

HARRIS®



Platinum™ VHF

A Family of Compact Liquid-Cooled and Air-Cooled VHF Transmitters for Worldwide Analog and Digital Standards

PowerSmart® 

Platinum™

Uniting Technologies

The Harris® Platinum™ series of VHF, solid-state, multimedia transmitters for analog and digital TV and digital radio provides today's broadcasters with one family of transmitters capable of supporting a complete range of power levels, modulations and application needs. These transmitters — the Platinum VLX liquid-cooled and Platinum VAX air-cooled models — provide broadcasters with the latest technologies for efficient, low-cost, high-performance operation.

Harris leveraged complementary technologies from several Harris products during the development of the Platinum VLX and VAX transmitters: the Apex M2X™ exciter, the DMB 670 VHF amplifier solution and the Harris PowerSmart® design initiative for RF amplification. This powerful blend provides best-in-class performance with respect to power efficiency, functionality and transmitter size. The modular design allows for simpler installation, easier maintenance and reduced total cost of ownership over the life of the transmitters. The Platinum range includes very low-power to high-power configurations, suitable for almost any broadcast application.

All Platinum transmitters are designed with future broadcasting needs in mind, and provide the flexibility to upgrade to new features and future modulation standards as they develop. Available modulations for Platinum allow for operation in analog, ATSC, ATSC MDTV, DVB-T/H, DVB-T2, ISDB-Tb, CMMB, CTTB and DAB/DMB.

Platinum Transmitter Offerings

Platinum VLX

The VLX transmitter builds on the proven reliability and architecture of the Maxiva™ family of liquid-cooled transmitters and employs 50 V VHF amplifiers, which have enjoyed years of service in analog and digital FM radio. The modular architecture and simple, yet powerful Real-Time Adaptive Correction (RTAC™) technology make this transmitter an ideal choice for broadcasters everywhere. In single-cabinet configurations, digital power levels can reach up to 11.2 kW ATSC, 6.4 kW COFDM and 9.6 kW DAB/DMB, and analog levels can reach up to 16 kW. Multiple cabinets can be combined for higher digital and analog power levels.

Platinum VAX

The VAX transmitter architecture first gained notice in its predecessor, the DMB-670, which boasted best-in-class power efficiency to go with its industry-leading power levels and RF performance. The VAX air-cooled transmitter, available in single- or dual-cabinet configurations, has digital power levels up to 12 kW ATSC, 6.4 kW DVB-T/T2 and 10 kW DAB/DMB, and analog levels up to 16 kW. The VAX transmitter provides a compact, efficient alternative to liquid-cooled systems with matching reliability and ease of operation.

Features

- PowerSmart technology, for best-in-class power efficiency and lowest operating costs
- Apex M2X exciter technology, for easy migration from analog to digital or between different standards
- Rugged, reliable design and construction
- Transmitters include Real-Time Adaptive Correction (RTAC) — no manual adjustments required
- Fully broadband power amplifier (PA) modules with no adjustment — 168 to 242 MHz 1:1 PA module to power supply (PS) redundancy
- Hot-pluggable, liquid-cooled and air-cooled linear RF amplifier modules
- Harris web-enabled HTML remote GUI interface and SNMP available standard

Benefits

Easy Migration from Analog to Digital

The Apex M2X exciter and common amplifier platform support a range of analog, digital and mobile standards and allow for a smooth conversion from analog to digital transmission. This flexibility extends the working life of the transmitter and reduces future upgrade costs.

Maximum Efficiency for Cost-Effective Operation

Leveraging PowerSmart technology, Platinum offers market-leading power efficiency, lower operating costs and reduced cost of ownership over the life of the transmitter.

Compact Footprint

Well-suited for crowded, shared transmitter sites, Platinum reduces facility space requirements and simplifies installation.

High Power Density

In both liquid-cooled and air-cooled models, Platinum achieves high power levels to save both space and cost.

Powerful, Straightforward Monitoring and Control

An advanced transmitter control system delivers the necessary information to the operator for informative and reliable control. The TCU color touch-screen provides an overview of all operational parameters for maintenance procedures and performance checks. Additional monitoring and control via front-panel interfaces, Web GUI, SNMP and parallel control allows operators to confidently manage their systems in any situation.

Improved Uptime and Reduced Service Costs

The redundant and hot-pluggable power amplifier and universal power supply modules make on-air servicing easy and eliminate costly interruptions. Lightweight amplifier pallets and modules facilitate overnight/same-day shipping for simple, cost-effective spares holding. Platinum also supports replacement of pre-tuned amplifier pallets in the field, eliminating the need for complex tuning after amplifier replacement.

