT FM Family . . . High Efficiency Single Tube Design

MAKE THE BENEFITS OF THE HT 20/25FM FAMILY YOURS:

1. High-power 55-watt THE-1 FM exciter delivers super-clean signals and outstanding reliability.
2. Single, high efficiency tube in a wideband, quarter-wave cavity enhances performance.
3. Harris exclusive FLEX*Patch*™ keeps you on the air.
4. Automatic AC restart returns transmitter to air after power outage.
5. Automatic VSWR foldback keeps you safely on the air during antenna icing.
6. Automatic power control minimizes operator adjustment.
7. Extremely quiet operation.
8. Full remote control interface is standard.

THE-1™ FM Exciter

With the HT 20FM 20 kW transmitter and the HT 25FM 25 kW transmitter, Harris offers a unique combination of features and the latest field-proven technology to give you unequalled reliability, performance and value.

At the heart of the HT 20/25FM transmitters is the Harris 55-watt THE-1 Exciter. With two selectable RF power outputs, a low-profile slide-out design, an ultra-linear voltage controlled oscillator and full stand-alone capability, THE-1 provides super-clean signals with minimum maintenance.

To ensure top performance, HT 20/25FM transmitters feature a standard quarter-wave cavity design which maximizes signal performance.

All Harris HT transmitters provide for top on-air reliability with incremental or ramp-up soft start to eliminate turn-on transient overloads; automatic power control; AC restart; internal RF FLEX*Patch* capability for emergency operation, and automatic VSWR foldback to keep you on the air during antenna icing conditions.

For simple use, the HT 20/25FM transmitters offer straightforward controls, comprehensive front panel status information and are designed for easy remote control interface. Modular components and internal accessibility also contribute to ease of maintenance.

The HT 20FM and HT 25FM transmitters feature a standard external power supply for lower internal cabinet operating temperatures and greater reliability. And the efficient low-noise cooling system provides incredibly quiet operation.

Both transmitters also are available in dual configurations for 40 kW or 50 kW operations.

Superior performance and proven reliability

High Power THE-1 Exciter uses an ultra-linear VCO for virtually transparent signal performance. Operates as a low power emergency transmitter.

Highly Efficient Power Amplifier yields significant power cost savings over the life cycle of the transmitter. Rugged single tube operates in a wideband quarter-wave cavity.

Emergency RF FLEX*Patch* Capability permits the preamplifier, IPA or final PA to be bypassed for continued operation at reduced power in emergency conditions.

