



PTP Microwave Links



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UNI 155 STM/OC-3 SDH/SONET Microwave Link

- Operating Frequencies 6 to 38 GHz
- ETSI and FCC Specifications

The **UNI 155** radio system is a full-featured digital microwave radio designed to seamlessly incorporate radio links into a fiber-based SDH/SONET network and available in a variety of frequencies from 6 GHz to 38 GHz.

Common applications include: mobile backhaul infrastructure, PTP access and trunk networks, and competitive local access networks.

The system features a fully compliant SDH/SONET regenerator and provides additional benefits including automatic protection switching, network management and tight integration with existing SDH/SONET element management systems. The SDH radio system exceeds carrier-grade standards for reliability, quality and environmental compliance.

System Features

All specifications subject to change without notice

Reliable Operation:

- Complete IDU digital system design
- Scalable digital modem modulation (128QAM and 64TCM)
- 1+1 configuration with no additional switching hardware
- Hitless (errorless) Rx protection switching
- Hot-Standby, Space-Diversity, Frequency-Diversity

Easy to Use:

- Rapid, simple installation with plug and play software
- Intuitive, proactive user interface includes SNMP management
- Easy ODU direct mounting installation
- ODU can be replaced without affecting antenna alignment

Flexible Interfaces:

- One IDU for all frequencies, capacities and interface applications
- Auxiliary EOW voice and data channels
- Reduces logistics, spare parts, and product stocking

Competitive Advantages:

- Exceptionally high link performance (receiver sensitivity and system gain)
- Full range of configurations and frequency bands
- Common architecture
- Small, lightweight, aesthetic ODU/antenna
- Remote software upgrading
- Intuitive network management system
- Simple and economically efficient maintenance

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Specifications

All specifications subject to change without notice

System

| Frequency ¹ | | 7GHz | 8GHz | 11GHz | 13GHz | 15GHz | 18GHz | 23GHz | 26GHz | 38GHz |
|----------------------------------|---------------------------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Standards | | ETSI | ETSI | ETSI/FCC | ETSI | ETSI | ETSI/FCC | ETSI/FCC | ETSI/FCC | ETSI/FCC |
| Operating frequency [GHz] | | 7.1-8.2 | 8.2-8.5 | 10.7-11.7 | 12.7-13.3 | 14.4-15.4 | 17.7-19.7 | 21.2-23.6 | 24.2-26.4 | 37.0-40.0 |
| Channel Bandwidth | 128QAM 64TCM | 28MHz (ETSI) 40MHz (FCC) | | | | | | | | |
| ODU Tx Power [dBm] | 128QAM 64TCM | +20 +24 | +20 +24 | +19 +23 | +19 +23 | +19 +23 | +19 +23 | +18 +22 | +17 +21 | +15 +19 |
| Rx Sensitivity [dBm] | 128QAM @10 ⁻⁶ BER | -68.0 -74.5 | -68.0 -74.5 | -68.0 -74.5 | -68.0 -74.5 | -68.0 -74.5 | -68.0 -74.5 | -68.0 -74.5 | -67.5 -74.0 | -65.5 -72.0 |
| ATPC Range | | ≤17 / 20 dB | | | | | | | | |
| Frequency Stability | | 10 ppm | | | | | | | | |
| Background BER | | < 10 ⁻¹³ | | | | | | | | |
| Standards Compliance | | ETSI EN 302 217-2, ETSI EN 301 489, ETSI EN 302 300 132-2, IEC EN 60950, FCC Part 101, Part 15, UL60950 | | | | | | | | |

¹Contact a factory representative for a detailed list of supported frequency plans and t/r spacing

Payload

| | | |
|---|--|--|
| SDH/SONET Payload | Line Rate Interfaces | 155.52 Mbps STM-1/OC-3 Electrical (ITU-T G.703), Dual 1.0/2.3 coaxial connector; or, Optical (ITU-T G.957 S-1.1 / Telcordia GR-253 IR-1), Duplex SC receptacle |
| | SDH/SONET Processing Standards Compliance | Regenerator Section Termination (RST) / Section Termination (ST) ITU-T G.707. G.783, Telcordia GR-253 |
| Wayside Payload | Interface | 128QAM version: E1 (2 Mbps), dual 1.0/2.3 coaxial connector |
| (transported outside the SONET / SDH frame) | | 64 TCM version: 1 Mbps Ethernet 10Base-T, RJ-45 |
| Auxiliary Payload | Voice EOW Interface Data EOW Interface | Standard handset interface G.703 and V.11 |

Configuration

| | |
|-----------------------------|---|
| Radio Configurations | 1+0, 1+1 (with no additional switching unit) |
| Radio Protection | Hitless (errorless) switching with hot-standby, frequency and space diversity |
| Tributary Protection | Single or Dual tributary |
| Power Protection | Dual inputs with redundant feed and power conversion (1+1 configuration) |

Mechanical / Environmental

| | |
|------------------------------|---|
| Dimensions | IDU: 44.5 cm W x 24.0 cm D x 4.4 cm H (1 RU), ODU: 26.7 cm Diameter x 8.9 cm H |
| Weight | IDU: 4 Kg; ODU: 4.6 Kg |
| Operating Temperature | IDU: -5° to +45°C; ODU: -33° to +55°C |
| Altitude | Up to 4500 meters |
| Humidity | IDU: 95% non-condensing; ODU: 100% all-weather |
| Power Input | -48V DC (-40.5 V to -57 V DC), 3-pin D-type |
| Power Consumption | 1+0; ≤75 W; 1+1; ≤150 W |
| Cooling | Natural convection (no fans used) |
| ODU-IDU Interface | Coaxial N-type connector |
| Antenna Interface | Wave guide output with direct antenna mount |
| Standards Compliance | ETSI ETS 300 019 |

Management

| | |
|------------------------|--|
| Protocol | SNMPv1 |
| Local Access | Ethernet 10Base-T, RJ-45 |
| Remote Access | Integrated routing across link and interconnecting LANs |
| Craft Interface | VT-100, via local craft RS-232/DB-9 port or via remote Telnet client |
| External Alarms | 8 inputs and 10 outputs, DB-25 connector |