

Miniature OEM Wireless Digital Data Link

The all new Pico MIMO Digital Data Link is a miniature OEM, high power, 2x2 MIMO 2.4 GHz wireless OEM solution that provides the bandwidth and range needed for complex data intensive applications. The Pico MIMO DDL features 2x2 MIMO Digital Data Link, using Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding and Low-Density Parity Check (LDPC) to achieve robust RF performance. The pMDDL features secure & simultaneous Ethernet and Serial Data communications.

2X2 MIMO

Up to 25 Mbps

Small Footprint

Ethernet + Serial

PTP | Multipoint | Relay



pMDDL Features

- Robust 2X2 MIMO 2.4 GHz Operation
- Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding
- Low-Density Parity Check (LDPC)
- Up to 25 Mbps Iperf Throughput @ 8 MHz channel (-78 dBm)
Up to 2 Mbps IPerf Throughput @ 4 MHz channel (-102 dBm)
- Extremely small foot print and very lightweight
- Serial Communication Port
- Dual 10/100 Ethernet Ports (LAN/WAN)
- Supports Point-to-Point and Point-to-Multipoint Networks
- Master, Remote, Relay Operating Modes.
- Adjustable total transmit power (up to 1W)
- Interface through local console, telnet, and web browser
- Local and remote wireless firmware upgrading through FTP

Interface Options



Pico Motherboard

Specifications

Frequency		2.402 - 2.478 GHz	Optimal Performance Specifications					
Error Detection		32 bits of CRC, ARQ	Modulation	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	Total Tx Power (dBm) +/- 1dB		
Encryption (Requires Export Permit)		128-bit AES (Optional 256-bit)						
Ports		Serial Data/Console Ethernet USB RS232 TTL level (300bps to 921kbps) Dual 10/100BaseT IEEE802.3 (LAN/WAN) 2.0 (Future Development)	8 MHz (2X2 MIMO ON)					
Serial Data/Console Ethernet USB	RS232 TTL level (300bps to 921kbps) Dual 10/100BaseT IEEE802.3 (LAN/WAN) 2.0 (Future Development)		BPSK_1/2	3	-99.5	30dBm		
			QPSK_1/2	5.9	-98	30dBm		
		QPSK_3/4	8.8	-96	30dBm			
Firewall		Port Forwarding, Access Control, IP/MAC List.	16QAM_1/2	11.6	-92	30dBm		
Operating Modes		Point-to-Point, Point-to-Multipoint, Relay	16QAM_3/4	17.1	-90	30dBm		
Diagnostics		Remote Diagnostics, Ping, Traceroute, ARP table, DHCP active leases, IPerf, RSSI	64QAM_2/3	22.8	-85	30dBm		
Diagnostics	Remote Diagnostics, Ping, Traceroute, ARP table, DHCP active leases, IPerf, RSSI	64QAM_3/4	64QAM_3/4	25.5	-83.5	30dBm		
			64QAM_5/6	27.8	-81	30dBm		
Management		Local Serial Port Console, Telnet, WebUI, SNMP, FTP Upgrade, TFTP, CLI (Command Line Interface)	4 MHz (2X2 MIMO ON)					
Rejection		Excellent strong signal interference & rejection characteristics	BPSK_1/2	1.51	-102.5	30dBm		
Input Voltage	OEM Motherboard	Digital Voltage = 3.3V / RF Voltage = 5V 7 - 30 VDC	QPSK_1/2	2.98	-101	30dBm		
			QPSK_3/4	4.4	-99	30dBm		
			16QAM_1/2	5.8	-95.5	30dBm		
Connectors:		Antenna: UFL x2 (ANT1, ANT2) Data: 80 Pin SMT Antenna: UFL x2 (ANT1, ANT2) Data: RJ-45 x2 (Ethernet) Female DB9 (Serial) USB Type A Micro-AB USB (Console) 4 PIN Interlock (Vin)	16QAM_3/4	8.6	-93	30dBm		
OEM Motherboard	64QAM_2/3		11.4	-88	30dBm			
	64QAM_3/4		12.8	-86	30dBm			
OEM Motherboard	Antenna: UFL x2 (ANT1, ANT2) Data: RJ-45 x2 (Ethernet) Female DB9 (Serial) USB Type A Micro-AB USB (Console) 4 PIN Interlock (Vin)		64QAM_5/6	14	-83.5	30dBm		
			Environmental		Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing	8 MHz (MIMO OFF)	
Weight	OEM Motherboard		Approx. 7 grams Approx. 50 grams	BPSK_1/2			3	-96.5
		QPSK_1/2		5.8	-95	30dBm		
Dimensions		OEM Motherboard	Approx. 1.05" x 1.3" x .15" (27mm x 33mm x 4mm)	QPSK_3/4	8.6	-93	30dBm	
OEM Motherboard	Approx. 2.0" x 3.0" x 0.70" (50mm x 76mm x 18mm)			16QAM_1/2	11.5	-89	30dBm	
			16QAM_3/4	16.9	-87	30dBm		
64QAM_2/3	22.2		-82	28dBm				
Dimensions	OEM Motherboard	Approx. 1.05" x 1.3" x .15" (27mm x 33mm x 4mm) Approx. 2.0" x 3.0" x 0.70" (50mm x 76mm x 18mm)	64QAM_3/4	24.7	-80.5	28dBm		
			64QAM_5/6	27.4	-78	27dBm		
Approvals		FCC Industry Canada	4 MHz (MIMO OFF)					
Approvals	FCC Industry Canada		BPSK_1/2	1.5	-99.5	30dBm		
			QPSK_1/2	2.9	-98	30dBm		
			QPSK_3/4	4.3	-96	30dBm		
			16QAM_1/2	5.7	-92.5	30dBm		
			16QAM_3/4	8.4	-90	30dBm		
			64QAM_2/3	11.3	-85	28dBm		
Approvals	FCC Industry Canada		64QAM_3/4	12.5	-83	28dBm		
			64QAM_5/6	14	-80.5	27dBm		
Order Options								
pMDDL2450	MHK118500	2X2 MIMO 2.4 GHz OEM DDL Module (1W)	16QAM_1/2	5.7	-92.5	30dBm		
pMDDL2450LC	MHK118510	2X2 MIMO 2.4 GHz Low Cost DDL Module (25dBm)	16QAM_3/4	8.4	-90	30dBm		
pMDDL2450	MHK118500	2X2 MIMO 2.4 GHz OEM DDL Module (1W)	64QAM_2/3	11.3	-85	28dBm		
			64QAM_3/4	12.5	-83	28dBm		
pMDDL2450LC	MHK118510	2X2 MIMO 2.4 GHz Low Cost DDL Module (25dBm)	64QAM_5/6	14	-80.5	27dBm		

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