

Miniature OEM Wireless Digital Data Link

The all new pMDDL1621 is a miniature OEM, high power, wireless OEM solution that provides the bandwidth and range needed for complex data intensive applications. The pMDDL1621 offers software selectable operation in the 1.6 GHz, 1.8 GHz or 2.0 GHz frequency ranges. 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 pMDDL1621 features secure and simultaneous Ethernet and Serial Data Communications.

2X2 MIMO

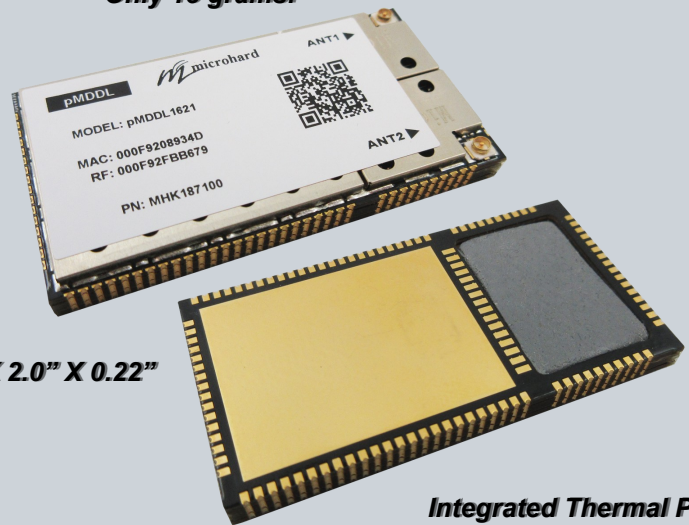
Up to 21 Mbps

Small Footprint

Ethernet + Serial

PTP | Multipoint | Relay

Only 15 grams!



1.05" X 2.0" X 0.22"

Integrated Thermal Pad!

pMDDL Features

- Robust 2X2 MIMO 1.6 GHz, 1.8 GHz or 2.0 GHz Operation
- Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding
- Low-Density Parity Check (LDPC)
- Up to 21 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

pMDDL1621 Motherboard



pMDDL1621 Enclosed



Specifications

Frequency (Software Selectable)	1625 to 1725 MHz 1780 to 1850 MHz 2020 to 2115 MHz	Optimal Performance Specifications				
		Modulation	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	Total Tx Power (dBm) +/- 1dB	
Error Detection	32 bits of CRC, ARQ	8 MHz (2X2 MIMO ON)				
Encryption (Requires Export Permit)	256-bit AES	BPSK_1/2	3.1	-99.5	30dBm	
		QPSK_1/2	6.0	-98	30dBm	
Ports Serial Data/Console Ethernet USB	RS232 TTL level (300bps to 921kbps) Dual 10/100BaseT IEEE802.3 (LAN/WAN) 2.0 (Future Development)	QPSK_3/4	8.4	-96	30dBm	
		16QAM_1/2	10.7	-92	30dBm	
		16QAM_3/4	14.8	-90	30dBm	
		64QAM_2/3	18.1	-85	30dBm	
Firewall	Port Forwarding, Access Control, IP/MAC List.	64QAM_3/4	19.0	-83.5	30dBm	
		64QAM_5/6	21.0	-81	30dBm	
Operating Modes	Point-to-Point, Point-to-Multipoint, Relay	4 MHz (2X2 MIMO ON)				
Diagnostics	Remote Diagnostics, Ping, Traceroute, ARP table, DHCP active leases, IPerf, RSSI	BPSK_1/2	1.57	-102.5	30dBm	
		QPSK_1/2	3.0	-101	30dBm	
Management	Local Serial Port Console, Telnet, WebUI, SNMP, FTP Upgrade, TFTP, CLI (Command Line Interface)	QPSK_3/4	4.3	-99	30dBm	
		16QAM_1/2	5.4	-95.5	30dBm	
Rejection	Excellent strong signal interference & rejection characteristics	16QAM_3/4	7.4	-93	30dBm	
		64QAM_2/3	7.8	-88	30dBm	
Input Voltage	OEM Enclosed Digital Voltage = 3.3V / RF Voltage = 5V 7 - 30 V _{DC}	64QAM_3/4	8.0	-86	30dBm	
		64QAM_5/6	10.0	-83.5	30dBm	
Connectors:	OEM	Antenna: UFL x2 (ANT1, ANT2) Data: 116 Pin SMT	Modulation			
	Enclosed	Antenna: RS-SMA Female x2 Data: RJ-45 x2 (Ethernet) Female DB9 (Serial) USB Type A Micro-AB USB (Console) 4 PIN Interlock (Vin)	IPerf Throughput (Mbps)			
Environmental Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing	Optimal MRC Sensitivity (dBm)			Total Tx Power (dBm) +/- 1dB	
		8 MHz (MIMO OFF)				
		BPSK_1/2	3.1	-96.5		30dBm
		QPSK_1/2	6.0	-95		30dBm
		QPSK_3/4	8.4	-93		30dBm
		16QAM_1/2	10.7	-89		30dBm
		16QAM_3/4	14.8	-87		30dBm
		64QAM_2/3	18.1	-82		28dBm
64QAM_3/4	19.0	-80.5	28dBm			
64QAM_5/6	21.0	-78	27dBm			
Weight	OEM Enclosed	Approx. 15 grams Approx. 240 grams	4 MHz (MIMO OFF)			
	Dimensions	OEM Enclosed	Approx. 1.05" x 2.0" x .22" (26.5mm x 51mm x 5.6mm) Approx. 3.20" x 3.50" x 1.15" (81mm x 88mm x 29mm)	BPSK_1/2	1.57	-99.5
QPSK_1/2		3.0	-98	30dBm		
QPSK_3/4	4.3	-96	30dBm			
16QAM_1/2	5.4	-92.5	30dBm			
16QAM_3/4	7.4	-90	30dBm			
64QAM_2/3	7.8	-85	28dBm			
64QAM_3/4	8.0	-83	28dBm			
64QAM_5/6	10.0	-80.5	27dBm			

Order Options

pMDDL1621	2X2 MIMO 1600-2100 MHz OEM DDL Module
pMDDL1621-ENC	2X2 MIMO 1600-2100 MHz Enclosed DDL Module

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