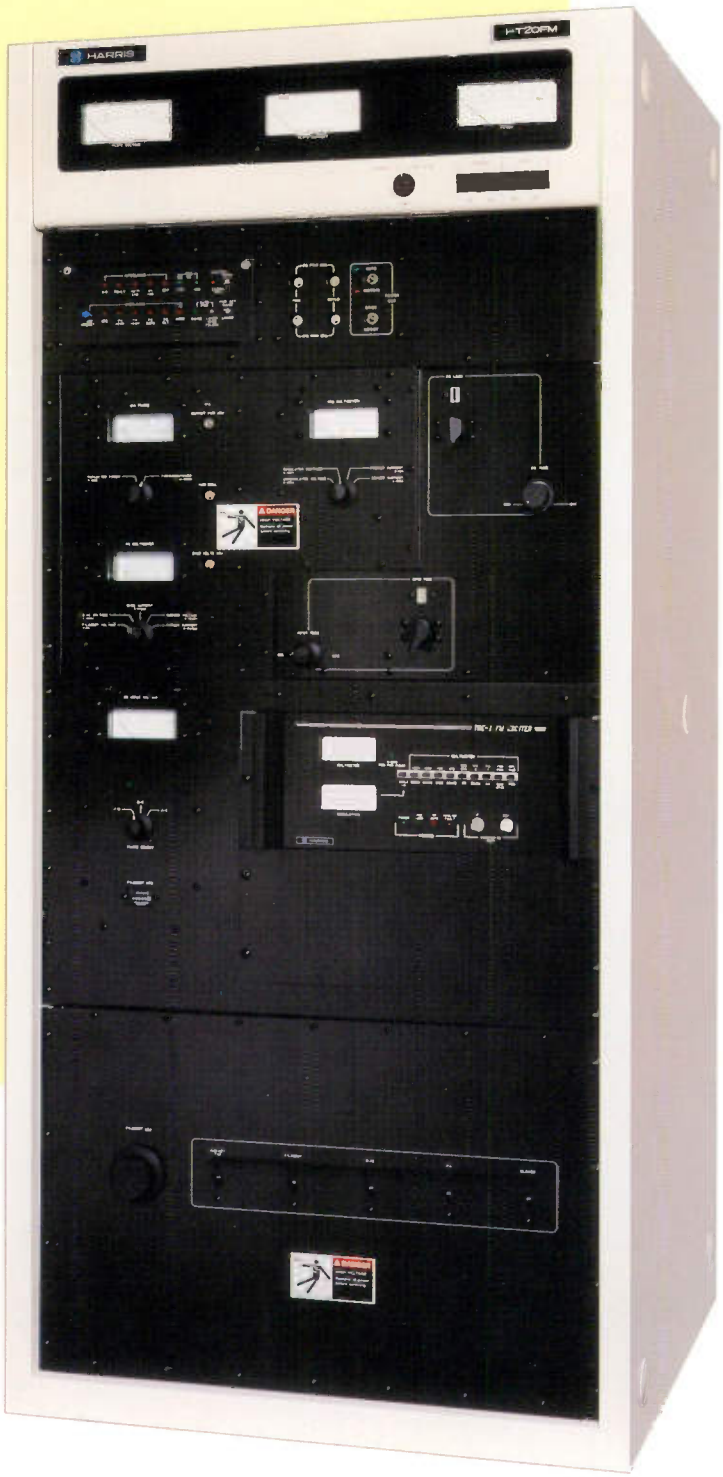
Transmitter Control and Status At A Glance shows all major transmitter operating parameters in an easy-to-read format.

Automatic Power Control automatically maintains output power.

Automatic VSWR Foldback permits continued on-air operation at the safest power level during heavy antenna icing.

Automatic AC Restart provides built-in protection against total AC failure and loss of phase.

Remote Control Interface allows HT transmitters to interface easily and directly with remote control systems.



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ADV 737 PTD. IN U.S.A.

HARRIS

30 and 35 kW HT Family FM Transmitters

HT 30/35 FM

Superior performance and proven reliability

HARRIS HT FM Family...High Efficiency Single Tube Design

MAKE THE BENEFITS OF THE HT 30/35FM FAMILY YOURS:

1. High-power 55-watt THE-1 FM exciter delivers super-clean signals and outstanding reliability.
2. Single, high efficiency tube in a wideband, quarter-wave cavity enhances performance.
3. Harris exclusive FLEX*Patch*™ keeps you on the air.
4. Automatic AC restart returns transmitter to air after power outage.
5. Automatic VSWR foldback keeps you safely on the air during antenna icing.
6. Front-panel COLOR*Stat*™ monitoring simplifies maintenance.
7. Automatic power control minimizes operator adjustment.
8. High efficiency low-noise cooling.
9. Remote and/or extended control interfaces for easy system control.
10. STATUS*Plus*™ memory logs date and time of overloads to help isolate problems.
11. Typical PA efficiency of 80 percent assures operating cost savings.

With the HT 30FM 30 kW transmitter and the HT 35FM 35 kW transmitter, Harris offers the latest field-proven technology and a combination of features to give you unequalled reliability, performance and efficiency.

Engineered for top performance and efficiency, HT 30/35FM transmitters feature a standard quarter-wave cavity which maximizes signal performance. With a rugged single tetrode, typical PA efficiency of 80 percent is achieved for low-cost ownership.