Enhanced Redundancy

The core modular architecture of the Platinum transmitters allows only a minimum drop in RF output power when there is a failure of an amplifier or power supply. This standard feature provides a robust system for maximum on-air time. In addition, Platinum supports a range of system redundancy options. In dual-drive systems, the integrated control system monitors exciters and switches control and RF feeds quickly and efficiently. The control system also supports options for 1+1 and N+1 configurations — monitoring and controlling each transmitter system, input stream and RF pathways.



Platinum™ VAX

Harris Apex M2X Exciter — The Heart of the Transmitter

The Apex M2X exciter technology included in all Platinum transmitters takes digital and mobile TV to the next level. With a record of proven performance and reliability, the Apex M2X has logged millions of hours on air.

The Apex M2X exciter delivers a flawless signal with complete technical and regulatory compliance for tube and solid-state digital transmitters and provides excellent support for a complete range of global digital and analog TV standards, including NTSC and PAL.



Apex M2X™

Real-Time Adaptive Correction

The exclusive Real-Time Adaptive Correction (RTAC) technology, standard in Platinum transmitters, enables the exciter to more fully utilize the transmitter power amplifier, yet maintain spectral mask compliance of the digital signal. Featuring simultaneous linear and nonlinear, adaptive, memoryful precorrection, RTAC technology provides the highest level of correction to all types of RF amplifiers.

With RTAC, the Apex M2X exciter continuously monitors transmitter output and performance, while automatically adapting for system nonlinearities — keeping your station well within compliance and maximizing your coverage.

Harris PowerSmart Technology Inside

Featuring Harris PowerSmart technology in its transmitter architecture, Platinum transmitters offer superior power efficiency to reduce broadcasters' cost of ownership and improve operating conditions. Proven, rugged 50-volt LDMOS device technology delivers a dramatic increase in power density.

PowerSmart® 

Global Monitoring and Control

All Platinum VLX and VAX transmitters come standard with a number of interfaces to allow both local and remote monitoring and control of the transmitter. IP ports on the transmitter allow the operator to access the built-in HTML Web graphical user interface (GUI). In addition, the Platinum transmitters offer standard support for SNMP for users with network monitoring needs. This combination of features allows the user to monitor and access the transmitter functions and perform software updates from the transmitter site and any network-connected PC.

Additional remote control is available via the parallel port available on either the Transmitter Control Unit (TCU) or the VAX low power unit (LPU). For local control, a display and push-buttons are present on the transmitter for quick access to needed functions and review of operating conditions.

For additional transmitter control redundancy, a second TCU module provides life support functions to ensure continuity of operation should there be a failure in the primary control module of the TCU.



