

KymaStar / KymaLink

KSL Series 5.X/2.4GHz E1/T1 PDH / Ethernet Convergent System 4xE1 or T1

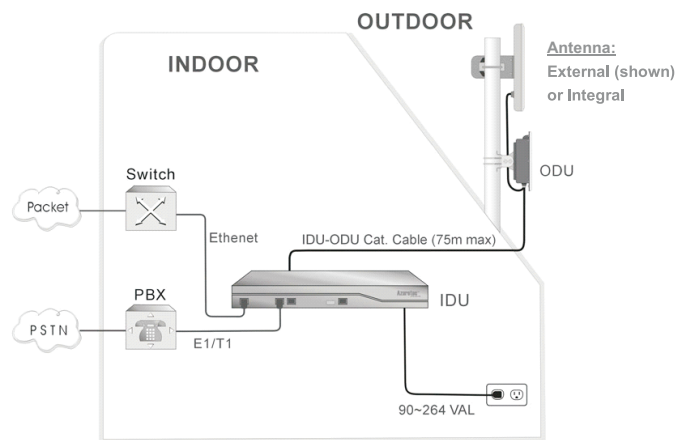


Features and Benefits

- High quality Voice / Data / Video transmission
- Cost-effective alternative to traditional E1(T1) devices.
- 4 ports of E1(T1) supported
- High reliability of radio link provides excellent BER
- Operate on 2.4GHz ISM band and/or 5GHz UNII bands with OFDM technology
- Employs Time Division Duplex (TDD) transmission
- 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 IDU/ODU
- Rapid installation and easy configuration for deploying the link.
- Enhanced Security and access control
- Power over Ethernet to ODU
- Flexible and Simple Structure for upgrading



KymaStar/KymaLink series delivers up to 54Mbps air rate for 4 ports E1 (T1) traffic and Ethernet (Up to 3 Mbps Throughput) (Net throughput >23Mbps). The system operates in 2.4 GHz ISM Band or 5.8 UNII Band. **KymaStar/KymaLink** 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.x GHz UNII bands provide stable operation in hard weather conditions (rain, snow, ice, dust, and etc). **KymaStar/KymaLink** series system offers more than just an attractive price, but provides excellent performances; easy installation and alignment, along with smart management capabilities that make setup and configuration a snap.



Basic Hardware Installation Figure

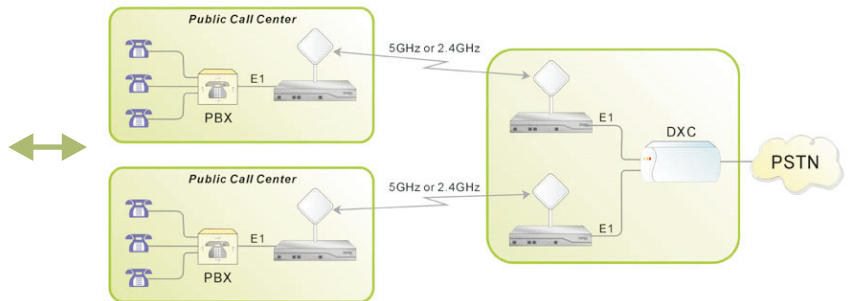
APPLICATIONS

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

APPLICATIONS

■ Telephone Services Extension to Remote / Rural Locations

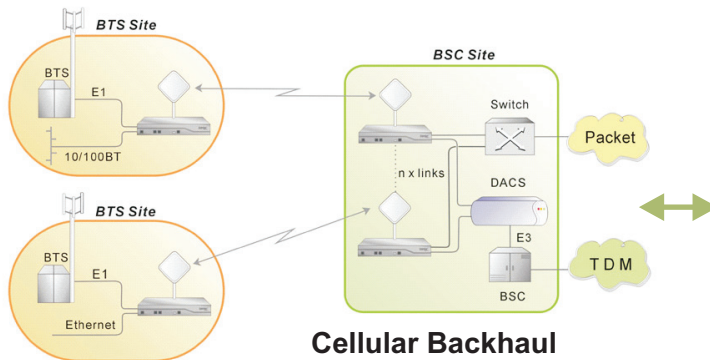
In many remote parts of the developing world, where infrastructure is lacking, operators are establishing public call centers to provide basic telephony services. The **KymaStar/KymaLink** series enables service providers to extend voice circuits to remote / rural sites.