At the heart of these HT transmitters is the Harris 55-watt THE-1 FM Exciter. With two selectable RF power outputs, low-profile slide-out design, an ultra-linear voltage controlled oscillator and full stand-alone capability, THE-1 provides super-clean signals with minimum maintenance.

For proven on-air reliability, standard features include incremental or ramp-up soft start to eliminate turn-on transient overloads; automatic power control; AC restart; internal RF FLEX*Patch* capability for emergency operation; and automatic VSWR foldback to keep you on the air during antenna icing conditions.

While the HT 30FM and HT 35FM are the most advanced transmitters on the market, with a sophisticated field-proven controller and a backup discrete logic controller, they are also designed for easy on-air use. Extensive front-panel visual displays are standard and include COLOR*Stat* monitoring and STATUS*Plus* metering. Modular components and internal accessibility contribute to ease of maintenance, and the transmitters easily interface with remote control systems.

An exclusive in-line air handling system cools the IPA and the PA with the same air for added cost savings, while an external power supply lowers internal cabinet operating temperatures and contributes to safe maintenance. And the efficient, low-noise cooling system gives incredibly quiet operation.

Both the HT 30FM and the HT 35FM are available in dual configurations for 60 kW or 70 kW operations.

Superior performance and proven reliability

High Power THE-1 Exciter uses an ultra-linear VCO for virtually transparent signal performance. Operates as a low power emergency transmitter.

HIghly Efficient Power Amplifier yields significant power cost savings over the life cycle of the transmitter. Rugged single tube operates in a wideband quarter-wave cavity.

Emergency RF FLEX*Patch* Capability permits the preamplifier, IPA or final PA to be bypassed for continued operation at reduced power in emergency conditions.

Exclusive COLOR*Stat* Flow Diagram contains blocks for each of the transmitter's major operating functions and uses tri-colored LEDs. Green indicates normal operation. Change to amber indicates abnormal, but still functional, conditions. Red indicates a complete stage failure.

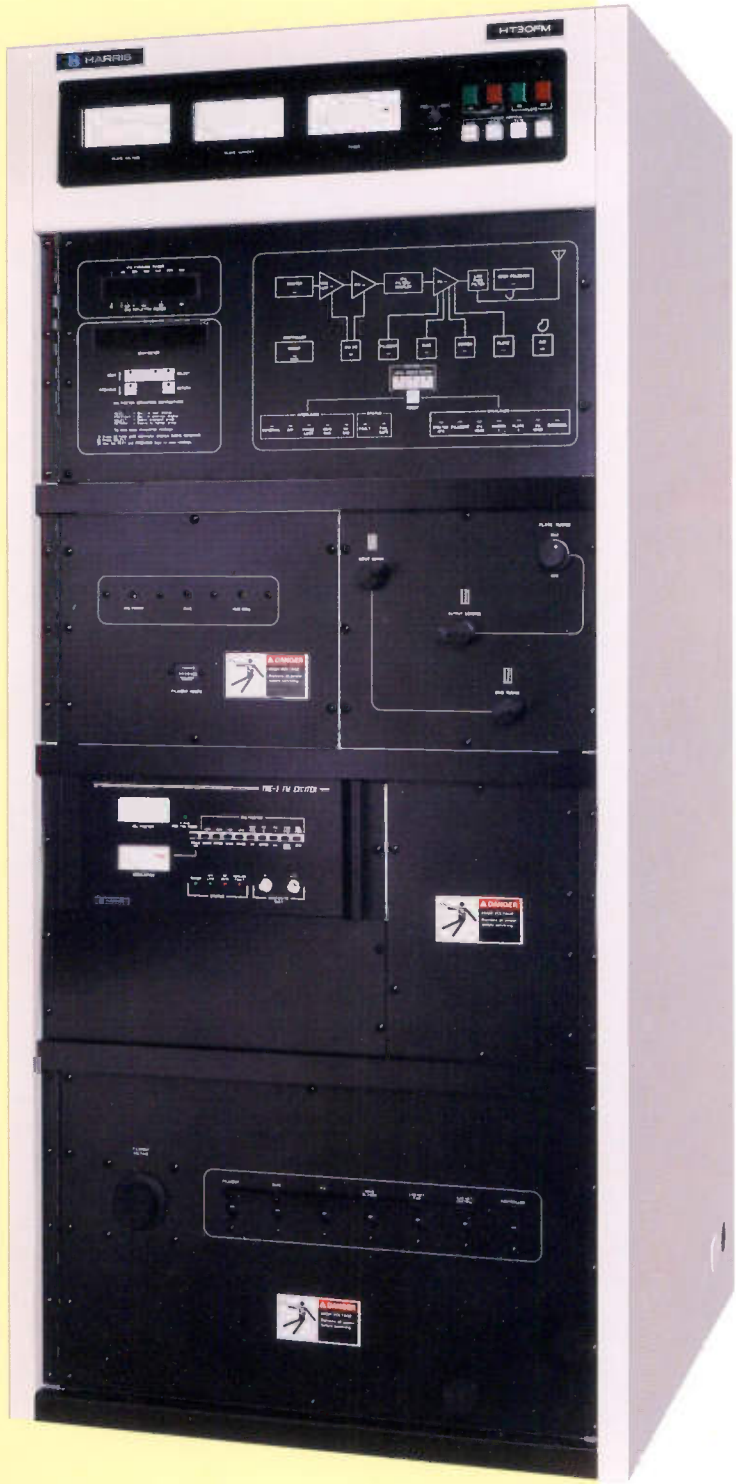
STATUS*Plus* Metering uses a front-panel alpha-numeric multimeter to access over 50 measurements of operating parameters. A dual horizontal bar IPA power meter simplifies tuning adjustments. Should any of seven major overloads occur, date and time are automatically logged.

