

PowerCD®

High-Power UHF ATSC Transmitter



The PowerCD® high-power UHF ATSC transmitter combines energy-saving collector inductive output tube (ESCIOT®) power amplifiers (PAs) and efficiency-boosting exclusives to deliver the best value of any transmitter in its class.

The most efficient high-power ATSC transmitter of its type, the PowerCD can help save costs, reduce maintenance, and give the peace of mind that comes with every transmitter from Harris — the source for proven technology and trusted support.

PRODUCT DETAILS

Minimize Costs

The PowerCD is much more than a transmitter; it is a unique combination of technologies that work together to minimize operating costs throughout the life of the transmitter. Both the ESCIOT PA and the Apex M2X exciter with Real-Time Adaptive Correction (RTAC) enable the transmitter to generate maximum in-band RF power per watt of electricity. Add liquid-cooled IPAs that lower the transmitter building's heat load and related cooling costs.

Spare Your Engineers

The PowerCD reduces maintenance, tweaks and repairs in many ways. Our design ensures tube protection without the headache of thyratron crowbars. Simple keylocks provide quick access to high-voltage components without compromising safety. Familiar, de-ionized water cooling provides clean and easy operation. Plus, RTAC ensures continuous adaptive correction without labor-intensive tweaks and resets. The PowerCD respects the time of your most important technical asset — the engineers.

Know What's Happening

The standard Harris eCDi transmitter performance monitoring gives complete visibility of all operating parameters and complete transmitter control — locally or remotely. A highly intuitive graphical user interface (GUI) displays information and provides drill-down capability whether you are standing in front of the transmitter or sitting in front of a PC miles away. SNMP connections can link the transmitter to a remote network management system. eCDi can even provide e-mail notification if a fault occurs.

FEATURES

- Apex M2X™ exciter provides a complete solution for ATSC broadcasting, including ATSC Mobile DTV for mobile and handheld applications
- Real-Time Adaptive Correction (RTAC™) provides continuous automatic correction, assuring optimum performance at all times
- Unique design ensures tube protection without the headache of thyratron crowbars
- Simple keylocks allow quick access to high-voltage components without compromising safety
- Familiar, de-ionized water cooling provides clean and easy operation
- Liquid-cooled driver amplifiers deliver best efficiency and low operating costs
- Harris eCDi®, Web-enabled remote GUI interface enables user-friendly remote control and monitoring of any transmitter in the network

SPECIFICATIONS

Specifications are subject to change without notice.

General

- RF Load Impedance 50 ohms, <1.1:1 VSWR over specified TV channel
- System RF Output Connector PWR30D1: 6 1/8 in. EIA, 50 ohms, flanged
PWR60D2: WR1800, WR1500 or WR1150 waveguide (coaxial transition supplied upon request)
PWR90D3: WR1800, WR1500 or WR1150 waveguide (coaxial transition supplied upon request)

Physical Dimensions

Model	Transmitter (W x D x H)	Beam Power Supply (W x D x H)	Indoor Pump Supply (W x D x H)	Output Fan Unit (W x D x H)
PWR30D1 PWR30D1U2 PWR30D1U3	1 unit, each: 79 x 56 x 79 in. (2 x 1.4 x 1.2 m)	1 unit, each: 46 x 60 x 62 in. (1.2 x 1.5 x 1.6 m)	1 unit, each: 26 x 46 x 75 in. (.66 x 1.2 x 1.9 m)	1 unit, each: 44 x 92 x 43 in. (1 x 2.3 x 1.1 m)
PWR60D2 PWR60D2U3	1 unit, each: 134 x 56 x 79 in. (3.4 x 1.4 x 2 m)	2 units, each: 46 x 60 x 62 in. (1.2 x 1.5 x 1.6 m)	1 unit, each: 26 x 46 x 75 in. (.66 x 1.2 x 1.9 m)	1 unit, each: 44 x 172 x 43 in. (1 x 4.4 x 1.1 m)
PWR90D3	1 unit, each: 190 x 56 x 79 in. (4.8 x 1.4 x 2 m)	3 units, each: 46 x 60 x 62 in. (1.2 x 1.5 x 1.6 m)	1 unit, each: 26 x 46 x 75 in. (.66 x 1.2 x 1.9 m)	2 units, each: 44 x 132 x 43 in. (1 x 3.3 x 1.1 m)

Performance

DTV Power Output ¹	Model	Output Average Digital Power
	PWR30D1	27.5 kW minimum (30 kW, typical)
	PWR60D2	55 kW minimum (60 kW, typical)
	PWR90D3	82.5 kW minimum (90 kW, typical)
Stability of Output Power		±2% or better
SNR (MER) ³		≥27 dB (>30 dB typical)
Power Consumption ⁴ (typical, including cooling)	Model	Power Consumption
	PWR30D1	84 KVA
	PWR60D2	156 KVA
	PWR90D3	213 KVA

PowerCD[®]

High-Power UHF ATSC Transmitter

Service Conditions

Ambient Temperature Range⁵ 32° to 113° F (0° to 45° C)
Ambient Humidity Range 0 to 90% relative humidity, non-condensing
Altitude⁶ 0 to 7,500 ft (2,286 m) AMSL (higher altitude operation available)
Electrical Requirements 480 V, ±2%, 3-phase, 3 or 4 wire, 60 Hz

Notes

- ¹ US channels 14-51. For channels 52-69, consult Harris. Average power outputs are after FCC mask filter and typical RF combining systems, if present.
- ² After initial aging of 60 days.
- ³ Signal-to-noise ratio (modulation error ratio) measured with HP89440A/HP89441A vector signal analyzer.
- ⁴ Power consumption figures are estimates and subject to fluctuations depending on frequency of operation and environmental conditions.
- ⁵ Derate maximum temperature linearly, from 113° F (45° C) at sea level by 3.6° F (2° C) per 1,000 ft (305 m) up to 7,500 ft (2,286 m). For operation outside these limits, consult Harris.
- ⁶ For specifications at higher altitude operation, consult Harris.