



Point to Point Radio Family

2.4 or 5.85GHz

PDH / Ethernet Convergent System

1xE1/T1 and 2xE1/T1



Reliability, Performance, Connectivity, Service

Features and Benefits:

- High quality Voice/ Data/ Video transmission
- Cost-effective alternative to traditional E1(T1) device
- 2 ports E1(t1) supported
- High reliability of radio link provides excellent BER
- Operate on 2.4GHz ISM band and 5.85GHz UNII bands with OFDM technology
- Employs Time Division Duplex (TDD) transmission, no need to plan and to allocate separate channels for the uplink and downlink data streams
- End to end transmission of multiple user services over packet switched networks
- Transparent Ethernet forwarding
- Support SNMP for remote monitor and management
- Window based utility provides user friendly interface to configure the IDE/ODU
- Rapid installation and easy configuration for deploying the link
- Enhanced Security and access control
- Power over Ethernet to ODU
- IP-68 rated weather-proof housing for ODU
- Flexible Configuration upgrade

RADLINK-2.4G or 5.85G-PDH-Ethernet-a9 series delivers up to 54Mbps air rate for Ethernet (Up to 6 Mbps throughput) and 2 ports E1 (T1) traffic (Net throughput 23Mbps). The system operates in 2.4 GHz ISM Band or 5.85 UNII Band.

RADLINK-2.4G or 5.85G-PDH-Ethernet-a9 employs Time Division Duplex (TDD) transmission. This technology simplifies the installation and configuration procedure. There is no need to plan and to allocate separate channels for the uplink and downlink data streams.

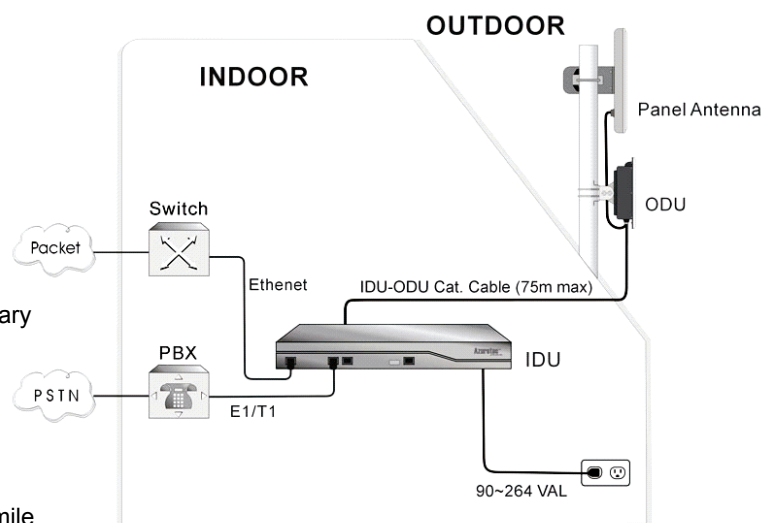
Operation over 2.4GHz and 5.85 GHz UNII bands is not affected by harsh weather conditions, such as fog, heavy rain etc.

RADLINK-2.4G or 5.85G-PDH-Ethernet-a9 series system offers more than just an attractive price-point per link and powerful performance characteristics. Easy of installation and alignment along with smart management capabilities make setup and configuration a snap.



Applications:

- Wireless Backup
- Emergency Services and Temporary Deployment
- Cellular Backhaul
- Telephony Extension
- Lossless Backhaul for Hot spots
- Interconnecting Multiple Legacy Services over Packet Networks
- Extension to MMDS and 3G last mile network



Basic Hardware Installation Figure

Point to Point Radio Family

2.4GHz or 5.85GHz E1/T1

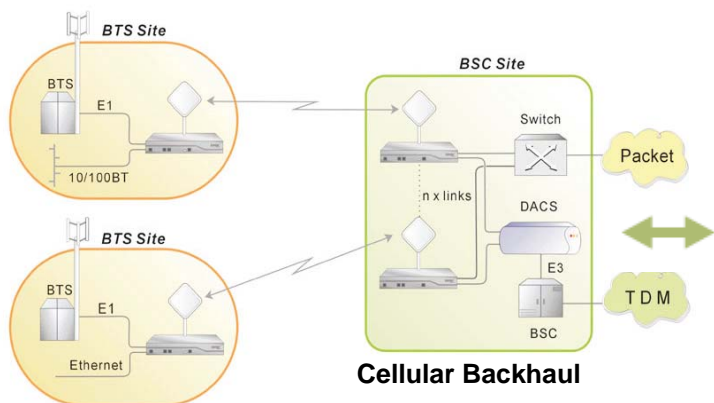
PDH / Ethernet Convergent System / 1xE1/T1 and 2xE1/T1

APPLICATIONS

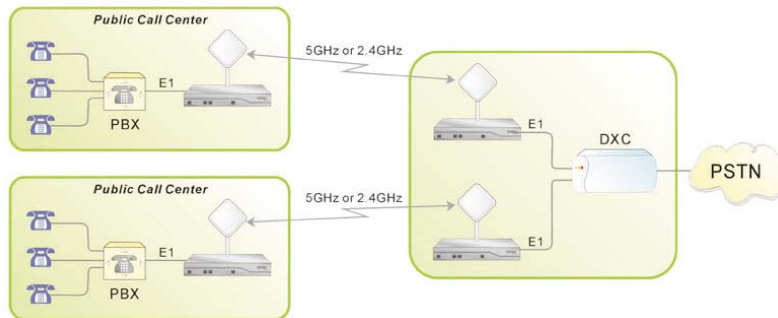
Telephone Services Extension to Remote / Rural Locations

In many remote parts of the developing world, where infrastructure is lacking, operators are establishing public call centers to provide basic telephony services.