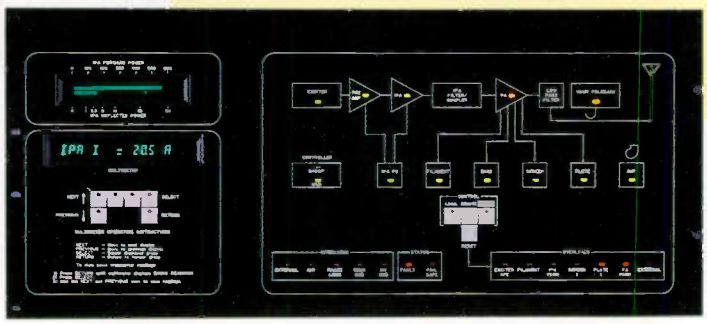
Automatic Power Control automatically maintains output power.

Automatic VSWR Foldback permits continued on-air operation at the safest power level during heavy antenna icing.

Automatic AC Restart provides built-in protection against total AC failure and loss of phase.

Remote Control Interface allows control logic to interface directly with remote control systems.





COLOR*Stat* Panel

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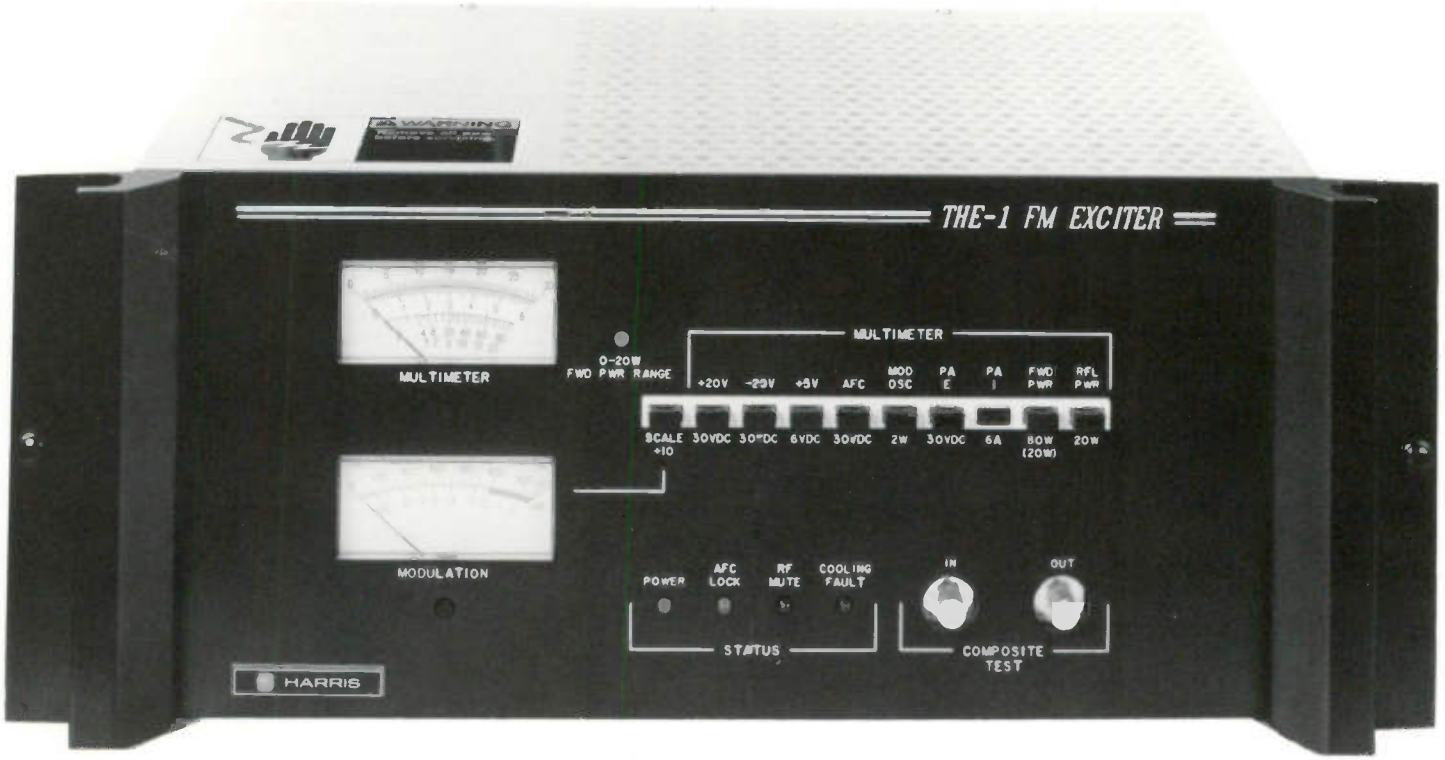
ADV 738 PTD. IN U.S.A.

HARRIS THE-1 HIGH POWER FM EXCITER



Features and Benefits:

- **3-55W or 3-15W output for direct use with new and old FM transmitters.**
- **Ultra-linear VCO for transparent signal performance.**
- **Two composite and two SCA inputs for use with external generators*.**
- **Standard monaural input with selectable pre-emphasis.**
- **Front panel composite test input/output.**
- **Low profile, slide-out drawer construction.**
- **Broadband modular output amplifier— no tuning required!**
- **FCC approved as low power FM transmitter (5.5 to 55 watts).**
- **Built-in remote control interface.**

