

Transcend™ 800

High Performance IP, TDM, and Broadcast Microwave Radio



Transcend 800 Indoor Unit (IDU)
Version with interface for 1xSTM-1/OC-3, 16 E1/T1 & 7 GigE interface

Features

- Advanced Radio and Digital Signal Processing**
 Up to 380 Mbps over-the-air throughput for single IDU configurations and multiple Gbps over-the-air throughput for aggregated traffic.
- True Adaptive Coding and Modulation (True ACM™)**
 Automatically adjusts coding and modulation rates, without any payload error, to changing environmental conditions. This allows for sustained availability at overall higher capacity.
- High speed IP traffic – Gigabit Routing and Switching**
 Includes a full featured built-in Layer 2 Gigabit Switch and Layer 3 Gigabit router. High Speed IP traffic is scalable up to Gbps with low latency.
- Broadcast capabilities built-in**
 Carries MPEG data carried directly from broadcast equipment through integrated DVB-ASI interfaces over the microwave link. The DVB-ASI interfaces support standard definition, high definition, and Digital 3D broadcast applications. With the built-in GPS receiver, broadcast network can carry and generate a high stability 10 MHz clock and 1PPS sync signal to each site and avoid installing the costly additional GPS equipment.
- Add and Drop feature for TDM traffic**
 Offers SDH/SONET and SPDH capabilities with powerful Add/Drop Multiplex solution for TDM traffic.
- Flexible Installation Configuration**
 Available in split-mount version in all RF bands and in full-indoor configuration for lower RF bands.



Outdoor Unit (ODU)



Indoor RF Unit (RFU)

Overview

The Transcend 800 with integrated Layer 2 10/100/1000BaseT Ethernet switch, full featured Layer 3 10/100/1000BaseT Ethernet router and optional support for up to 2 x STM-1/OC-3, 3 x DS3, 84 x E1/T1s, and 8 x DVB-ASI is the ideal carrier grade IP, TDM, and Broadcast microwave radio. Low cost high capacity, high performance, and flexible solution to demanding transmission, telecom, and broadcast applications including backhauling 3G/4G traffic and Wireless Broadband Networks such as LTE, HSPA+, WiMAX, Metro WiFi, UMTS TDD, and private communication networks carrying data, voice, and HD video.

The Transcend 800 is Advantech Wireless Microwave's second generation microwave system offering True Adaptive Coding and Modulation, dynamically and seamlessly adapts coding and modulation to path propagation conditions. The result is lower Total Cost of Ownership; higher availability, smaller antennas, and longer hop distances.

It can be flexibly configured as a narrow band or wide band IP, TDM, or mixed IP/TDM transport stream radio. Modulation and data throughput are programmable from QPSK to 256 QAM or up to 380 Mbps for a single carrier. Operators can provision traffic capacity based on priority or dynamically change it to provide maximum throughput. Provisioning can be based on CoS priorities or QoS for VoIP traffic and is fully compatible with triple play to combine voice (Abis or VoIP) with GPRS and video services.

Traffic grooming, cross connection, expansion and redundancy is supported through the integration of a front plane high speed serial interface. Transcend 800 supports a complete set of diversity and protection interfaces including full hot standby, frequency diversity, space diversity, and polarization diversity. The inherent connectivity and flexibility of Transcend 800 supports multiple network technologies including Ring, Mesh, Star, and Tree networks.

Includes a secure Embedded Element Manager (Web interface, Telnet and SSH) built upon open standards. Advantech Wireless Microwave's optional NetWay Manager is a complete network management suite compatible with all Advantech Wireless Technologies' point-to-point microwave radios.

