

Platinum™ HTEL Series

Low-Power VHF ATSC Digital Transmitter

HT EL5MSLS/MSHS

Visual Power Output 5 kW
(peak, diplexer out)
Aural Power (diplexer out) 500 W

Connector Size at Cabinet Output (50 ohms):
Visual 1-5/8 in.
Aural Type N

Physical Size (W x D x H) 91 x 61.3 x 72 in. (231 x 156 x 183 cm)
Weight 3,560 lbs (1,618 kg)
Power Consumption (typical) Average: 10 kW
Black: 13 kW

HT EL10LS/HS

Visual Power Output 10 kW
(peak, diplexer out)
Aural Power (diplexer out) 1000 W

Connector Size at Cabinet Output (50 ohms):
Visual 1-5/8 in.
Aural Type N

Physical Size (W x D x H) 57 x 61.3 x 72 in. (145 x 156 x 183 cm)
Weight 2,640 lbs (1,200 kg)
Power Consumption (typical) Average: 20.5 kW
Black: 26 kW

HT EL10MSLS/MSHS

Visual Power Output (peak, 10 kW
diplexer out)
Aural Power (diplexer out) 1000 W

Connector Size at Cabinet Output (50 ohms):
Visual 1-5/8 in.
Aural Type N

Physical Size (W x D x H) 91 x 61.3 x 72 in. (231 x 156 x 183 cm)
Weight 4,840 lbs (2,200 kg)
Power Consumption (typical): Average: 20.5 kW
Black: 26 kW

HT EL10DLS/DHS

Visual Power Output 10 kW
(peak, diplexer out)
Aural Power (diplexer out) 1000 W

Connector Size at Cabinet Output (50 ohms):
Visual 1-5/8 in.
Aural Type N

Physical Size (W x D x H) 91 x 61.3 x 72 in. (231 x 156 x 183 cm)
Weight 3,560 lbs (1,618 kg)
Power Consumption (typical) Average: 20.5 kW
Black: 26 kW

HT EL20DLS/DHS

Visual Power Output 20 kW
(peak, diplexer out)
Aural Power (diplexer out) 2000 W

Connector Size at Cabinet Output (50 ohms):
Visual 1-5/8 in.
Aural Type N
3 1/8 in. at combiner output

Physical Size (W x D x H) 91 x 61.3 x 72 in. (231 x 156 x 183 cm)
Weight 4,840 lbs (2,200 kg)
Power Consumption (typical) Average: 41 kW
Black: 52 kW

Visual Performance

Frequency Range LS model: 47 to 88 MHz (Band I)
HS model: 170 to 230 MHz (Band III)

Carrier Frequency Stability¹ ±100 Hz (maximum variation over 30 days)
±2 Hz with optional precise frequency control

Regulation of Output Power² 3% or less relative to peak sync

Variation of Output³ 2% or less

Frequency Response vs. Brightness⁵ ±0.75 dB

Modulation Capability 0%

Differential Gain⁶ 3% or better

Differential Phase⁶ 1° or better

Incidental Carrier Phase Modulation⁶ ±1.5° or better relative to blanking

Differential Gain vs APL⁷ ±5% or better (10% to 90% APL)

Luminance Non-Linearity⁸ 0.5 dB or better

Signal to Noise -55 dB RMS or better relative to sync peak
(total random and periodic noise unweighted)

2t K-Factor CCIR-M 1.5%; 2.0% for other systems

20t Gain and Delay Response 3% or less total baseline distortion

Equivalent Envelope Delay Per CCIR system standard

Video Input Level 0.7 to 2.0 V, 75 ohms, -32 dB return loss

Harmonic Radiation -70 dB RMS, relative to peak of sync

Visual Sideband Response:⁴

CCIR System M/N

-3.58 MHz -42 dB or better

-1.25 MHz and Below -23 dB or better

-0.75 to +3.58 MHz ±0.5 dB

+4.18 MHz ±0.5 to -1 dB

+4.50 MHz -30 dB or better

+4.75 to +7.75 MHz -40 dB or better

CCIR System B

-1.25 MHz and Below -20 dB or better

-0.75 to +4.8 MHz -23 dB or better

+4.8 to +5.0 MHz +0.5 to -1.5 dB

+5.50 MHz -30 dB or better

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CCIR System D/K

-1.25 MHz and Below	-20 dB or better
-0.75 to -0.5 MHz	+0.5 to -2.0 dB
-0.5 to +5.5 MHz	±0.5 dB
+5.5 to +6.0 MHz	+0.5 to -3 dB
+6.5 MHz	-30 dB or better