*Generators optional

HARRIS

HARRIS THE-1 SPECIFICATIONS

GENERAL

POWER OUTPUT: 3 to 55 watts or 3 to 15 watts, continuously variable. Output power range is user selectable.
FREQUENCY RANGE: 87.5MHz to 108MHz (50 kHz steps).
RF OUTPUT IMPEDANCE: 50 ohms, fully VSWR protected (automatic foldback).
OUTPUT CONNECTOR: BNC female.
RF OUTPUT SAMPLE: −25 dBc (BNC female connector).
FREQUENCY STABILITY: ±300 Hz 0° to 50°C temperature-compensated oscillator.
TYPE OF MODULATION: Direct carrier frequency modulation (DCFM).
MODULATION CAPABILITY: ±200 kHz.
AC INPUT POWER: 90 to 132 VAC or 198 to 264 VAC, 50/60 Hz, 1-phase; 275 watts (typical) at 55 watts RF output.
RF HARMONICS: Suppression meets all FCC/DOC/CCIR requirements for operation as FM Exciter and low power FM transmitter.
ALTITUDE RANGE: To 15,000 feet above mean sea level.
AMBIENT TEMPERATURE RANGE: 0 to 50°C (operational to −20°C).
OVERALL CABINET SIZE: 7″ High (17.78 cm) × 12½″ Deep (31.25 cm) × 19″ Wide (48.26 cm); 19″ EIA rack mounting standard. Includes rack slides and mounting tray.
WEIGHT: 47 lbs.
FINISH: Black front panel with white graphics.
CONSTRUCTION: Slide-out drawer with plug in modules and subassemblies, internal adjustments easily accessible.
AUDIO/CONTROL CONNECTIONS: Sixteen connections on rear panel modular barrier strip, paralleled by a 36 pin male socket. RF bypassing on input and output lines. Includes: Monaural audio input (balanced), remote RF forward power, remote RF reflected power, remote RF mute (logic-selectable), AFC relay (N.O.), AFC relay (N.C.), AFC relay common, remote PA voltage, remote PA current, cooling fault and ground.
MODULATION METER: Dual scale fast rise time AC metering (adjustable to meet FCC ballistics).
MULTIMETER: Selectable metering of +20VDC, −20VDC, +5VDC, AFC volts, modulated oscillator power, PA voltage, PA current, forward RF power, and reflected RF power (9 positions).
TOTAL METERING FUNCTIONS: 10
REMOTE METERING PROVISIONS: PA voltage, PA current, forward power, reflected power.
REMOTE METERING SAMPLES: +4VDC nominal at full scale.
STATUS INDICATION: Five independent LED indicators (AC power, AFC lock, RF mute, cooling fault and output power range indication).

WIDEBAND COMPOSITE OPERATION (STANDARD)

INPUTS: Two; one balanced, floating and one unbalanced.
INPUT IMPEDANCE: 2000 ohms resistive.
INPUT CONNECTORS: Female BNC (rear panel).
INPUT LEVEL: 1.0 volt RMS nominal for ±75 kHz deviation.
AMPLITUDE RESPONSE: ±0.1 dB, 30 Hz to 53 kHz; down −0.2 dB at 100 kHz (typical).
FM SIGNAL TO NOISE: 80 dB below 100% modulation (reference 400 Hz at +75 kHz deviation with 75 microsecond de-emphasis, 20 Hz to 200 kHz bandwidth).
HARMONIC DISTORTION: 0.08%
INTERMODULATION DISTORTION: 0.02% (60 Hz/7 kHz 1:1 tone pair).
CCIF INTERMODULATION DISTORTION: All distortion products below 80 dB (reference 14 kHz/15 kHz test tone pair).
ASYNCHRONOUS AM SIGNAL TO NOISE: 73 dB below equivalent 100% amplitude modulation of 15 or 55 watt output carrier.
SYNCHRONOUS AM SIGNAL TO NOISE: 55 dB below equivalent 100% amplitude modulation of 15 or 55 watt output carrier with 75 microsecond de-emphasis (FM modulation ±75 kHz @ 400 Hz).
PHASE RESPONSE: +0.5/−1.0 degrees from linear phase, 20 Hz to 53 kHz.
TRANSIENT INTERMODULATION DISTORTION: .05%, 2.96 kHz square wave/14 kHz sine wave modulation.
TEST INPUT (FRONT PANEL): Nominal 1.0 volt for ±75 kHz deviation at 400 Hz (10,000 ohm input impedance, balanced BNC female connector)
TEST OUTPUT (FRONT PANEL): Nominal 1.0 volt for ±75 kHz deviation at 400 Hz (200 ohm source impedance, BNC female connector)

