

5/6/7/8/11 GHz ANSI or CEPT digital hierarchies

MegaStar® 155 PX

synchronous
digital radio

high performance
low expense

MegaStar 155 PX is a high-capacity synchronous digital microwave radio for OC-3 or STM-1 transport. It operates in the 5, 6, 7, 8 and 11 GHz bands, integrating with standard SONET/SDH multiplexers and ATM switches. MegaStar 155 PX features a wide selection of antenna coupling unit arrangements that accommodate both standard and non-standard channelization plans. The radio offers built-in performance recording with associated charting and analysis software, Co-Channel Dual-Polarized (CCDP) operation and anticipatory errorless switching in either of two compact, easily expandable—1+1 hot standby or 0:N/1:N multi-line configurations.

Service providers will appreciate MegaStar 155 PX's rapid installation, exceptionally low cost of ownership, and state-of-the-art automated provisioning. Alignment features eliminate test equipment requirements and save considerable network installation time and operational costs.

Easy to deploy into existing network infrastructures, MegaStar 155 PX can also extend trunk communications across ring, linear or mesh network topologies. An optional built-in errorless 1:N switch protects multiple OC-3 or STM-1 bearer channels in the remote possibility of equipment failure. Dual receivers and IF combiners provide robust and responsive diversity protection against multipath propagation outages.

Other advanced features include high-efficiency 128 QAM LSB-coded FEC modulation, powerful Adaptive Time Domain Equalization and anticipatory errorless data switching. MegaStar 155 PX interoperates with all standard multiplexer electrical and optical interfaces and

can be adapted to non-standard and special applications, such as encryption. CCDP operation is also available to double each RF channel's transport capacity.

Network management is more flexible than ever. The FarScan™ element manager is compatible with all Harris Stratex Networks microwave radios and adapts to third party equipment, enabling local and remote monitoring and control of microwave sites. Utility software permits easy remote software download, inventory reporting and channel provisioning.

With the optional SNMP StarView™ proxy agent, MegaStar 155 PX will readily adapt to any standard network management configuration. The Paperless Chart Recorder (PCR), a powerful, software-based recording and diagnostic tool, permits remote access to operational data stored on board MegaStar 155 PX radios. PCR provides on-line viewing and analysis of RF received signal levels (RSL), critical radio alarms and OC-3 or STM-1 tributary error performance data recorded during any period of interest, whether short or extended.



Every Connection Counts.



Spectral Conformance**ITU-R**

Frequency Plans	Frequency Ranges	Channel Spacing
Rec. 746-4 A3	4400 - 5000 MHz	28.0 MHz
Rec. 1099-3	4400 - 5000 MHz	40.0 MHz
Rec. 383-5	5925 - 6425 MHz	29.65 MHz
Rec. 384-7	6430 - 7110 MHz	40.0 MHz
Rec. 385-6 A3	7110 - 7750 MHz	28.0 MHz
Rec. 385-6 A4	7425 - 7900 MHz	28.0 MHz
Rec. 386-6 A1	7725 - 8275 MHz	29.65 MHz
Rec. 387-8	10700 - 11700 MHz	40.0 MHz

North American Frequency Plans

Frequency Plans	Frequency Ranges	Channel Spacing
U.S. FCC	5925 - 6425 MHz	30 MHz
U.S. FCC	6525 - 6875 MHz	10 MHz (3 Channels)
Industry Canada	5915 - 6930 MHz	30 MHz
U.S. Government	7125 - 8500 MHz	30 MHz
Industry Canada	7125 - 8275 MHz	30 MHz
U.S. & Canada	10700 - 11700 MHz	40 MHz

Emission Designator:	30M0D7W
Modulation Type:	128 QAM with Forward Error Correction
Modulation Rate:	167.48 Mbit/s
FCC Type Identifiers:	5925 - 6875 MHz; HRS-MG06G3S1-1 10,700 - 11,700 MHz; BCK9GKMSTR1130-1