Telephone Services Extension to Remote / Rural Locations

■ Cellular Backhaul

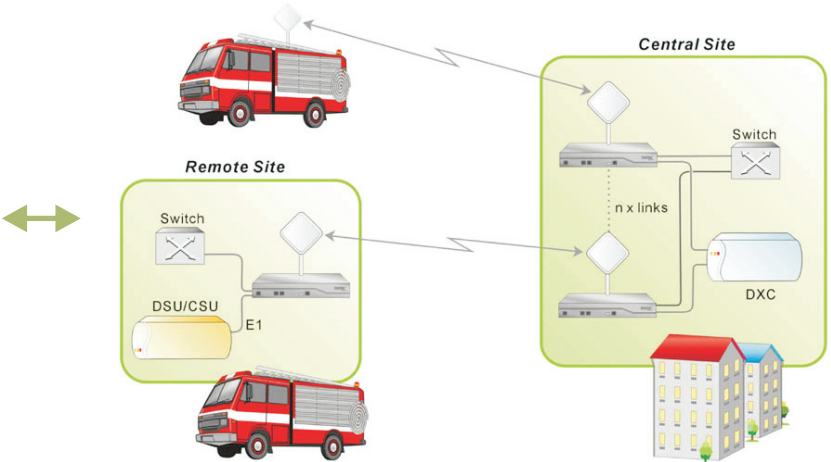
KymaStar/KymaLink, together with the DXC, supports integration of cellular, monitoring and management traffic. Several Ares 2000-2s can be co-located at the BSC to handle incoming traffic from various remote sites and the DXC can aggregate the multiple E1/T1s for transport over E3/T3 or STM-1/OC-S circuits.



Cellular Backhaul

■ Emergency Services and Temporary Deployment

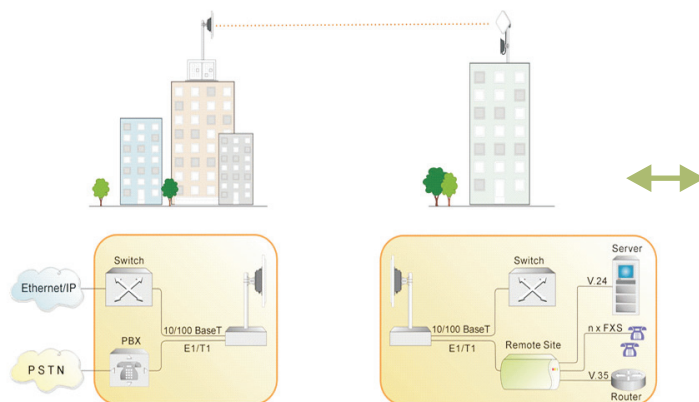
Establishing temporary communications links during an emergency situation is a classic wireless application. Simple setup, configuration and antenna alignment ensure rapid deployment of multiple services.



Emergency Services and Temporary Deployment

■ Telephony Extension

KymaStar/KymaLink offers a cost-effective solution for extending an E1 (T1) voice circuit up to 10 kilometers in a point-to-point application. **KymaStar/KymaLink** 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 the airwaves. The PBXs are interconnected via E1 interface and the routers are interconnected via Ethernet interface.



