OPTICAL MASTER UNIT MARK 2 (OMU II)

- Supports Cellular 2G, 3G, 4G services up to 2700MHz and public safety services FM/VHF/ UHF/LMR on the same enclosure
- Single enclosure to support high power (MBF-40) and low power (MBF-20) remote units
- Flexible configuration to support up to 8 sectors via single chassis
- MIMO support
- Web based remote management via wireless modem
- 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 fiber-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 fiber optical cable to the repeater. In the uplink direction, the OMU receives the signal from the remote repeater via the fiber optical cable, converts it to a RF signal and sends it back to the base station.

ARCHITECTURE
Each OMU II has a dedicated control card, alarm and battery backup card, rack communication board (RCB), optional modem card, and 2 AC/DC power supplies on the back of the chassis. It has 12 slots in the front to support the Opto Module cards and Signal Conditioning Cards (Opto Splitters or SCC cards). The SCC cards include a 1:4 optical splitter hence it can support up to 4 MBF-20 units from a single SCC card.

The OMU II can support up to 8 of our standard high powered MBF-40 or 24 low powered MBF-20 remotes. For the maximum number on MBF-20 remote units, 6 Opto Modules and 6 SCC (OS) are used which may be configured according to the number of sectors used in the project – up to 6 sectors in this configuration. If only MBF-40 units are required, up to 8 Opto Module cards are used (no SCC cards) which may be configured according to the number of sectors used in the project – up to 8 sectors in this configuration. You can mix and match between the MBF-40 and MBF 20 remote units. Please refer to the 2nd page for all the available options.

AUTOMATIC OPTICAL GAIN SETTING
The fiber 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
Only one modem is needed to communicate with an OMU II and its fiber fed repeaters. The modem types available are GSM, UMTS, CDMA 1x, PSTN, and TCP/IP. The modem is found inside the OMU II and communication with the fiber-fed remote units is transparently handled via the fiber that connects them. The system can be monitored and controlled via the Axell Wireless’ network management software tool called AEM.

AEM is a robust element manager platform designed to provide complete alarm monitoring and control of every element in the network. AEM communicates with each fiber remote unit via the OMU over the same single mode fiber strand that carries the RF signals. Both data communications and the RF signals are managed over the same fiber link which results in a very reliable supervision of the radio link. The OMU Mark II supports: public safety services (VHF, UHF, TETRA, SMR 700/800/900), cellular bands for EMEA and APAC (800/900/1800/2100/2600) and LTE700, 850, PCS and AWS for Americas and is always used in combination with one or several fiber fed repeaters.

Example with 6 Opto Modules and 6 Opto Splitters
### RF Parameters

- **Frequency bands**: 68-500 / 380-2700 MHz
- **Gain flatness**: typical 2 dB (p-p)
- **Nominal RF input power**: +10 dBm composite power
- **Absolute maximum RF input power**: +23 dBm composite power
- **Number of optical modules**: 1-24 (depends on low/high power configuration)

### Optical Module Electrical Specification

| Downlink (± 10 nm) | 1310 or 1330 |
| Uplink (± 3 nm)   | 1510 or 1530 or 1550 or 1570 or 1590 |

### Optical Output Power

- **Opto Module**: +5 ± 2 dBm
- **Opto Splitter (SCC)**: +5 ± 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 fiber optic loss compensation**: Yes

### Power Requirements

- **Power Requirements**: 230/115 VAC, 50/60 Hz, 24/-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**: AC: IEC Connector, DC: Terminal Block
- **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 in (444 x 132.5 x 291 mm) 19” rack
- **Weight**: 33 lbs (15 kg) (fully equipped)
- **IP rating**: IP20

### Reliability Specification

- **Lifetime (MTBF)**: >70000 hrs

### Ordering Information

<table>
<thead>
<tr>
<th>Product Names</th>
<th>Description</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMU-CH</td>
<td>OMU II Chassis (PSU, RCB, Controller)</td>
<td>OMU-CH</td>
</tr>
<tr>
<td>OMU-FO</td>
<td>Opto Module</td>
<td>OMU-FO</td>
</tr>
<tr>
<td>OMU-OS</td>
<td>Opto Splitter (SCC)</td>
<td>OMU-OS</td>
</tr>
<tr>
<td>OMU-ALBT</td>
<td>Alarm &amp; Battery card</td>
<td>OMU-ALBT</td>
</tr>
<tr>
<td>OMU-GPRS</td>
<td>Modem card (GPRS)</td>
<td>OMU-GPRS</td>
</tr>
<tr>
<td>OMU-CDMA</td>
<td>Modem card (CDMA 1X)</td>
<td>OMU-CDMA</td>
</tr>
</tbody>
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**About Axell Wireless**

Axell Wireless is one of the top 3 global providers of wireless coverage solutions and the market leader in the provision of solutions for the public safety market worldwide. Applications for Axell Wireless equipment include coverage solutions for all sorts of environments including road and rail tunnels, metros, small and large buildings and transportation systems such as railways and aeroplanes. With its headquarters in the UK, Axell Wireless has been operating for over 30 years and has a substantial international presence operating out of 10 offices across 4 continents. A proven track record combined with a worldwide reputation for providing innovative and high quality products have made Axell Wireless a truly global player in the wireless coverage industry.

www.axellwireless.com

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