Radio Performance Specifications

		Frequency Diversity (1:N) ⁽²⁾	Hot-Standby (with Space Diversity)	Hot-Standby (Parallel Power Amps)	Hot-Standby (Switched Power Amps)	Non-Protected
Tx Output						
5 GHz^(1,3)	(4.4 - 5.0 GHz)	25.5 dBm	24.4 dBm	N/A	24.4 dBm	25.8 dBm
L6 GHz⁽¹⁾	(5.9 - 6.4 GHz)	28.5 dBm	27.4 dBm	30.8 dBm	27.4 dBm	28.8 dBm
U6 GHz⁽¹⁾	(6.4 - 7.0 GHz)	28.0 dBm	26.9 dBm	30.3 dBm	26.9 dBm	28.3 dBm
Rx Input	@ 10 ⁻³ BER	-71.3 dBm	-71.5 dBm	-70.5 dBm	-70.5 dBm	-71.5 dBm
	@ 10 ⁻⁶ BER	-69.8 dBm	-70.0 dBm	-69.0 dBm	-69.0 dBm	-70.0 dBm
System Gain	@ 10 ⁻³ BER	99.8 dB	98.9 dB	101.3 dB	97.9 dB	100.3 dB
7/8 GHz⁽¹⁾	(6.95 - 8.5 GHz)					
Tx Output		27.0 dBm	26.5 dBm	29.5 dBm	26.5 dBm	27.3 dBm
Rx Input	@ 10 ⁻³ BER	-70.8 dBm	-71.0 dBm	-70.0 dBm	-70.0 dBm	-71.0 dBm
	@ 10 ⁻⁶ BER	-69.3 dBm	-69.5 dBm	-68.5 dBm	-68.5 dBm	-69.5 dBm
System Gain	@ 10 ⁻³ BER	97.8 dB	97.5 dB	99.5 dB	96.5 dB	98.3 dB
11 GHz⁽¹⁾ (10.7 - 11.7 GHz)						
Tx Output		24.1 dBm	23.5 dBm	26.0 dBm	23.5 dBm	24.3 dBm
Rx Input	@ 10 ⁻³ BER	-69.8 dBm	-70.0 dBm	-68.9 dBm	-68.9 dBm	-70.0 dBm
	@ 10 ⁻⁶ BER	-68.3 dBm	-68.5 dBm	-67.4 dBm	-61.4 dBm	-68.5 dBm
System Gain	@ 10 ⁻³ BER	93.9 dB	93.5 dB	94.9 dB	92.4 dB	94.3 dB

⁽¹⁾ Typical values measured at the antenna port of the ACU (Top-of-Rack).⁽²⁾ Additional loss per circulator for incremental channels (<0.2 dB at 5, 6, 7, 8 GHz, <0.3 dB at 11 GHz) for 1:N applications.⁽³⁾ Parallel PA not available at 4.4 to 5.0 GHz.

Frequency Stability: ± 0.0003%

ATPC Range: 10 dB

Dispersive Fade Margin: 50 dB @ 10⁻³ BER

Residual BER: per hop or link <10⁻¹³ (typical)

Wayside Channel: 2.048 Mbps or 1.544 Mbps

Receiver Overload: -17 dBm <10⁻⁶ BER

Diversity and 1:N Switching: Errorless, Independent Direction

Receiver Image Rejection: >75 dB

T/I Ratio: Co-channel 34 dB, Adjacent Channel 0 dB

Service Channel Options: Any two of VF Orderwire, Data Channel, 10BASE-T

Typical performance specifications given here apply to transmitters and receivers connected back-to-back and must be confirmed before they become applicable to any specific system, contract or order.

Environmental and Mechanical Characteristics

Power Requirements: -48 VDC or ± 24 VDC 150 watts per T/R

Temperature Range: 0° to +45° C Full Operating Range
-5° to +55° C ≤ BER 10⁻⁶ - 40° to + 65° C Storage and transport

Humidity: 5 to 95% non-condensing

Spurious Emission: ETSI Class A, FCC Part 15, Subpart B for Class A digital devices, NEBS Level 1 per Telcordia SR-3680

EIA Rack Dimensions:

Width	Depth	Height
616 mm	381 mm	2134 mm
24.25 in.	15 in.	84 in.

(ETSI Rack: Optional)

ETSI Conformance and Power Utility Package: Optional

Tributary Interface Options:
(ITU-T G.703, G.957, G.958 and Telcordia GR-253, GR-499)

Optical: Multimode & single mode; STM-1 Class S.1.1, OC-3, OC-3c

Electrical: STM-1e, EC-3, EC-3c, DSX-3 (3xDS3)

Network Management Interfaces:
FarScan™, NetBoss®, Dry Contact Alarms, PCR
SNMP: StarView™ Proxy

Orderwire Interfaces:
Voice, data (up to 4.8 kbps) or IEEE 802.3, 10BASE-T Ethernet