17E1 Flexible Capacity PDH Microwave solution

ML-MV

Features

- Standard compliant system for 7-23 GHz.
- Two product variants are available:
  - 17E1
  - 17E1 plus Ethernet payload
- 2E1 to 17E1 programmable Capacity.
- Ethernet Traffic Capacity: 4Mbps, 8Mbps, 16Mbps, 34Mbps configurable.
- RF hops: 1+0, 1+1 Hot standby.
- Standard interfaces: BNC (unbalance), RJ-45(balance) for E1 tributary and RJ-45 for Ethernet interface.
- Hot swap IF board, easy to upgrade configuration and trouble shooting.
- Local management via CIT to facilitate commissioning.
- Store equipment configuration onto flash memory.
- NMS with integral routing and management of ODUs and remote IDUs.
- Built-in testing functions to facilitate commissioning and troubleshooting.
- Wide operating range on power supply.
- Compact and light weight for easy installation and reliable performance.
- Tool-free ODU installation.
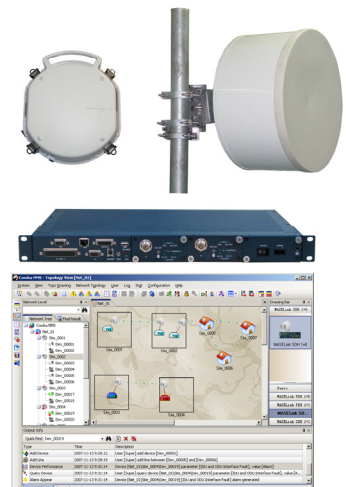
Product Description

Comba Digital Microwave System allows transmission links to be established rapidly and easily to meet a variety of transmission needs, bring cost savings and helping rapid network rollout. The solution comprises of: antenna, outdoor unit, indoor unit and NMS.

Antenna: A range of antenna is available to satisfy path design requirements. ODU connection is by direct mounting to the antenna feed.

ODU: Converting between IF signal and link frequency, programmable channel and power including comprehensive monitoring is achieved with the integrated Monitoring & Control Unit (MCU).

IDU: Performing base band signal processing, multiplex/demultiplex and modulation/demodulation functions, providing tributary, auxiliary data and EOW interfaces. Telnet or SNMP interface to IDU provides local or remote configuration and management.

NMS: Supports SNMP protocol to configure and monitor all parameters of the microwave system.

Please consult us for exact and detailed product requirement for the territory(s) concerned, and to use the "Microwave Parabolic Antennas" datasheet to select the required antenna(s) for each link.

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Technical Specifications

Electrical – System			7GHz	8GHz	11GHz	13GHz	15GHz	18GHz	23GHz
Frequency Range		GHz	7.10-7.90	7.90-8.50	10.67-11.74	12.80-13.20	14.50-15.30	17.70-19.70	21.20-23.60
ITU-R Compliance			F.385-7	F.386-6	F.387-9	F.497-6	F.636-3	F.595-3	F.637-3
Modulation			QPSK						
ITU-R RF Tx/Rx Spacing		MHz	154 or 161	119,126 or 311.32	490, 500 or 530	266	420 or 490	1010 or 1008	1008 or 1232
RF Channel Bandwidth	2x E1	MHz	3.5						
	4x E1		7						
	8x E1		14						
	17x E1		28						
Tx power at Antenna port (±2dB tolerance)		dBm	27			25		23	
Tx Power Control Range (1 dB step)		dB	0 to +27			0 to +25		0 to +23	
Rx AGC Control Range (-40dBm to -70dBm)		dB	≥ 60						
ATPC range		dBm	-40 to -70						
Aggregate	E1		2, 4, 8, 17						
	NMS Interface		Yes						
	Wayside		Yes						
	Programmable Capacity		Yes						
Spurious Emissions	30.0MHz to 21.2GHz	dBm	≤ -50						
	21.2GHz to 26.5GHz		≤ -30						
Receive Sensitivity @ BER = 1x10e-6 (Guaranteed: +2dB)	2x E1	dBm	-91				-90	-89	-88
	4x E1		-89				-88	-87	-86
	8x E1		-86				-85	-84	-83
	17x E1		-83				-82	-81	-80
Maximum RSL @ BER = 1x10^{-10}		dBm	-15						
IP Interfaces			IEEE 802.3, 10/100BaseT, RJ-45 Connector						
Throughput		Mbps	34						
Residual BER			≤ 1x10^{-13}						
Supported RF Configuration			1+0, 1+1						
Radio Protection			Frequency Diversity, Hot Stand-By						
IF Frequencies		MHz	350 (up-conversion), 140 (down-conversion)						
Frequency Stability		ppm	± 5						
Noise Figure		dB	≤ 5				≤ 6		
Power Supply		VDC	-20 to -60						
Power Consumption (Per Hop)	1+0		≤ 66						
	1+1	W	≤ 132						
IF Connection on ODU			N-type connector, Belden 9913/RG-8, up to 300m						
RSSI Connection on ODU			BNC						
Mechanical – ODU									
Dimensions (H x W x D)		mm	279 x 240 x 92						
Weight		kg	4.2						
Operating Temperature		°C	-33 to +55						
Operational Altitude Above Mean Sea Level (max)		m	4500						
Operating Humidity		%	≤95						
Electrical – IDU									
Baseband Port Bit Rate		Mbit/s	2.048						
E1 Pulse Template Compliance			ITU-T G.703						
Baseband I/O Bit Deviation		ppm	± 50						
Baseband I/O Interface			75Ω Unbalanced, BNC or 120Ω Balanced, RJ-45						
LAN Interface			10/100 BaseT, RJ-45						
AUX Interface			Sync, 64kbit/s, DB9-Female, RS-422 protocol						
Voice EOW Interface			4-wire, RJ-22						
USB			USB for flash storage only						
Monitoring Port Interface	CIT		VT-100, via local craft RS-232/DB-9 port up to 11520kbit/s						
	NMS		SNMP, Ethernet 10/100 BaseT, RJ-45						
Programmable User I/O Interface			4x Input and 4x Output, DB-26						
Front Panel LEDs			Run, IDU Fault, Active unit identification, Fault unit identification						
Mechanical – IDU									
Dimensions for planning purposes (H x W x D)		mm	44 x 438 x 280						
Weight for planning purposes		kg	≤5						
Operational Temperature		°C	-5 to +55						
Operational Altitude Above Mean Sea Level (max)		m	4500						
Operational Humidity (max)		%	≤85						