Platinum™ Transmitter Control Unit

Make a Safe Investment

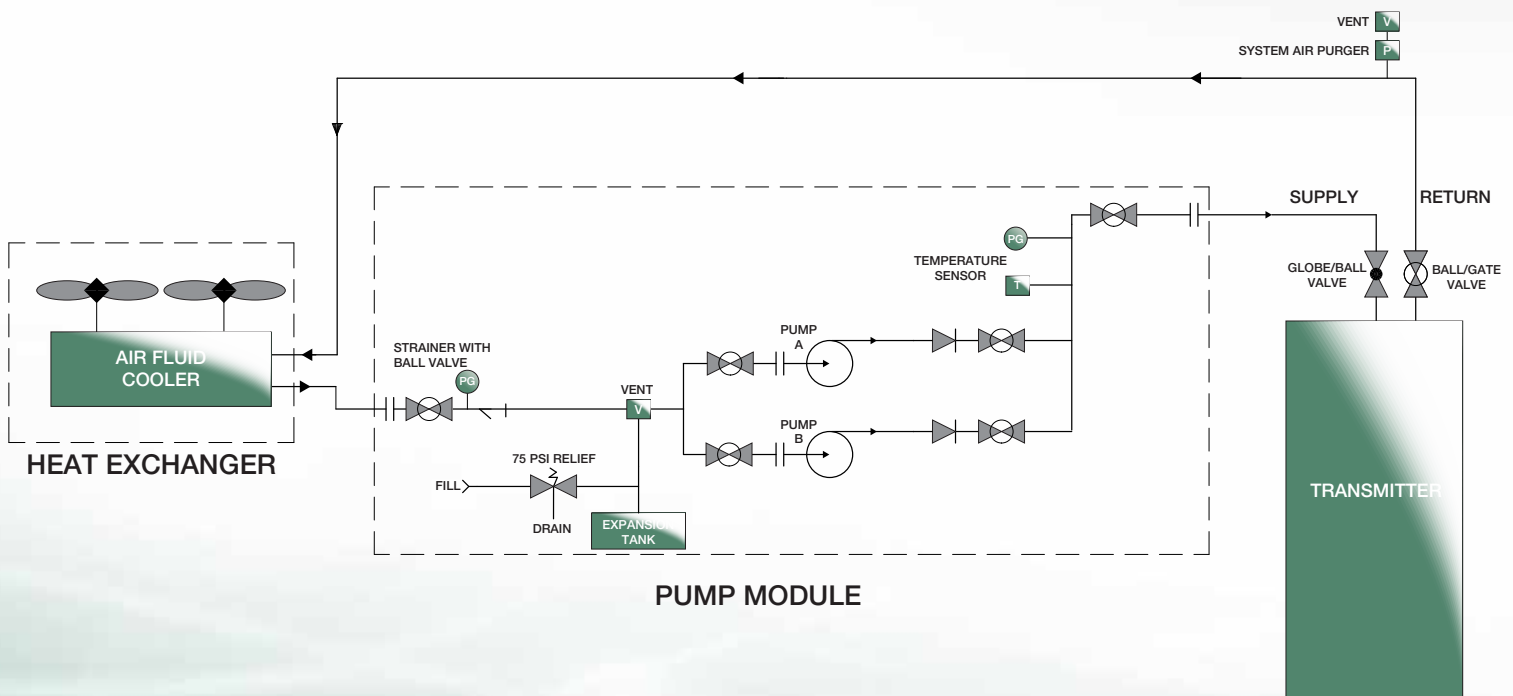
Launching a new analog or digital service often requires a significant investment in new and unfamiliar technology, so finding a technology partner with technical expertise and service support resources is critical. Harris is uniquely positioned to provide both.

Harris has developed an extensive core-competency in broadcast solutions backed by years of experience in maximizing broadcast performance. Harris has leveraged this expertise to provide transmission solutions for major digital transmission network rollouts and trials around the world. As a digital transmission leader, Harris offers field-proven systems and a range of support options — from standard 24/7 telephone technical assistance and parts, to installations, training, full system design and field maintenance contracts.

Harris High Efficiency Liquid-Cooling System

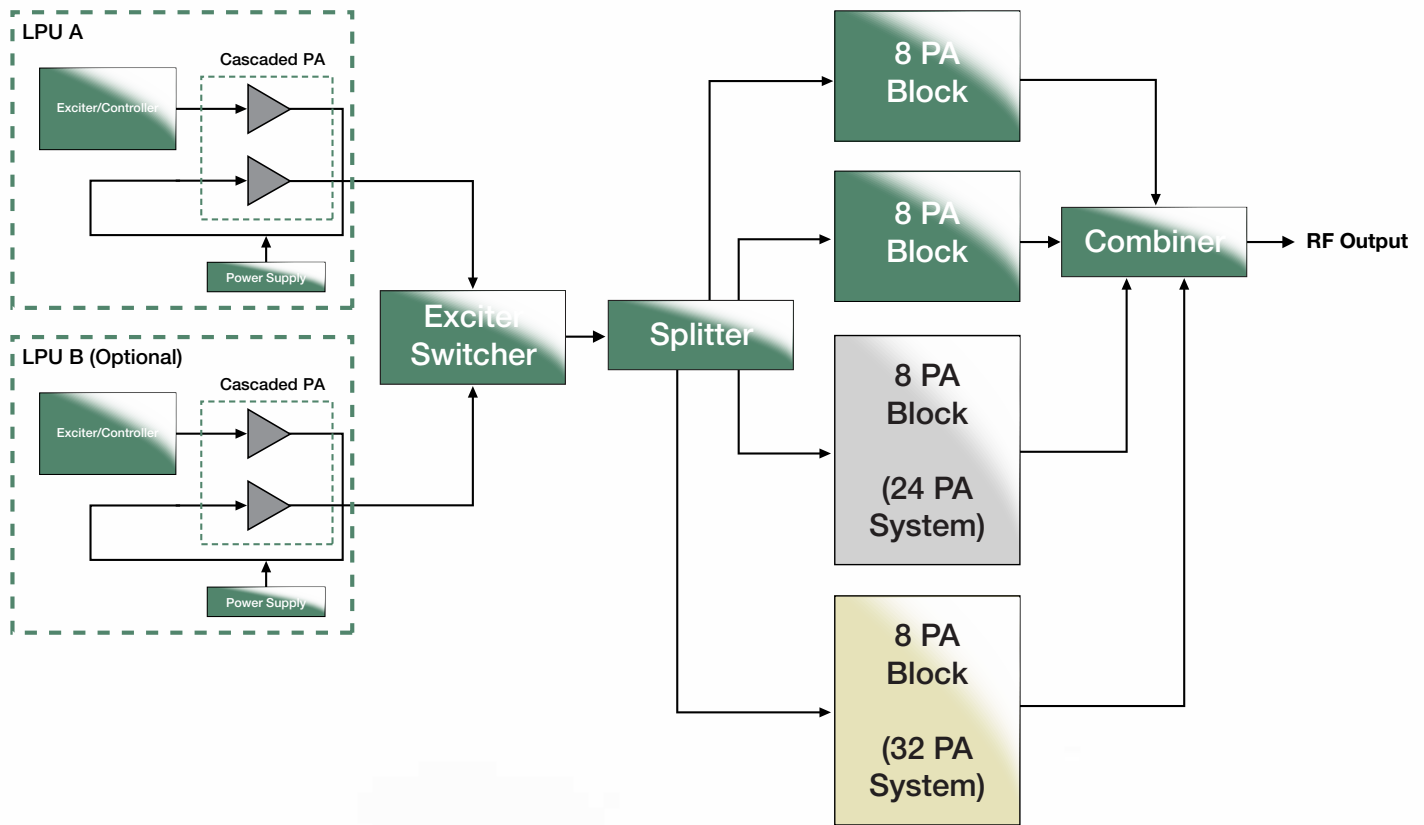
All Platinum VLX systems feature a high-efficiency liquid-cooling system that has been carefully engineered for maximum efficiency over a wide range of ambient conditions and operating power levels.