The **RADTR-P2P-2.4G** or **5.85G-PDH-Ethernet-a9** series enable service providers to extend voice circuits to remote / rural sites.



Telephone Services Extension to Remote/ Rural Locations



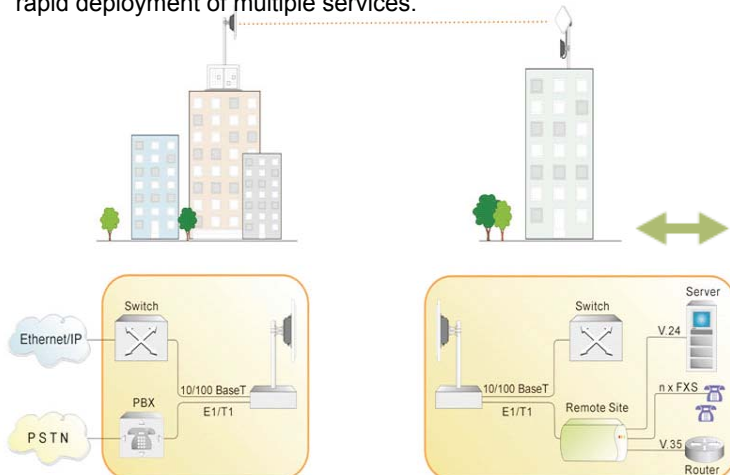
Cellular Backhaul

RADTR-P2P-2.4G or **5.85G-PDH-Ethernet-a9**

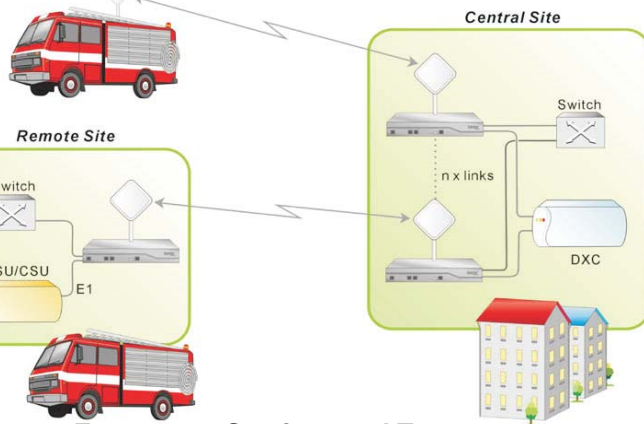
Together with the DXC, supports integration of cellular, monitoring and management traffic. Several Ares 2000-2s can be co-located at the BSC to handle incoming traffic from various remote sites and the DXC can aggregate the multiple E1/T1s for transport over E3/T3 or STM-1/OC-S circuits.

Emergency Services and Temporary Deployment

Establishing temporary communications links during an emergency situation is a classic wireless application. Simple setup, configuration and antenna alignment ensure rapid deployment of multiple services.



Telephony Extension



Emergency Services and Temporary

Telephony Extension

RADTR-P2P-2.4G or **5.85G-PDH-Ethernet-a9** offers a cost-effective solution for extending an E1 (T1) voice circuit up to 10 kilometers in a point-to-point application.

RADTR-P2P-2.4G or **5.85G-PDH-Ethernet-a9** is uniquely designed to handle all voice and data traffic while being virtually maintenance-free. The solution seamlessly connects the telephony and computer networking systems in one building to those in another building, thus creating one physical private network over airwaves. The PBXs are interconnected via E1 interface and the routers are interconnected via Ethernet interface.

