

## Quad-Band Wireless Digital Data Link

The all new pMDDL1622 is a miniature OEM, high power, Quad-Band wireless OEM solution that provides the throughput and range needed for complex data intensive applications. The pMDDL1622 offers software selectable operation in the 1.6, 1.8, 2.0, or 2.2 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 pMDDL1622 features secure and simultaneous Ethernet, USB and Serial Data Communications.

**2X2 MIMO**

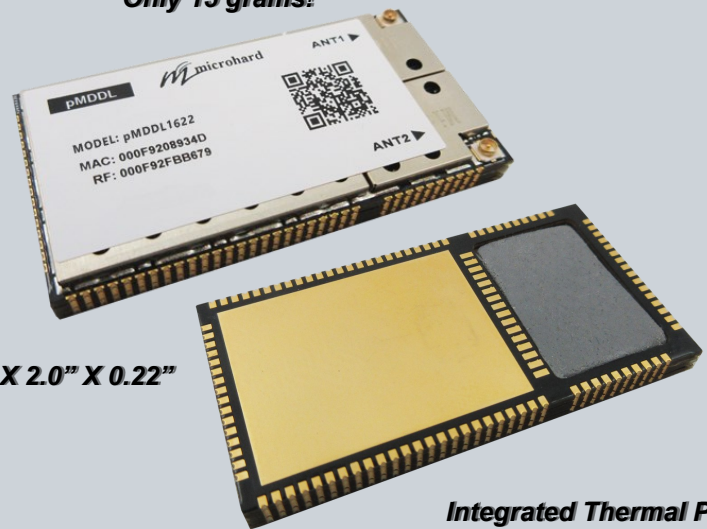
**Up to 21 Mbps**

**Quad-Band**

**Ethernet + Serial + USB**

**PTP | PMP | Relay | MESH**

**Only 15 grams!**



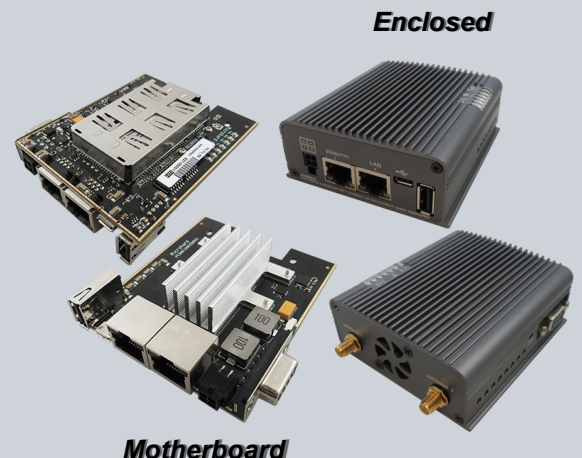
**1.05" X 2.0" X 0.22"**

**Integrated Thermal Pad!**

## pMDDL1622 Features

- Software Selectable 1.6, 1.8, 2.0, or 2.2 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 & USB Ports
- Dual 10/100 Ethernet Ports (LAN/WAN)
- Supports Point-to-Point and Point-to-Multipoint Networks
- Master, Remote, Relay Operating Modes.
- Adjustable transmit power (up to 2W total)
- Interface through local console, telnet, and web browser
- Local and remote wireless firmware upgrading through FTP