MONAURAL OPERATION (STANDARD)

AUDIO INPUT IMPEDANCE: 600 ohms, balanced, resistive, transformerless.
AUDIO INPUT LEVEL: +10 dBm, ±1 dB for ±75 kHz deviation at 400 Hz.
AUDIO FREQUENCY RESPONSE: Standard 75 microsecond FCC pre-emphasis curve ±0.5 dB, 30 Hz-15 kHz. Selectable: flat, 25, 50 or 75 microsecond pre-emphasis.
HARMONIC DISTORTION: 0.08%, 30 Hz to 15 kHz, de-emphasized.
INTERMODULATION DISTORTION: 0.04%, 60 Hz/7 kHz test tone pair, 4:1 ratio.
CCIF INTERMODULATION DISTORTION: All distortion products down 70 dB (reference 14 kHz/15 kHz test tone pair).
TRANSIENT INTERMODULATION DISTORTION: 0.05%, 2.96 kHz square wave/14 kHz sine wave modulation.
FM SIGNAL TO NOISE RATIO: At least 80 dB below 100% modulation (reference 400 Hz @ ±75 kHz deviation, measured 20 Hz to 200 kHz bandwidth, 75 microsecond de-emphasis).

SCA INPUTS (STANDARD)

EXTERNAL SCA GENERATOR INPUTS: Two
INPUT CONNECTORS: BNC female (rear panel).
INPUT IMPEDANCE: 10,000 ohms, unbalanced.
INPUT LEVEL: 0.1V (nominal) for 10% injection.
RANGE OF SUBCARRIER FREQUENCIES: 57 kHz to 92 kHz (25 kHz to 92 kHz in monaural operation).
AMPLITUDE RESPONSE: +0.1 dB, −0.2 dB; 20 kHz to 100 kHz.

TYPICAL PERFORMANCE BASED ON HIGH QUALITY STEREO/SCA GENERATORS AND DEMODULATORS (NOT SUPPLIED):

STEREO OPERATION

STEREO SEPARATION: 50 dB, 30 Hz - 15 kHz; typically 60 dB at midband frequencies.
LINEAR CROSSTALK: −52 dB.
NON-LINEAR CROSSTALK: −60 dB.
FM NOISE (left or right): −74 dB minimum below 100% modulation. Reference: 400 Hz, 75 microsecond de-emphasis, ±75 kHz deviation, measured 30 Hz to 15 kHz bandwidth.
HARMONIC DISTORTION (left or right): 0.2% or less, 30-15,000 Hz.
INTERMODULATION DISTORTION (left or right): 0.1%, 60 Hz/7 kHz test tone pair, 4:1 ratio.
CCIF INTERMODULATION DISTORTION (left or right): All distortion products down 80 dB (reference 14 kHz/15 kHz test tone pair).

SCA OPERATION

INTERMODULATION DISTORTION: 1%, 60 Hz/7 kHz, 1:1 ratio (audio low pass filter and pre-emphasis bypassed).
FM NOISE: −63 dB (Main channel not modulated; reference: 100% modulation = ±5 kHz deviation at 400 Hz).
CROSSTALK: (SCA to main or stereo sub-channel) −60 dB or better.
CROSSTALK: (Main or stereo sub-channel to SCA) 57 dB below ±5 kHz deviation of SCA with mono or stereo channels modulated by 30 Hz - 15 kHz, SCA demodulated with 150 microsecond de-emphasis.
CROSSTALK: SCA to SCA (41 kHz/67 kHz) 50 dB demodulated with 150 microsecond de-emphasis.

ORDERING INFORMATION

Harris THE-1 FM Exciter 994-9124-002

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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