pMDDL4000

3.2GHz to 5GHz S-Band + C-Band Wireless Digital Data Link

The pMDDL4000 combines both S and C bands covering 3200 to 5000 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 5.0 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 - 5.0 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**

◆ **V i d e o** ◆ **2 X 2 M I M O** ◆ **E t h e r n e t** ◆ **S e r i a l** ◆ **U S B**

Specifications

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Frequency (Software Selectable)	3200 to 5000 MHz
Error Detection	32 bits of CRC, ARQ
Encryption (Requires Export Permit)	256-bit AES
Ports Serial Data/Console / Ethernet / USB	RS232 TTL level (300bps to 230kbps) Dual 10/100 IEEE802.3 (LAN/WAN) 2.0
Firewall	Port Forwarding, Access Control, IP/MAC List.
Operating Modes	Point-to-Point, Point-to-Multipoint, Repeater, MANET Mesh
Diagnostics	Remote Diagnostics, Ping, Traceroute, ARP table, DHCP active leases, IPerf, RSSI
Management	Local Serial Port Console, Telnet, WebUI, SNMP, FTP Upgrade, TFTP, CLI (Command Line Interface)
Rejection	Excellent strong signal interference & rejection characteristics
Input Voltage OEM / Enclosed/SWP	Digital Voltage = 3.3VDC RF Voltage = 5VDC 8-30 VDC

Connectors:	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)
	SWP	Antenna: 2x MMCX Power, Data: 10-Pin (GHR-10V-S)
Environmental	Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing
Weight	OEM SWP Enclosed	~15 grams ~59 grams ~275 grams
Dimensions	OEM SWP Enclosed	26.5 x 51 x 5.6mm 36 x 66 x 16 mm 81 x 88 x 35mm

Order Options

pMDDL4000	3.2-5.0 GHz 2x2 2W MIMO DDL OEM
pMDDL4000-ENC	3.2-5.0 GHz 2x2 2W MIMO DDL Enclosed
pMDDL4000-SWP	3.2-5.0 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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