Point to Point Radio Family

2.4GHz or 5.85GHz E1/T1

PDH / Ethernet Convergent System / 1xE1/T1 and 2xE1/T1

SPECIFICATIONS

CONFIGURATION		
Architecture	IDU: Indoor Unit: Multiplex XxE1/Architecture T1+Ethernet, Includes 24VDC PoE	
	ODU: Outdoor Unit: TDD Ethernet Radio	
IDU to ODU Interface	Outdoor CAT-5 cable: Maximum cable length: 75m	
RADIO		
Frequency bands	2.4GHz	2.400 – 2.4835 GHz
	5.8GHz	5.150 – 5.250 GHz (UNII 1 – Indoor -FCC)
		5.250 – 5.350 GHz (UNII 2 – Low Power -FCC)
		5.470 – 5.725 GHz (includes DFS / TPC – ETSI)
		5.725 – 5.850 GHz (UNII 3 – Standard -FCC)
Data Rate	Configurable up to 23 Mbps (bi-directional)	
Ethernet Throughput	Up to 6 Mbps	
Channel Bandwidth	20 MHz	
Duplex Technique	TDD	
Modulation	OFDM-BPSK, QPSK, 16QAM, 64QAM	
Transmit Power	23dBm max.	
Received Dynamic Range	> 60dB	
ETHERNET INTERFACE		
Type	10/100Base T Interface with Auto-negotiation (IEEE 802.3)	
Number of Ethernet Ports	1 (LAN Traffic Bandwidth Control), Up to 6 Mbps Throughput	
Framing / Coding	IEEE 802.3/U	
Bridging	Self-learning up to 2047 MAC addresses IEEE 802.1Q	
Traffic Handling	MAC layer bridging, self-learning	
Line Impedance	100 Ω	
VLAN Support	Transparent	
Connector	RJ-45	
E1/T1 INTERFACE		
Framing	Unframed (transparent)	
Number of E1(T1)	0, 1, 2	
Standard Compliance	G.703, G.826	
Timing	Independent Tx and Rx timing	
Line Code	E1: HDB3 @ 2.048 Mbps; T1: B8ZS/AMI @ 1.544Mbps	
Impedance	E1-120 Ω. Balanced; T1 – 100 Ω, Balanced	
Connector	RJ-45	
Jitter & Wander	According to G.823, G.824	
NETWORK MANAGEMENT		
Local Management	CLI / RS232, SNMP	
Remote Management	SNMP	
SNMP Agent	MIB II, Private MIB	
Security	User log on, MAC Access control list, WEP Encryption 40,128,152 bit	

Point to Point Radio Family

2.4GHz or 5.85GHz E1/T1

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SPECIFICATIONS

POWER and MOUNTING		
Power Input	100/240 VAC (+24VDC to ODU); Pwr Consumption = 20W/2.4G, 17W/5.8G	
Mounting	Pole or Wall for ODU, 19 in Rack (1Mtg Sp) or Desktop	
MECHANICS		
ODU Dimensions (includes integrated antenna)	335 (L) × 335 (W) × 81 (H) ; mm; (13.1(L) x 13.2(W) x 3.2(H) inches) Weight: 2.9 Kg; (6.4 lb)	
ODU (integrated antenna not included)	259 (L) x 250 (W) x 75 (H); mm; (10.2(L) x 9.8(W) x 3.0(H) inches) Weight: 1.8kg; (4.0 lb)	
IDU Dimensions	425 (L) x 256 (W) x 44.5 (H); mm; (16.8(L) x 10.1(W) x 1.75(H) inches) Weight: 2.9 Kg; (6.4 lb)	
INTEGRAL ANTENNA	5.85GHz	2.4GHz
Frequency Range	5150 – 5875 MHz	2400-24835 MHz
Gain	23 dBi or 20 dBi	18 dBi
Beam Width	10°	10°
Polarization	Linear, or Vertical	Linear, or Vertical
ENVIRONMENTAL		
Outdoor Unit Enclosure	IP-68 rated weather-proof enclosure	
ODU Operating Temperature Range	-20°C to +60°C; (-4°F~140°F)	
IDU Operating Temperature Range	-5.0°C to +55°C; (23°F~131°F)	
Storage Temperature Range	-30°C to +70°C, (-22°F~158°F)	
Humidity	Up to 90% non-condensing	

ORDERING INFORMATION	
RADLINK-P2P-2.4G-2354-I18	2.4GHz ISM band, 2xE1+1xEthernet Term. with 18 dBi Integral Ant, EIRP=41dBm
RADLINK-P2P-2.4G-2356-I18	2.4GHz ISM band, 2xT1+1xEthernet Term. with 18 dBi Integral Ant, EIRP=41dBm
RADLINK-P2P-5.85G-2354-I23	5GHz UNII band, 2xE1+1x Ethernet Term. with 23 dBi Integral Ant, EIRP=46dBm
RADLINK-P2P-5.85G-2356-I23	5GHz UNII band, 2XT1+1x Ethernet Term. with 23 dBi Integral Ant, EIRP=46dBm
RADLINK-P2P-2.4G-2354-EXT	2.4GHz ISM band, 2xE1, 1x Ethernet Terminal (ODU + IDU) for External Antenna
RADLINK-P2P-2.4G -2356-EXT	2.4GHz ISM band, 2xT1, 1xEthernet Terminal (ODU + IDU) for External Antenna
RADLINK-P2P-5.85G-2354-EXT	5GHz UNII band, 2xE1, 1x Ethernet Terminal (ODU + IDU) for External Antenna
RADLINK-P2P-5.85G-2356-EXT	5GHz UNII band, 2xT1, 1x Ethernet Terminal (ODU + IDU) for External Antenna

Note:

For 75 ohm Unbalanced E1 requires external impedance matching transformer.