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Transcend 800 Specifications

Interfaces

- 4 x 10/100/1000 Base-T Ethernet Switch (auto negotiation)
- 3 x 10/100/1000 Base-T Ethernet Router (auto negotiation)
- 2 x STM-1/OC3 full duplex through SFP slots (optional)
- 1 x 1000 Base – SX through SFP slot (optional)
- 3 x DS3 (optional)
- 16 x E1/T1 (standard), 20/52/84 x E1/T1 (optional)
- 2, 3, or 8 x DVB-ASI (pair TX/RX) for broadcast applications (optional), 188-byte & 204-byte packets, maximum 214 Mbps
- 1PPS sync signal with optionally built-in GPS receiver
- 10MHz high-stability Stratum 2 clock+ synchronization (optional)
- dedicated ports for Network Management and Engineering Order Wire applications (traffic independent)
- DSUB-15 (f), Protection and Alarm Interface
- DSUB-9 (f) Serial console port for CLI
- 2 x High speed serial interface for redundancy and traffic aggregation
- Dual power supply (option)

Characteristics

Frequency bands (GHz)	4 – 42 GHz
Channelization	1.75 – 56 MHz for ETSI and 2.5 – 50 MHz for ANSI channel scheme (programmable)
Modulation	Programmable: QPSK, 16-QAM, 32-QAM, 64-QAM, 128-QAM, 256-QAM with True Adaptive Coding and Modulation™
Configuration	Unprotected, hot stand-by, space diversity, frequency diversity, N+0 and XPIC
Installation Type	Split or All-Indoor
Ethernet Latency	200 us (typical value)

Management Functions

- Multiple simultaneous user support
- True IP management network (DCN)
- Supports host networking
- Automatic routing via RIP/OSPF
- Support Simple Network Time protocol (SNTP)
- CT management
- Active and standby software partitions for very robust operation
- Application software downloaded and updated without loss of traffic

Fault Management Functions

- Real-time alarm / event logs
- Acknowledgeable and re-configurable alarms / events
- Forwarding of alarms to 8 northbound Network Management
- Alarms/Events via SNMP TRAPS, e-mail (SMTP), as well as digital I/O and LED
- Rapid Spanning Tree protocol

Configuration Management Functions

- Embedded element managers:
- HTTP server for WEB based management
 - Text terminal interface and Telnet server for CLI
 - SNMP agent
 - MIB Browser
 - Embedded configuration log
 - Support of Cisco Discovery Protocol for automatic network discovery

Performance Management Functions

- Embedded Real time performance collection:
- Management traffic statistics
 - Payload traffic statistics

Security Management Functions:

- 4 User levels with reconfigurable passwords per user (http / CLI)

Ref.: PB-SSPBg-2G-Ka-100W-1250W-18134

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ODU Output Power Specifications

Frequency Band (GHz)	5-6	7-8	11	13	15	18	23	26	28	32	38
Low Power (LP):											
QPSK / 8PSK	-	27	25	25	23	23	23	22		21	18
16 QAM / 32 QAM	-	22	21	21	21	21	20	19		18	16
64 QAM / 128 QAM / 256 QAM	-	-	-	-	-	-	-	-	-	-	-
Standard Power (SP):											
QPSK / 8PSK	-	27	26	26	26	25.5	24	23.5		22.5	22
16 QAM / 32 QAM	-	22.5	21.5	21.5	21.5	21.5	21	20.5		18.5	17.5
64 QAM / 128 QAM / 256 QAM	-	16.5	15.5	15.5	15.5	15.5	14.5	13.5		12.5	11.5
High Power (HP):											
QPSK / 8PSK	30	30	28	26	26	25.5	25	25	25	23	23
16 QAM / 32 QAM	28	28	26	23	23	22	22	22	22	21	20
64 QAM / 128 QAM / 256 QAM	24	24	21	18	18	17	17	17	17	16	16
Enhanced Power (EP):											
128 QAM	28	27	-	-	-	-	-	-	-	-	-

