

Optical Master Unit Mk. II

OMU II - RF to Fibre Optic Conversion System

Key features

- Supports Cellular 2G, 3G, 4G services up to 2700 MHz & FM/VHF/UHF/LMR public safety services in the same enclosure
- Single enclosure supports up to eight MBF 40 and/or BSF 3604 remote units
- MIMO support
- Web based remote management via Ethernet or wireless modem
- Flexible configuration to support up to 8 sectors via single chassis
- Simple integration to AEM or any other 3rd party NOC via SNMP traps



The OMU II is used to convert signals from RF to light when fibre-fed repeaters are used at the remote end of the optical link. The OMU II is a headend system that can be connected directly to a base station or off-air device such as a digital repeater or bi-directional amplifier.

For larger venues with multiple services and multiple bands, a Point Of Interface (POI) unit may be required to condition Uplink and Downlink RF signals between the BTS/Off-air Repeater and the OMU. In the downlink direction, the OMU picks up the signal from the BTS, converts it into an optical signal and transfers it over a fibre optical cable to the repeater. In the uplink direction, the OMU receives the signal from the remote repeater via the fibre optical cable, converts it to a RF signal and sends it back to the base station.

Configuration.

Each OMU II has 12 slots in the front panel to support the optical transceiver modules and the RF

Splitter/Combiner Modules which distribute the RF signal to and from the optical transceivers. The front panel also hosts a dedicated control card (with optional wireless modem), an alarm and battery backup card, and a rack communication board (RCB) which handles communication between the fibre optic modules and the control module. Each OMU II chassis is fitted with 2 power supplies (AC or DC depending upon model) on the back of the chassis.

The OMU II can support up to 8 of our standard high powered MBF 40 or BSF 3604 remotes or a combination of both.

Automatic Optical Gain Setting.

The fibre optic system Axell Wireless has designed puts a clear focus on user friendliness and ease of installation and commissioning. Through an automatic optical gain setting, the commissioning is easily performed, thus reducing the time it takes to put the equipment in service. This also means that the training is significantly simplified

and the need for installation effort is decreased.

Remote Supervision.

The system is monitored and controlled via our network management software tool called Active Element Manager (AEM) which is a robust element manager platform designed to provide complete alarm monitoring and control of every element in the network.

AEM communicates with each fibre remote unit via the OMU over the same single mode fibre link that carries the RF as Optical signals and which results in a very reliable supervision of the radio link. Optional built-in RF modems are available.

The OMU II supports a wide range of public safety services, cellular bands for EMEA and APAC and LTE700, 850, PCS and AWS and is always used in combination with one or several fibre fed repeaters.

Technical specification

RF Parameters	
Frequency bands	68-500 / 380-2700 MHz
Gain flatness	typical 2 dB (p-p)
Composite Input power to OMU with RF splitter/combiner	Nominal power 10 dBm Maximum power +23 dBm (without damage)
Composite Input power to a Fibre Module	Nominal power -3 dBm Maximum power +10 dBm (without damage)
Number of optical modules	1 to 8
Number of supported remote units	1 to 8
Laser class	Class 1
Optical Wavelength	
Downlink (± 10 nm)	1310 or 1330
Uplink (± 3 nm)	1510 or 1530 or 1550 or 1570 or 1590
Optical Output power	
Opto Module	+5 \pm 2 dBm
Maximum Optical Input Power	+5 dBm
Output Power (TX) max	+7 dBm
Operating Temperature	+41 to 113° F (+5 to +45°C)
Automatic fibre optic loss compensation	Yes
Power Requirements	
Input voltage (model dependant)	230VAC 50 Hz or 115 VAC 60 Hz or -48 VDC
Power Consumption	Typical 50 W (fully equipped)
External electrical interfaces	
Local Maintenance Terminal	RS232
RF Ports	N-type Connector Female
Optical Ports	SC/APC
AC/DC Mains Input	IEC Connector to PSU modules
External alarms	Via Front panel
Modem connector	RJ45 or RJ11
Modem antenna connector	SMA
Ethernet connector	RJ45
Mechanical specifications	
Dimensions (W x H x D)	17.5" x 5.2" x 11.4" (444mm x 132.5mm x 291mm) 19" rack
Weight	33 lbs. (15 kg) (fully equipped)
IP rating	IP20
Reliability specification	
Lifetime (MTBF)	>70000 hrs.
Complies With	
EU Directives	EU 2015/863 European RoHS 3 directive. 2014/53/EU Radio Equipment Directive (RED)
Safety	EN60950-1, EN60825-1
EMC	EN 301 489-1, EN 301 489-50, EN 301 489-5, EN 301 489-11

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