



Outdoor Radio  
for External Antenna

## KymaStar

# KS09-2517-EXT 802.11 Type Ethernet Wireless Access Radio



## APPLICATIONS

- P-T-P, P-T-MP, or Bridge
- Near to Non-LOS deployment
- Remote Monitoring
- Embedded sensor data capturing
- SCADA (supervisory control & data acquisitions)
- Telecom / Police / Military
- LAN extension
- Mobile system
- VQoS

The **KymaStar KS09-XX17** series is a cost-effective point-to-point / point-to-multipoint solution for 900 MHz band, deployment of both backhaul and "last mile" solutions.

High Output Power with **OFDM** technology gives the ability for Near to Non Line of Sight deployment for distance of up to 50 Km. And the unique proprietary technique, **Regatta** mode improves throughput by 25 to 30% to over 26 Mbps in 20 MHz Band.

The **KymaStar KS09-XX17** series utilizes Time Division Duplex (**TDD**) technology allowing operation on a single channel. The **KymaStar** products are primarily designed to provide standard Ethernet interface in a wireless link between distant sites.

## Product Highlights

### ➤ FREQUENCY

This band does not interfere with the Licensed 900 MHz portion of the band.

### EFFECTIVE SPECTRUM UTILITY

**KymaStar KS09-XX17** series uses advanced technology (OFDM/TDD) to narrow the channel into smaller bandwidths than most other wireless radios. There are software selectable channel bandwidth of 5, 10, and 20 MHz.

### ➤ REGATTA MODE INCREASES THE PERFORMANCE UP TO 30%

Unique proprietary technique can enhance the throughput performance by 25% to 30%

### ➤ MANAGEABILITY

Through the Windows-based utilities **KymaStar KS09-XX17** series is fully manageable locally and remotely. In addition, built-in SNMP support lets the ISP or enterprise users expand the network infrastructure much more easily.

### ➤ RELIABILITY

**KymaStar KS09-XX17** series outdoor and indoor radios provide high reliability due to its stable and robust design.

### ➤ SECURITY

WEP 64/128/152 bits, AES-128, WPA-PSK, or WAP2 encryption, 802.1x Authentication (EAP), MAC Access control Authorization, disabling the broadcast SSID, and other security measures used in this product ensure highest security to prevent outside intervention.



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## SPECIFICATIONS



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RADIO			
Frequency Band	902 MHz ~ 928 MHz : 4 non overlapping channels at 5 MHz Channel. 2 / 10 MHz & 1 / 20 MHz.		
	CH1 : 908 MHz, CH3 : 918 MHz		
	CH 2 : 913 MHz, CH4 : 923 MHz		
Channel Bandwidth	Software selectable channel bandwidths ; 5, 10 and 20MHz		
	KS09-2517-EXT (320 mW)	Conditions for Path distance	
Transmit Power Output ; (at selected data rate with stated modulation technology)	20dBm ( $\pm 1.5$ dB) @ 54 Mbps, 64QAM	99.999% availability for $10^{-5}$ BER	
	21dBm ( $\pm 1.5$ dB) @ 48 Mbps, 64QAM	Yagi Antenna is 1.09 m, 30°, 14 dBi	
	22dBm ( $\pm 1.5$ dB) @ 36 Mbps, 16QAM	Grid Antenna is 1.2 m dim, 16.5°, 18 dBi	
	25dBm ( $\pm 1.5$ dB) @ 18 Mbps, QPSK	All other conditions are ideal LAB type conditions at $-25^{\circ}$ C temperature	
	25dBm ( $\pm 1.5$ dB) @ 6 Mbps, BPSK		
	KS09-2517-EXT Throughput	With 14 dBi Yagi	With 18 dBi Grid
Receiver Sensitivity ( $\pm 2$ dB) :	-72dBm @ 54 Mbps, 64QAM (20 MHz) 28 Mbps	7.9 Km	11.4 Km
(At $10^{-6}$ BER) in 5 MHz Band	-73dBm @ 54 Mbps, 64QAM, (5 MHz) 6.1 Mbps	10.0 Km	12.4 Km
Data Throughput in Regatta mode	-76dBm @ 36 Mbps, 16QAM 5.5 Mbps	10.5 Km	15.0 Km
	-84dBm @ 18 Mbps, QPSK 3.4 Mbps	17.2 Km	25.0 Km
	-92dBm @ 6 Mbps, BPSK 1.5 Mbps	25.0 Km	36.0 Km
SW Selectable Data Rate	802.11: 54/48/36/24/18/11/9/6/1 Mbps,		
Operating Mode	AP / Bridge / CPE		
Frequency Stability	$\pm 10$ ppm	Frequency Tolerance	$\pm 15$ ppm
Modulation	OFDM		
Range	Up to 65 Km. 6 Mbps with 18 dBi Grid antennas for 99.98% availability, 1.4 Mbps throughput.		
INTERFACES			
RF (antenna) Port Connector	Type N, female		
Ethernet	IEEE 802.3(10Base-T) / IEEE 802.3u(100Base-T)		
MANAGEABILITY			
Management and setup	Web-based		
SNMP agents	MIB II		
Protocol	TCP/IP, IPX/SPX, NetBEUI		
Operating System	Windows 98/2000/NT/XP		
Network Architecture	PTP / PTMP		
Data Bandwidth Control	VQoS /TDM; Up Link Speed Limiting to N x 64 Kbps		
SECURITY			
Data Encryption	WEP 64/128/152 bits, AES-128, WPA-PSK, or WPA 2 encryption		
Authorization	MAC Access Control		
Other Security Settings	Disable broadcast SSID		
	Client Isolation (Layer 2 Isolation)		
LED Indicators			
Power / Tx / Rx / Signal Strength (for KS09-3713-IDT Only)			
ENVIRONMENT			
Operating Temperature	ODU: $-30^{\circ}$ C to $+60^{\circ}$ C		
Storage Temperature	$-30^{\circ}$ C to $+70^{\circ}$ C		
Humidity	100% condensing (All weather protection)		
POWER SUPPLY			
AC 100-264V, DC 24V, 50-60Hz; Power Consumption for KS09-2517-E XT=9 Watts			
PHYSICAL			
	KS09-2517-EXT		
Dimension	259(L) x 250 (W) x 75 (H) mm;		
Weight	1.8 Kg (4 lb)		
WARRANTY			
1 year			
ORDERING INFORMATION			
KS09-2517-EXT	902-928MHz band 0.32W @ 64QAM Outdoor Radio with 4 non-overlapping 5 MHz channels		

