

# pMDDL4000



## 3.2GHz to 4.8GHz S-Band + C-Band Wireless Digital Data Link

The pMDDL4000 combines both S and C bands covering 3200 to 4800 MHz. This includes a Dual Synthesizer Architecture which allows for independent Uplink and Downlink frequency. Very Robust off channel filtering with Frequency Hopping allow maximum RF immunity in Harsh RF environments. The Pico MIMO DDL features 2x2 MIMO, using Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding and Low-Density Parity Check (LDPC) to achieve robust RF performance. The pMDDL4000 features secure and simultaneous Ethernet, USB and Serial Data Communications.

**Only 15 grams!**



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

**New Dynamic Frequency Selection on OFDM overlay and Frequency Hopping provides robust interference and antijam immunity!**

**3.2 to 4.8 GHz (Software PGM)**

**Independent Uplink & Downlink Frequency**

**2X2 MIMO, > 40 Mbps**

**High Power (2W)**

**PTP | PMP | Relay | MESH**

**DFS + Frequency Hopping**

**MANET MESH / Advanced MESH**

## Features

- Software Selectable 3.2 - 4.8 GHz Frequency Operation
- Selectable Channel Bandwidth - 18MHz, 8MHz, 4MHz
- Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding
- Low-Density Parity Check (LDPC)
- Optional AES256 (Permit Required)
- Up to 21 Mbps Iperf Throughput @ 8 MHz channel (-78 dBm)  
Up to 2 Mbps IPerf Throughput @ 4 MHz channel (-102 dBm)
- Dual 10/100 Ethernet Ports (LAN/WAN)
- Point-to-Point, Point-to-Multipoint & MANET MESH Networks
- Master, Remote, Relay & MESH Operating Modes.
- Adjustable transmit power (up to 2W total)

**Available only to Qualified Customers under NDA**

**Enclosed**



**Motherboard**

**SWP Series**

◆ Video ◆ 2X2 MIMO ◆ Ethernet ◆ Serial ◆ USB

# Specifications



<b>Frequency (Software Selectable)</b>	3200 to 4800 MHz	<b>Connectors:</b> <b>OEM</b> Antenna: UFL x2 (ANT1, ANT2) Data: 116 Pin SMT <b>Enclosed</b> Antenna: SMA Female x2 Data: RJ-45 x2 (Ethernet) Female DB9 (Serial) USB Type A Micro-AB USB (Console) 4 PIN Interlock (Vin) <b>SWP</b> Antenna: 2x MMCX Power, Data: 10-Pin (GHR-10V-S)
<b>Error Detection</b>	32 bits of CRC, ARQ	
<b>Encryption (Requires Export Permit)</b>	256-bit AES	
<b>Ports</b>	<b>Serial Data/Console</b> RS232 TTL level (300bps to 230kbps) <b>Ethernet</b> Dual 10/100 IEEE802.3 (LAN/WAN) <b>USB</b> 2.0	
<b>Firewall</b>	Port Forwarding, Access Control, IP/MAC List.	
<b>Operating Modes</b>	Point-to-Point, Point-to-Multipoint, Repeater, MANET Mesh	
<b>Diagnostics</b>	Remote Diagnostics, Ping, Traceroute, ARP table, DHCP active leases, IPPerf, 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>	<b>OEM</b> Digital Voltage = 3.3VDC RF Voltage = 5VDC <b>Enclosed/SWP</b> 8-30 VDC	
<b>Environmental</b>		<b>Temperature</b> -40°F to 185°F (-40°C to +85°C) <b>Humidity</b> 5-95%, non-condensing
<b>Weight</b>		<b>OEM</b> ~15 grams <b>SWP</b> ~59 grams <b>Enclosed</b> ~275 grams
<b>Dimensions</b>		<b>OEM</b> 26.5 x 51 x 5.6mm <b>SWP</b> 36 x 66 x 16 mm <b>Enclosed</b> 81 x 88 x 35mm
<b>Order Options</b>		
<b>pMDDL4000</b>		3.2-4.8 GHz 2x2 2W MIMO DDL OEM
<b>pMDDL4000-ENC</b>		3.2-4.8 GHz 2x2 2W MIMO DDL Enclosed
<b>pMDDL4000-SWP</b>		3.2-4.8 GHz 2x2 2W MIMO DDL Miniature

## Optimal Performance Specifications

Modulation	MIMO ON						Total Tx Power* +/- 1dB
	18 MHz Channel		8 MHz Channel		4 MHz Channel		
	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	IPerf Throughput (Mbps)	Optimal MRC Sensitivity (dBm)	
BPSK_1/2	6	-96	3.1	-99.5	1.57	-102.5	33dBm
QPSK_1/2	12	-95	6.0	-98	3.0	-101	33dBm
QPSK_3/4	17	-93	8.4	-96	4.3	-99	33dBm
16QAM_1/2	21	-89	10.7	-92	5.4	-95.5	32dBm
16QAM_3/4	29	-87	14.8	-90	7.4	-93	32dBm
64QAM_2/3	36	-52	18.1	-85	7.8	-88	32dBm
64QAM_3/4	40	-80	19.0	-83.5	8.0	-86	32dBm
64QAM_5/6	43	-78	21.0	-81	10.0	-83.5	31dBm

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