RFU Output Power Specifications

Frequency Band (GHz)	4	5	6	7	8	11
Frequency Range (GHz)	3.6 - 4.26	4.4 - 5.0	5.725 - 7.11	7.125 - 7.725	7.9 - 8.5	10.7 - 11.7
Channel Bandwidth (MHz)	3.5 to 56					
Transmitter	4	5	6	7	8	11
Tx High Power: *						
256 QAM	TBD	TBD	29.5	29.0	29.0	26.5
128 QAM	TBD	TBD	30.5	30.0	30.0	27.5
64 QAM	TBD	TBD	31.5	31.0	31.0	28.5
32 QAM	TBD	TBD	32.5	32.0	32.0	29.5
16 QAM	TBD	TBD	33.5	33.0	33.0	30.5
QPSK	TBD	TBD	34.5	34.0	34.0	31.5
Tx Very High Power: *						
256 QAM	37 (TBC)	36 (TBC)	32.5	31.5	31.5	31.5
128 QAM	TBD	TBD	33.5	33.5	32.5	32.5
64 QAM	TBD	TBD	34.0	34.0	33.0	33.0
32 QAM	TBD	TBD	34.5	34.5	34.0	34.0
16 QAM	TBD	TBD	35.0	35.0	34.5	34.5
QPSK	TBD	TBD	35.5	35.5	35.0	35.0
Tx Monitor	~30 dB sample of output signal					

* measured at antenna branching port

Rx Threshold Specifications

Frequency Band (GHz)	4-6	7-8	11	13	15	18	23	26	28	32	38
Modulation (Coding Rate):											
QPSK (3/4)	-88.6	-88.6	-89.1	-89.1	-89.1	-89.1	-88.6	-88.6	-88.1	-87.6	-86.6
8PSK (3/4)	-84.8	-84.8	-85.3	-85.3	-85.3	-85.3	-84.8	-84.8	-84.3	-83.8	-82.8
16QAM (3/4)	-83.2	-83.2	-83.7	-83.7	-83.7	-83.7	-83.2	-83.2	-82.7	-82.2	-81.2
32QAM (3/4)	-79.7	-79.7	-80.2	-80.2	-80.2	-80.2	-79.7	-79.7	-79.2	-78.7	-77.7
64QAM (5/6)	-76.6	-76.6	-77.1	-77.1	-77.1	-77.1	-76.6	-76.6	-76.1	-75.6	-74.6
128QAM (6/7)	-73.7	-73.7	-74.2	-74.2	-74.2	-74.2	-73.7	-73.7	-73.2	-72.7	-71.7
256QAM (7/8)	-70.5	-70.5	-71.0	-71.0	-71.0	-71.0	-70.5	-70.5	-70.0	-69.5	-68.5

Note: All indicated power values are in dBm. Threshold specifications are given for split type systems (with ODU) operating in 28 MHz wide RF channel with specific code rate and roll-off factor.

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Physical Specifications

Environmental Robustness	According to ETSI & IEC standards, CE marking and Bell Telecordia GR-63-CORE
EMC Immunity	IEEE STD C37.90.0-3 Certified

Dimensions:

Indoor Unit (IDU)	483x44x277 mm or 19x1.75x10.9inch, (1U) (WxHxD)
Outdoor RFU (ODU)	267x89x267 mm or 10.5x3.5x10.5inch (WxHxD, incl. handle)
Full-Indoor RFU	483x123x277 mm or 19x4.8x10.9inch, (<3U) (WxHxD)

Weight:

Indoor Unit (IDU)	< 3.2 kg or 7 lbs
Outdoor RFU (ODU)	< 5 kg or 11 lbs
Full-Indoor RFU	< 11 kg or 24 lbs

Temperature:

Indoor Unit (IDU)	-10 to +50 C
Outdoor Unit (ODU)	-33 to +55 C (full specification) -45C to +55C (operational) Up to +60C with solar shade
Radio Frequency Unit (RFU)	-5C to +55C

Electrical:

Power Consumption	100 W (typical split-mount), 120 W (typical full-indoor) for 1+0 terminal
Voltage Supply DC	+/-48 VDC
Voltage Supply AC	100/240 VAC (split-mount only)

ODU-IDU cable length	up to 300 m
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Transcend 800B Indoor Unit (IDU)
Version with ASI interface, 1PPS, 10 MHz clock for TV broadcast market

Ref.: PB-T800-1W0-LEZ007-18134

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