CCIR System I

-1.75 MHz and Below	-20 dB or better
-1.25 to -0.75 MHz	+0.5 to -2.0 dB
-0.75 to +5.0 MHz	±0.5 dB
+5.0 to +5.5 MHz	+0.5 to -2.0 dB
+6.0 MHz	-30 dB or better

CCIR System K1

-1.75 MHz and Below	-20 dB or better
-1.25 to -0.75 MHz	+0.5 to -2.0 dB
-0.75 to +5.0 MHz	±0.5 dB
+5.5 to +6.0 MHz	+0.5 to -3.0 dB
+6.5 MHz	-30 dB or better

Aural Performance

Frequency Stability	±20 Hz, relative to visual carrier frequency
Modulation Capability	±120 kHz peak deviation (at any modulation frequency)

Wideband Performance (At ±75 kHz deviation)

Input Level	1 V RMS nominal into 75 ohms
Frequency Response	±0.1 dB, 50 Hz to 50 kHz ±0.5 dB, 50 to 110 kHz
FM Noise	-70 dB or better after de-emphasis
Distortion (THD)	0.25% or less, 50 Hz to 15 kHz 0.75% or less, 15 to 50 kHz
Distortion (IMD)	0.5% or less, (SMPTE 4:1 test signal)

Monaural Performance (at ±50 kHz deviation system B/I/K1/D at ±25 kHz deviation system M/N)

Input Level	0 to +16 dBm (adjustable) into 600 ohms
Pre-emphasis	Flat, 50 or 75 µs selectable
Frequency Response	±0.5 dB, 30 Hz to 15 kHz
Distortion (THD)	0.2% or less, 30 Hz to 15 kHz, after de-emphasis
FM Noise	-60 dB or better, after de-emphasis
AM Noise	-55 dB relative to 100% modulation
AM Synchronous Noise	-40 dB or better, relative to 100% amplitude modulation(4)
Subcarrier (2 inputs)	
Input Level	1 V RMS, nominal (adjustable) into 75 ohms
Frequency Response	±0.5 dB, 20 kHz to 110 kHz

Multichannel Audio Sound Systems

	BTSC	Dual Carrier	NICAM
Frequency Response	±0.1 dB ^(A)	±0.5 dB ^(B)	±0.5 dB ^(B)
Harmonic Distortion	0.5%	0.5%	0.5%
Input Impedance	75 ohms	600 ohms	600 ohms
Input Level	1 volt peak	+10 dBm	^(C)
Stereophonic S/N ^(D)	55 dB	^(C)	^(C)
Signal to Noise: (Either Channel)	N/A	60 dB	^(C)
Stereo Separation	40 dB ^(E)	40 dB typical; 32 dB minimum	^{(C)(C)}
Main to Sap Crosstalk	50 dB	N/A	N/A
Stereo to Sap Crosstalk	50 dB	N/A	N/A
Sap to Stereo Crosstalk	60 dB	N/A	N/A
Channel Crosstalk	N/A	60 dB	60 dB
Carrier Levels ^(F)	-10 dB	-13, -20 dB	-13, -20 dB
Aural Intermodulation Products ^(G)	N/A	-60 dB	-60 dB

NOTES:

- ^(A) Wideband 50 Hz to 50 kHz
- ^(B) 30 Hz to 15 kHz
- ^(C) Encoder/decoder dependent
- ^(D) Measured in left or right channel
- ^(E) Equivalent mode
- ^(F) Relative to peak visual carrier
- ^(G) Relative to peak visual carrier. Measured using 2-tone test with carrier levels indicated above
- ⁽¹⁾ After initial aging of 60 days.
- ⁽²⁾ Variation of peak output power with a change in average picture level from black to white (0% to 100%).
- ⁽³⁾ Peak to peak variation of peak sync voltage during one field using a flat field test signal, per EIA-508.
- ⁽⁴⁾ Response specified for transmitter operating into a resistive load of 1.05:1 VSWR or better.
- ⁽⁵⁾ Measured using a 20% peak to peak amplitude swept video modulation with pedestal set at 10%, 50% and 90% APL. All percentages relative to a blanking to white excursion.
- ⁽⁶⁾ Measured with a 5-step staircase signal from 75% to 12.5% of peak sync level. Subcarrier modulation level at 12.5% peak to peak.
- ⁽⁷⁾ Average picture level defined as the pedestal level over 4 horizontal lines set to 10%, 50% and 90% of maximum white level with every 5th line activated with standard linearity signal of Note 6.
- ⁽⁸⁾ Measured with 5-step staircase signal. Test signal #3 CCIR REC. 421-3.
- ⁽⁹⁾ Derate 36° F (2° C) per 1,000 ft (305 m) above sea level.

ORDERING INFORMATION

For ordering information, contact your regional Harris sales representative.