The closed-loop liquid-cooling system utilizes a pump module with fully redundant cooling pumps and auto-changeover capability. The liquid-to-air outdoor heat exchanger also includes dual fans for maximum redundancy. The pump motor speed is controlled based on coolant flow requirements, and the heat exchanger fan motors are also speed controlled to provide the optimum cooling performance over a wide range of ambient weather conditions. These design features translate to maximum reliability at the lowest energy consumption in a small footprint.



Platinum™ VAX Block Diagram

8 PA to 32 PA Systems



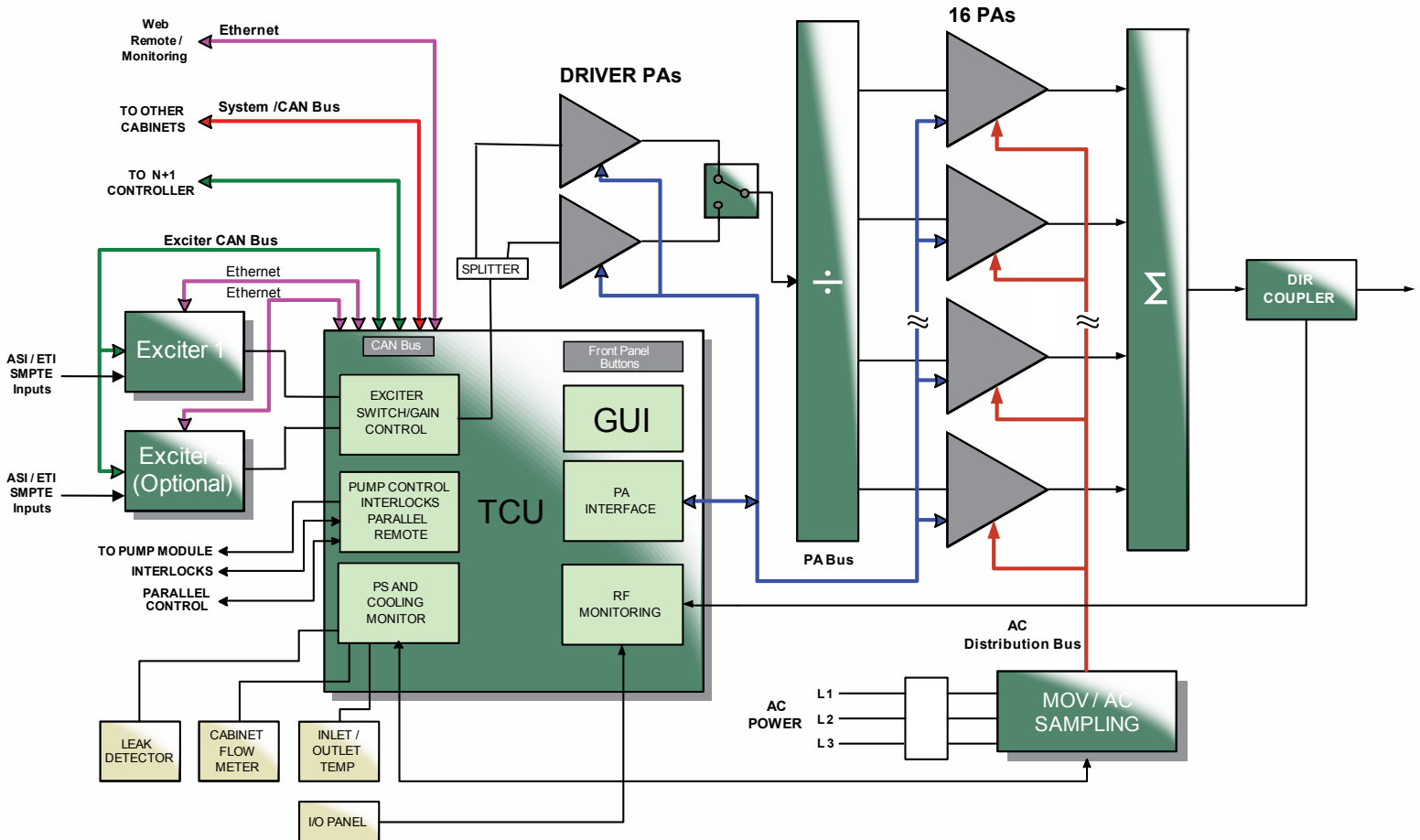
Platinum VAX Power Levels (Pre-Filter)

