Advantech Wireless

AMR TN-X/30

155 Mbps SDH Transmission

Features

- Highest bandwidth efficiency, 155 Mbps plus wayside traffic in a single radio channel
- 1:N configuration providing expanded payload capacity and errorless protection switching
- Performance equal to fiber, with such functions as forward error correction, errorless protection switching and space diversity
- Compact and modular design, allowing up to four radio channels to be mounted on one standard bay
- Adaptive transmit power control, facilitating frequency coordination and minimizing power consumption
- Local and express order wire for inter-site communications among service personnel
- Optional wayside channels (up to three E1) for dropping traffic at regenerator sites and to offer supplementary value added services
- Radio Element Manager (REM), an SNMP-based network management solution designed to monitor and control the entire radio network from a central location
- Seamless connectivity between REM and higher level network management system

Key benefits

- Most economical solution for deploying SDH networks over adverse terrain, when infrastructure exists or when capacity doesn't warrant optical fiber.
- Flexible system scalability for incremental growth without staggering start-up costs.
- Rapid deployment for fast time-to-market and quick return on investment.
- Low operating costs attributed to high component reliability, standby protection and multi-level centralized network management.
- Five nines reliability for carrier grade service and content delivery

Overview

Operating in frequency bands 6, 7, 8 and 11 GHz, the TN-X/30 radio features a highly-integrated architecture that employs 128 QAM technology to transport 155 Mbps payloads in standard ETSI radio channels. Designed for seamless integration with optical network elements and with higher-level network management systems, the TN-X/30 radio offers service providers a robust, proven and cost-effective solution for deploying high-speed, high-capacity transport networks ready to meet the burgeoning demand for greater bandwidth.

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System

	L6 GHz	U6 GHz	7 GHz	8 GHz	11 GHz
Frequency Range (MHz)	5925-6425	6430-7110	7110-7750 7425-7900	7725-8275	10700-11700
ITU-R Recommendation	383.5	384.7	385.6 Annex 3		
385.6 Annex 4	386.4	387.7			
Channel Bandwidth (MHz)	29.65	40	28	29.65	40
Channel Capacity	171.7 Mbps (155.5 Mbps + 3xE1 wayside channels)				
Modulation	128 QAM				
System Gain at 10^{-3} BER* (dB)	105.1	104.6	104.6	103.9	99.9
System Gain at 10^{-6} BER* (dB)	102.1	101.6	101.6	100.9	96.5
Dispersive Fade Margin	>47 dB at 10^{-3} BER; >45 dB at 10^{-6} BER				

Transmitter

RF Power Output* (dBm)	31.5	31.3	31.3	31	28
Adaptive Transmit Power Control (ATPC) Range (dB)	17	17	17	17	17
Frequency Stability	±10 ppm				

Receiver

Threshold at 10^{-3} BER* (dBm)	-73.6	-73.3	-73.3	-72.9	-71.9
Threshold at 10^{-6} BER* (dBm)	-70.6	-70.3	-70.3	-69.9	-68.5
Residual Bit Error Rate	$<10^{-13}$ per hop				

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Product Specifications

Input Voltage	-48 VDC or ±24 VDC
Power Consumption (for a basic terminal shelf)	162 W with nominal Tx output power; 187 W with maximum Tx output power; add 25 W when service channel, order wire and 1+1 optical interfaces are equipped.

Mechanical

Bay Dimensions (ETSI frame)	600 mm W x 2200 / 2600 mm H x 450 mm D including waveguides
Weight	295 kg for a bay fully-loaded with four shelves

Environmental

Operating Temperature	0 to +50°C
Relative Humidity	10 to 95%

Network management

Radio Element Manager (SNMP-based network manager), Craft Terminal Interface, Parallel Interface (Dry-contact relay terminals), Serial Interface (EIA RS-422 port), Optional Interfaces (Parallel Telemetry: 13 alarms, 5 controls per shelf).

Auxiliary facilities

Service Channel (two RS-422 asynchronous ports), Orderwire, Wayside Channels (up to three E1channels)

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