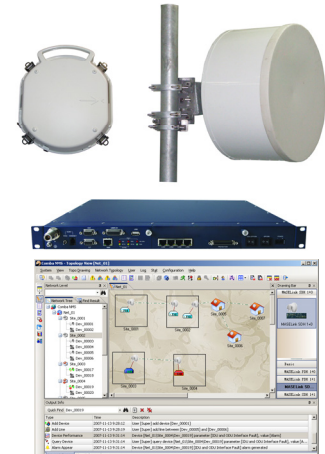


Features

- Standard compliant system for 6-23GHz.
- Supports 100Mbps or 160Mbps Ethernet Payload.
- Supports Layer 2 Switch and VLAN IEEE 802.1Q.
- Supports space / frequency diversity and hot standby, unprotected (1+0) and protected (1+1).
- Adaptive Transmit Power Control (ATPC) function.
- Automatic Gain Control (AGC) function.
- Hot standby and hitless Rx protection switching.
- Local management via CIT to facilitate commissioning.
- NMS for end-to-end link performance, monitoring and diagnosis with SNMP management.
- Loopback testing functions to facilitate commissioning and troubleshooting.
- Compact and light weight for easy installation and reliable performance.
- Wide operating temperature ranges from -33°C to +55°C for ODU.
- 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, brings cost savings and helps rapid network rollout. This solution comprises of: antenna, outdoor unit, indoor unit and NMS.

The IP radio system is an IP transmission solution designed to seamlessly incorporate radio links into wide range of infrastructures, working across a variety of frequencies from 6GHz to 23GHz and meeting carrier-grade standards for reliability, quality and environmental compliance.

The ML-GI is able to transport Ethernet traffic at a throughput of 100Mbps or 160Mbps. ML-GI is full VLAN which supports (port based, multi-access and trunk) IEEE 802.1Q.

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.

Technical Specification

Electrical - System		6GHz	7GHz	8GHz	11GHz	13GHz	15GHz	18GHz	23GHz
Frequency Range	GHz	5.925-7.110	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.383-7 (Lower) F.384-7 (Upper)	F.385-7	F.386-6	F.387-9	F.497-6	F.636-3	F.595-3	F.637-3
Modulation	100Mbps 160Mbps	64 QAM 128 QAM							
ITU-R RF Tx/Rx Spacing	MHz	252.04 (Lower) 350 (Upper)	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	MHz	28							
Tx Power at Antenna Port (± 2 dB tolerance)	dBm	21				19		18	17
Rx Sensitivity @ 10^{-6} BER (Guaranteed: ± 2 dB)	dBm					-74.5			
RX AGC Control Range	dB	-68				-67			-66
Residual BER		≥ 60 $< 10^{-13}$							
Supported RF Configurations		1+0, 1+1							
Radio Protection		Hot standby/ Space diversity / Frequency diversity							
IP Interfaces		IEEE 802.3, 4x10/100Base-T or 1x10/100/1000Base-T							
VLAN		port based, multi-access and trunk (IEEE 802.1Q)							
Throughput (max)	Mbps	100 or 160							
AUX interface		Async (19.2kbit/s) / Sync (64kbit/s), RS-422 protocol, DB-9							
Voice EOW Interface		4-wire, RJ-11							
Monitoring Port Interface	CIT NMS	F-interface, VT-100, via local CIT RS-232, DB-9 Q-interface, SNMP, Ethernet 10/100 Base-T, RJ-45							
Programmable User I/O Interface		4 Inputs 4 Outputs, DB-26							
Power Supply	VDC	-20 to -60							
Power Consumption (per hop)	1+0 1+1	W				≤ 105		≤ 210	
IF Frequencies	MHz	350 (up-conversion), 140 (down-conversion)							
IF Connection on ODU		N-type connector, Belden 9913/RG-8, up to 300m							
RSSI Connection on ODU		BNC							
Remote IDU Access		Out-of-band using radio-overhead and integrated routing							
Mechanical - Per Installation									
Dimensions (H x W x D)	IDU ODU	mm	44 x 438 x 280 279 x 240 x 92						
Weight	IDU ODU	kg	5 4.2						
Operational Temperature	IDU ODU	$^{\circ}$ C	-5 to +55 -33 to +55						
Operational Altitude Above Mean Sea Level (max)		m	4500						
Operational Humidity (max)	IDU ODU	%	≤ 85 ≤ 95						
Environmental Compliance			ETSI ETS 300 019						