Modulation	LPU	2 PA Systems		Multiple PA Systems				
	Power	Cascaded PAs	Parallel PAs	4 PA	8 PA	16 PA	24 PA	32 PA
ATSC	60/180 W	375 W	750 W	1.5 kW	3 kW	6 kW	9 kW	12 kW
TV COFDM	50/100 W	200 W	400 W	800 W	1.6 kW	3.2 kW	4.8 kW	6.4 kW
DAB	50/150 W	300 W	600 W	1.2 kW	2.5 kW	5 kW	7.5 kW	10 kW
Analog	100/250 W	500 W	1 kW	2 kW	4 kW	8 kW	12 kW	16 kW

Platinum™ VLX Block Diagram

16 PA System

16 PA System



Platinum VLX Power Levels (Pre-Filter)

Modulation	2 PA	4 PA	6 PA	8 PA	12 PA	16 PA
ATSC	1.4 kW	2.8 kW	4.2 kW	5.6 kW	8.4 kW	11.2 kW
TV COFDM	800 W	1.6 kW	2.4 kW	3.2 kW	4.8 kW	6.4 kW
DAB	1.25 kW	2.4 kW	3.6 kW	4.8 kW	7.2 kW	9.6 kW
Analog	2 kW	4 kW	6 kW	8 kW	12 kW	16 kW

ONE Company for Workflow Solutions Throughout the Media Chain

Harris is the ONE company delivering interoperable workflow solutions across the entire media delivery chain — providing today's broadcaster with a single, integrated approach to capitalize on the benefits of IT and mobile applications. By providing unparalleled interoperability across our product portfolio, Harris is able to offer customers integrated solutions that improve workflows, save money, enable new revenue streams and provide a migration path to emerging media business models. To meet the evolving needs of broadcast, distribution, government agencies and entertainment businesses, Harris is the ONE answer for change.

Service And Support

At Harris, we are committed to customer service excellence. It is our goal to provide the highest level of support by applying a simple rule: We take ownership of helping our customers succeed. Our support teams consist of innovative technical experts who support all situations regarding product performance, integration and operational processing. We are adept at providing proven solutions, making workflows better and ensuring reliability of the product and system. At Harris, our experienced and dedicated teams stand ready to help you meet your goals for premium product performance, 100% up-time and reduced maintenance investment.

Warranty

Because we want to assure you that Harris stands beside its products and system solutions, our products carry a standard set of warranty services, which are competitive with — and in some cases outperform — others in the industry.

Service Packages

We offer value-add services that allow you to customize the level of services you need in meeting mission-critical performance levels. Our service package options offer many ways to upgrade your standard warranty by choosing the All-Inclusive OnePak, or by selecting individual services from our extensive portfolio. Our service and support advisors can assist in the selection of the individual services that best suit your requirements.

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For more information, please visit broadcast.harris.com/TVTransmission.

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