Telephony Extension



KSL Series 5.X/2.4GHz E1/T1 PDH / Ethernet Convergent System 4xE1/T1

SPECIFICATIONS

CONFIGURATION			
Architecture	IDU: Indoor Unit: Multiplex XxE1/T1+Ethernet, Includes 24VDC PoE		
	ODU: Outdoor Unit: TDD Ethernet Radio		
IDU to ODU Interface	Outdoor CAT-5 cable: Maximum cable length: 90m w/24VDC		
RADIO			
Frequency Bands	KS24-	2.400 – 2.4835 GHz	Customized to meet local regulatory requirements
	KS5X-	5.150 – 5.850 GHz	
Data Rate	Software Configurable		
E1/T1 Capacity	Up to 4 x E1/T1		
Ethernet Throughput	Up to 3 Mbps		
RF Channel Bandwidth	20 MHz		
Duplex Technique	TDD		
Modulation	OFDM-64QAM, 16QAM, QPSK, BPSK		
Transmit Power	23dBm (all RF bands)		
Received Dynamic Range	> 60dB		
ETHERNET INTERFACE			
Interface Type	10 / 100BaseT with Auto-negotiation		
Number of Ethernet Ports	1 (LAN Traffic Bandwidth Control), Up to 3 Mbps Throughput		
Framing / Coding	IEEE 802.3 / IEEE 802.3u		
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/T1INTERFACE			
Framing	Unframed (transparent)		
Number of E1(T1)	0, 1, 2, 3, or 4 E1/T1		
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			
Data Encryption	WEP 64,128/152 bits, AES-128 bit encryption		
	WPA-PSK, WPA		
Authorization	MAC Address Access Filter		
Other Features	Disable broadcasting SSID, Client Isolation (Layer 2 Isolation), Regatta mode		

SPECIFICATIONS



5.X GHz ODU with
23 dBi Integral Antenna



2.4 GHz ODU with
18 dBi Integral Antenna



ODU for
External Ant.
5 and 2.4 GHz



IDU for
4 xE1/T1 + Ethernet

POWER and MOUNTING		
Power Input	100/240 VAC (+24VDC PoE); Pwr Consumption = 21W/2.4G, 18W/5.8G	
Mounting	Pole or Wall for ODU, 19 inch (423mm) Rack (1Mtg Sp) or Desktop	
MECHANICS		
5.X GHz ODU Dimensions (includes 23 dBi integral 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)	
2.4 GHz ODU Dimensions (includes 18 dBi integral antenna)	330 (L) × 295 (W) × 91 (H) ; mm; (13.0(L) x 11.6(W) x 3.6(H) inches) Weight: 2.9 Kg; (6.4 lb)	
ODU Dimensions for External Antenna	259 (L) × 250 (W) × 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) × 256 (W) × 44.5 (H); mm; (16.8(L) x 10.1(W) x 1.75(H) inches) Weight: 2.9 Kg; (6.4 lb)	
INTEGRALANTENNA	KSL5X-	KSL24-
Frequency Range	5150 – 5875 MHz	2400-24835 MHz
Gain	23 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	-30°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*		
KSL24-2357-I18	2.4GHz ISM band, 4xE1 +1xEthernet Term. with 18 dBi Integral Ant, EIRP=41dBm	
KSL24-2359-I18	2.4GHz ISM band, 4xT1 +1xEthernet Term. with 18 dBi Integral Ant, EIRP=41dBm	
KSL5X-2357-I23	5GHz UNII band, 4xE1 +1x Ethernet Term. with 23 dBi Integral Ant, EIRP=46dBm	
KSL5X-2359-I23	5GHz UNII band, 4xT1 +1x Ethernet Term. with 23 dBi Integral Ant, EIRP=46dBm	
KSL24-2357-EXT	2.4GHz ISM band, 4xE1 , 1x Ethernet Terminal (ODU + IDU) for External Antenna	
KSL24-2359-EXT	2.4GHz ISM band, 4xT1 , 1xEthernet Terminal (ODU + IDU) for External Antenna	
KSL5X-2357-EXT	5GHz UNII band, 4xE1 , 1x Ethernet Terminal (ODU + IDU) for External Antenna	
KSL5X-2359-EXT	5GHz UNII band, 4xT1 , 1x Ethernet Terminal (ODU + IDU) for External Antenna	

NOTE: For 75 ohm Unbalanced E1 for external impedance matching transformer option contact **WNI Global Inc.** for ordering information.