## Interface Options



**Enclosed**

**Motherboard**

# Specifications

## Optimal Performance Specifications

Modulation	MIMO ON					MIMO OFF				
	8MHZ Channel		4MHZ Channel		Total Tx Power +/- 1dB	8MHZ Channel		4MHZ Channel		Total Tx Power +/- 1dB
	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)		IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	
<b>Frequency Band: 1625 - 1725 MHz</b>										
BPSK_1/2	3.1	-99.5	1.57	-102.5	30dBm	3.1	-96.5	1.57	-99.5	30dBm
QPSK_1/2	6.0	-98	3.0	-101	30dBm	6.0	-95	3.0	-98	30dBm
QPSK_3/4	8.4	-96	4.3	-99	30dBm	8.4	-93	4.3	-96	30dBm
16QAM_1/2	10.7	-92	5.4	-95.5	30dBm	10.7	-89	5.4	-92.5	30dBm
16QAM_3/4	14.8	-90	7.4	-93	30dBm	14.8	-87	7.4	-90	30dBm
64QAM_2/3	18.1	-85	7.8	-88	30dBm	18.1	-82	7.8	-85	30dBm
64QAM_3/4	19.0	-83.5	8.0	-86	30dBm	19.0	-80.5	8.0	-83	30dBm
64QAM_5/6	21.0	-81	10.0	-83.5	30dBm	21.0	-78	10.0	-80.5	30dBm
<b>Frequency Band: 1780 - 1850 MHz</b>										
BPSK_1/2	3.1	-99.5	1.57	-102.5	30dBm	3.1	-96.5	1.57	-99.5	30dBm
QPSK_1/2	6.0	-98	3.0	-101	30dBm	6.0	-95	3.0	-98	30dBm
QPSK_3/4	8.4	-96	4.3	-99	30dBm	8.4	-93	4.3	-96	30dBm
16QAM_1/2	10.7	-92	5.4	-95.5	30dBm	10.7	-89	5.4	-92.5	30dBm
16QAM_3/4	14.8	-90	7.4	-93	30dBm	14.8	-87	7.4	-90	30dBm
64QAM_2/3	18.1	-85	7.8	-88	30dBm	18.1	-82	7.8	-85	30dBm
64QAM_3/4	19.0	-83.5	8.0	-86	30dBm	19.0	-80.5	8.0	-83	30dBm
64QAM_5/6	21.0	-81	10.0	-83.5	30dBm	21.0	-78	10.0	-80.5	30dBm
<b>Frequency Band: 2020 - 2110 MHz</b>										
BPSK_1/2	3.1	-99.5	1.57	-102.5	30dBm	3.1	-96.5	1.57	-99.5	30dBm
QPSK_1/2	6.0	-98	3.0	-101	30dBm	6.0	-95	3.0	-98	30dBm
QPSK_3/4	8.4	-96	4.3	-99	30dBm	8.4	-93	4.3	-96	30dBm
16QAM_1/2	10.7	-92	5.4	-95.5	30dBm	10.7	-89	5.4	-92.5	30dBm
16QAM_3/4	14.8	-90	7.4	-93	30dBm	14.8	-87	7.4	-90	30dBm
64QAM_2/3	18.1	-85	7.8	-88	30dBm	18.1	-82	7.8	-85	27dBm
64QAM_3/4	19.0	-83.5	8.0	-86	30dBm	19.0	-80.5	8.0	-83	27dBm
64QAM_5/6	21.0	-81	10.0	-83.5	29dBm	21.0	-78	10.0	-80.5	26dBm
<b>Frequency Band: 2200 - 2300 MHz</b>										
BPSK_1/2	3.1	-99.5*	1.57	-102.5*	30dBm	3.1	-96.5*	1.57	-99.5*	30dBm
QPSK_1/2	6.0	-98*	3.0	-101*	30dBm	6.0	-95*	3.0	-98*	30dBm
QPSK_3/4	8.4	-96*	4.3	-99*	30dBm	8.4	-93*	4.3	-96*	30dBm
16QAM_1/2	10.7	-92*	5.4	-95.5*	30dBm	10.7	-89*	5.4	-92.5*	28dBm
16QAM_3/4	14.8	-90*	7.4	-93*	30dBm	14.8	-87*	7.4	-90*	28dBm
64QAM_2/3	18.1	-85*	7.8	-88*	28dBm	18.1	-82*	7.8	-85*	25dBm
64QAM_3/4	19.0	-83.5*	8.0	-86*	28dBm	19.0	-80.5*	8.0	-83*	25dBm
64QAM_5/6	21.0	-81*	10.0	-83.5*	27dBm	21.0	-78*	10.0	-80.5*	24dBm

**Notes:**

\* Rx Sensitivity for frequency bands starting at 2280 MHz and higher, subtract 1.5 ~ 3 dBm (-1.5 @ 2280 MHz, -2 @ 2290 MHz, -3 @ 2300 MHz)

# Specifications

<b>Frequency (Software Selectable)</b>	1625 to 1725 MHz 1780 to 1850 MHz 2020 to 2110 MHz 2200 to 2300 MHz	<b>Weight</b>	OEM Enclosed	~15 grams ~275 grams
<b>Error Detection</b>	32 bits of CRC, ARQ	<b>Dimensions</b>	OEM Enclosed	~1.05" x 2.0" x .22" (26.5mm x 51mm x 5.6mm) ~3.20" x 3.50" x 1.35" (81mm x 88mm x 35mm)
<b>Encryption (Requires Export Permit)</b>	256-bit AES			
<b>Ports</b> Serial Data/Console Ethernet USB	RS232 TTL level (300bps to 921kbps) Dual 10/100 IEEE802.3 (LAN/WAN) 2.0	<b>Order Options</b>		
<b>Firewall</b>	Port Forwarding, Access Control, IP/ MAC List.	<b>MHK185410</b>	2X2 MIMO 1600-2300 MHz OEM	
<b>Operating Modes</b>	Point-to-Point, Point-to-Multipoint, Repeater, Mesh	<b>MHK185460</b>	2X2 MIMO 1600-2300 MHz Enclosed	
<b>Diagnostics</b>	Remote Diagnostics, Ping, Trac- eroute, ARP table, DHCP active leas- es, IPerf, RSSI			
<b>Management</b>	Local Serial Port Console, Telnet, WebUI, SNMP, FTP Upgrade, TFTP, CLI (Command Line Interface)			
<b>Rejection</b>	Excellent strong signal interference & rejection characteristics			
<b>Input Voltage</b>	OEM Digital Voltage = 3.3V / RF Voltage = 5V			
<b>Connectors:</b>	OEM Antenna: UFL x2 (ANT1, ANT2) Data: 116 Pin SMT			
	Enclosed Antenna: SMA Female x2 Data: RJ-45 x2 (Ethernet) Female DB9 (Serial) USB Type A Micro-AB USB (Console) 4 PIN Interlock (Vin)			
<b>Environmental</b> Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing			

## Contact Information

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Microhard  
150 Country Hills Landing N.W.  
Calgary, AB, Canada T3K 5P3

Email: [info@microhardcorp.com](mailto:info@microhardcorp.com)  
Tel: (403) 248-0028  
Fax: (403) 248-2762



[www.microhardcorp.com](http://www.microhardcorp.com)