



5/6/7/8/11 GHz NA or ITU-T Transport Standards

MegaStar® 155

Synchronous

digital radio



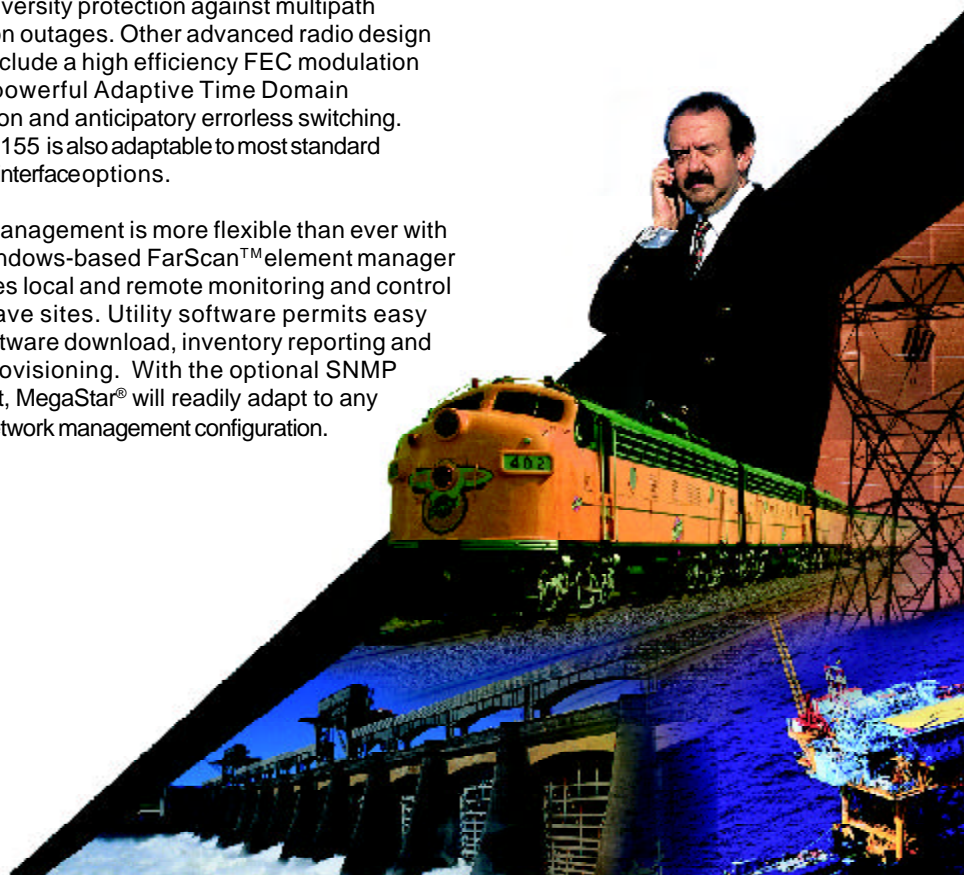
MegaStar® 155 is a digital synchronous microwave radio operating in the 5, 6, 7, 8, and 11 GHz frequency bands. Each operating channel carries a fully standard 155 Mbit/s synchronous payload and integrates seamlessly with SDH, SONET, ATM, and PDH networks.

Service providers will appreciate both the initial low cost of ownership and the state-of-the-art automated provisioning and alignment features that eliminate test equipment requirements and save considerable network installation/operation costs.

Easy to deploy into existing network infrastructures, MegaStar® 155 can also extend communications across ring, linear or mesh network topologies. An optional, built-in, errorless 1:N switch protects multiple channels in the remote possibility of equipment failure while the IF Combiner with dual receivers provides diversity protection against multipath propagation outages. Other advanced radio design features include a high efficiency FEC modulation scheme, powerful Adaptive Time Domain Equalization and anticipatory errorless switching. MegaStar® 155 is also adaptable to most standard multiplexer interface options.

Network management is more flexible than ever with the MS Windows-based FarScan™ element manager that enables 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 proxy agent, MegaStar® will readily adapt to any standard network management configuration.

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Spectral Conformance

ITU-R

Frequency Plans	Frequency Ranges	Channel Spacing
Rec. 746-2 A3	4400 - 5000 MHz	28.0 MHz
Rec. 1099-2	4400 - 5000 MHz	40.0 MHz
Rec. 383-5	5925 - 6425 MHz	29.65 MHz
Rec. 384-6	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. 386-5 A1	7725 - 8275 MHz	29.65 MHz
Rec. 387-7	10700 - 11700 MHz	40.0 MHz

North American

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; BCK9GKMSTR0630-1
10,700 - 11,700 MHz; BCK9GKMSTR1130-1

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 \leq 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

EIA Rack Dimensions:	Width	Depth	Height
	616 mm	381 mm	2134 mm
	24.25 in	15 in	84 in

ETSI Rack: Optional

Tributary Interface Options: (ITU-T G.957, G.958 and Bellcore TR-TSY-000253), GR-499 STM10, OC-3, OC-3c
Multi-mode and Single-mode
STM-1e, EC-3, EC-3c
DSX-3: for 3xDS3

Network Management Interfaces

SNMP, FarScan™, HNMT™, Dry Contact Alarms
Q-Interface for TMN (future enhancement)

Radio Performance Specifications

		Frequency Diversity (1:1) ⁽¹⁾	Hot-Standby (with Space Diversity)	Hot-Standby (Parallel Power Amps)	Hot-Standby (Switched Power Amps)	Non-Protected
5/6 GHz^(1,3) (4.4 - 6.95 GHz)						
Tx Output		28.5 dBm	27.4 dBm	30.8 dBm	27.4 dBm	28.8 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		25.1 dBm	25.3 dBm	28.0 dBm	25.3 dBm	26.0 dBm
Rx Input	@ 10 ⁻³ BER	-68.8 dBm	-69.0 dBm	-67.5 dBm	-67.5 dBm	-69.0 dBm
	@ 10 ⁻⁶ BER	-67.3 dBm	-67.5 dBm	-66.0 dBm	-66.0 dBm	-67.5 dBm
System Gain	@ 10 ⁻³ BER	93.9 dB	94.3 dB	95.5 dB	92.8 dB	95.0 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: $\pm 0.0003\%$

ATPC Range: 10 dB (not available with 1:N)

Dispersive Fade Margin: 50 dB @ 10⁻³ BERResidual BER: per hop or link <10⁻¹³

Wayside Channel: 2.048 Mbit/s or 1.544 Mbit/s

Receiver Overload: -17 dBm <10⁻⁶ BER

Diversity and 1:N Switching: Errorless

Receiver Image Rejection: >75 dB

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

Service Channel Options: VF Orderwire & Data Channel

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.



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