



Television Systems Products

DiamondCD™ Series

*UHF Solid State
DTV Transmitters*

DiamondCD transmitters, featuring state-of-the-art LDMOS, solid-state technology, provide a new level of UHF reliability. Each DiamondCD system includes a control cabinet and one to five power amplifier cabinets. The control cabinet houses the system controller, exciter, monitoring and control panel/graphical user interface, driver amplifier, and an optional second exciter and driver with automatic changeover.

Features/ Benefits

- ▶ Available with the Apex exciter, incorporating the latest in Real Time Adaptive Correction (RTAC™) technology. With its own integral touch screen control, Apex provides linear and non-linear continuous automatic correction of the entire transmitter and RF system, optimizing performance.
- ▶ Developed exclusively to deliver no-compromise DTV coverage, reliability, and performance.
- ▶ Parallel operation of redundant, independent, and "smart" components provide new level of on-air reliability - even during maintenance.
- ▶ Intuitive Graphical User Interface (GUI) provides simple and easy control of the DiamondCD.
- ▶ Standard parallel remote control interfaces facilitates remote control and monitoring.
- ▶ Simple, reliable positive pressure air-cooled design.



next level solutions

Harris DiamondCD Series Transmitter Specifications

General

RF Load Impedance: 50 Ohms, 1.1:1 VSWR over specified TV channel
 RF Output Connector: 3 1/8" EIA (PA cabinet outputs)
 Frequency Range: Any specified UHF TV Channel, 470-806 MHz
 Data Input: SMPTE-310M, 19.39 Mb/s
 Data Input Connector: BNC, 75 Ohms
 PFC Input: 10 MHz sinusoid, 0 to +10 dBm, BNC, 50 Ohms

Performance

DTV Power Output: ⁷	Model	Output Power	Model	Output Power
	DHD8P1	8 kW Peak, 1.8 kW Average	DHD45P2	45 kW Peak, 10.5 kW Average
	DHD10P1	10 kW Peak, 2.5 kW Average	DHD60P2	60 kW Peak, 14 kW Average
	DHD15P1	15 kW Peak, 3.6 kW Average	DHD90P3	88 kW Peak, 20.5 kW Average
	DHD20P1	22 kW Peak, 5.5 kW Average	DHD120P4	119 kW Peak, 27.5 kW Average
	DHD30P1	31 kW Peak, 7.25 kW Average	DHD150P5	149 kW Peak, 34.5 kW Average

Stability of Output Power: $\pm 2\%$ or better
 Frequency Stability (Pilot):^{1,6} ± 200 Hz / month
 Frequency Offsets: Per FCC requirements
 SNR (MER):² ≥ 27 dB
 Harmonic & Spurious Radiation: Compliant with FCC requirements (Title 47 CFR 73.622)
 Sideband Performance: Compliant with FCC mask, with Harris specified output filter (Title 47 CFR 73.622)

Service Conditions

Ambient Temperature Range:³ 0 to +45 deg C (+32 to +113 deg F)
 Ambient Humidity Range: 0 to 90% relative humidity, non-condensing
 Altitude:⁴ 0-7,500 ft. AMSL
 Physical Dimensions & Weights:

DHD8P1 through DHD30P1:	Size: 57.1" W x 61" D x 72.25" H Weight: up to 2,488 lbs (DHD30P1)
DHD45P2 & DHD60P2:	Size: 91.1" W x 61" D x 72.25" H Weight: up to 4,476 lbs (DHD60P2)
DHD90P3:	Size: 125.1" W x 61" D x 72.25" H Weight: 6,464 lbs
DHD120P4:	Size: 159.1" W x 61" D x 72.25" H Weight: 8,452 lbs
DHD150P5:	Size: 193.1" W x 61" D x 72.25" H Weight: 10,440 lbs

Electrical Requirements:⁵ (select one) 208-240V $\pm 10\%$, 3Ø, 3 or 4 wire, 50-60Hz (PA Cabinets) & 110V, $\pm 10\%$, 1Ø, 50-60Hz (Control Cabinet)
 480V $\pm 10\%$, 3Ø, 3 or 4 wire, 50-60Hz (PA Cabinets) & 110V, $\pm 10\%$, 1Ø, 50-60Hz (Control Cabinet)

Power Factor: 0.97, or better

Power Consumption:	DHD8P1	10.4 kW	DHD45P2	55 kW
	DHD10P1	15.3 kW	DHD60P2	73 kW
(typical, including internal cooling)	DHD15P1	19.8 kW	DHD90P3	110 kW
	DHD20P1	29.5 kW	DHD120P4	146 kW
	DHD30P1	38.8 kW	DHD150P5	182 kW

Notes:

- After initial aging of 60 days
- Signal to noise ratio (modulation error ratio) measured with HP89440A/HP89441A Vector Signal Analyzer
- Derate maximum temperature linearly, from +45 deg C at sea level by 2 deg C per 1,000 ft., up to 7,500 ft. For operation outside these limits, consult Harris
- For higher altitude operation, consult Harris
- For other AC voltages, consult Harris
- ± 3 Hz or better with external precision frequency control option.
- Average power rating is power delivered at output of FCC mask filter.

Specifications subject to change without notice.



Broadcast Communications Division | 4393 Digital Way | Mason, OH USA 45040
 phone: 513-459-3400 | email: broadcast@harris.com | www.harris.com