

Hexa-Band Wireless Digital Data Link

The pMDDL1624-SWP is a compact, enclosed, high power, Hexa-Band wireless solution that provides the throughput and range needed for complex applications. The pMDDL1624-SWP offers software selectable operation in six frequency bands between 1.6 and 2.5 GHz. Featuring 2x2 MIMO, Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding and Low-Density Parity Check (LDPC), the pMDDL1624-SWP delivers robust RF performance. The pMDDL1624-SWP provides simultaneous Ethernet and Serial Data Communications.



Only 59 grams!



36 x 66 x 16 mm

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

2X2 MIMO, Up to 21 Mbps

Hexa-Band Frequency

Dual Ethernet, USB, Serial

PTP | PMP | Relay | MESH

DFS & Frequency Hopping*

Robust & Compact Enclosure

Features

- Software Selectable 1.6, 1.8, 2.0, 2.2, 2.3 or 2.4 GHz Operation
- Maximal Ratio Combining (MRC), Maximal Likelihood (ML) decoding
- Low-Density Parity Check (LDPC)
- FIPS140-2 Compliant Pending
- 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)
- Supports Point-to-Point, Point-to-Multipoint & MESH Networks
- Master, Remote, Relay & MESH Operating Modes.
- Adjustable transmit power (up to 2W* total)
- Local and remote wireless firmware upgrading through FTP



**SWP Expander Board
& Interface Cable**

* In Frequency Hopping mode power is limited to 1W

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) | |
| Frequency Band: 1625 - 1725 MHz | | | | | | | | | | |
| BPSK_1/2 | 3.1 | -99.5 | 1.57 | -102.5 | 33dBm | 3.1 | -96.5 | 1.57 | -99.5 | 30dBm |
| QPSK_1/2 | 6.0 | -98 | 3.0 | -101 | 33dBm | 6.0 | -95 | 3.0 | -98 | 30dBm |
| QPSK_3/4 | 8.4 | -96 | 4.3 | -99 | 33dBm | 8.4 | -93 | 4.3 | -96 | 30dBm |
| 16QAM_1/2 | 10.7 | -92 | 5.4 | -95.5 | 33dBm | 10.7 | -89 | 5.4 | -92.5 | 30dBm |
| 16QAM_3/4 | 14.8 | -90 | 7.4 | -93 | 33dBm | 14.8 | -87 | 7.4 | -90 | 30dBm |
| 64QAM_2/3 | 18.1 | -85 | 7.8 | -88 | 32dBm | 18.1 | -82 | 7.8 | -85 | 30dBm |
| 64QAM_3/4 | 19.0 | -83.5 | 8.0 | -86 | 31dBm | 19.0 | -80.5 | 8.0 | -83 | 29dBm |
| 64QAM_5/6 | 21.0 | -81 | 10.0 | -83.5 | 30dBm | 21.0 | -78 | 10.0 | -80.5 | 28dBm |
| Frequency Band: 1780 - 1850 MHz | | | | | | | | | | |
| BPSK_1/2 | 3.1 | -99.5 | 1.57 | -102.5 | 33dBm | 3.1 | -96.5 | 1.57 | -99.5 | 30dBm |
| QPSK_1/2 | 6.0 | -98 | 3.0 | -101 | 33dBm | 6.0 | -95 | 3.0 | -98 | 30dBm |
| QPSK_3/4 | 8.4 | -96 | 4.3 | -99 | 33dBm | 8.4 | -93 | 4.3 | -96 | 30dBm |
| 16QAM_1/2 | 10.7 | -92 | 5.4 | -95.5 | 33dBm | 10.7 | -89 | 5.4 | -92.5 | 30dBm |
| 16QAM_3/4 | 14.8 | -90 | 7.4 | -93 | 33dBm | 14.8 | -87 | 7.4 | -90 | 30dBm |
| 64QAM_2/3 | 18.1 | -85 | 7.8 | -88 | 32dBm | 18.1 | -82 | 7.8 | -85 | 30dBm |
| 64QAM_3/4 | 19.0 | -83.5 | 8.0 | -86 | 31dBm | 19.0 | -80.5 | 8.0 | -83 | 29dBm |
| 64QAM_5/6 | 21.0 | -81 | 10.0 | -83.5 | 30dBm | 21.0 | -78 | 10.0 | -80.5 | 28dBm |
| Frequency Band: 2020 - 2110 MHz | | | | | | | | | | |
| BPSK_1/2 | 3.1 | -99.5 | 1.57 | -102.5 | 33dBm | 3.1 | -96.5 | 1.57 | -99.5 | 30dBm |
| QPSK_1/2 | 6.0 | -98 | 3.0 | -101 | 33dBm | 6.0 | -95 | 3.0 | -98 | 30dBm |
| QPSK_3/4 | 8.4 | -96 | 4.3 | -99 | 33dBm | 8.4 | -93 | 4.3 | -96 | 30dBm |
| 16QAM_1/2 | 10.7 | -92 | 5.4 | -95.5 | 33dBm | 10.7 | -89 | 5.4 | -92.5 | 30dBm |
| 16QAM_3/4 | 14.8 | -90 | 7.4 | -93 | 33dBm | 14.8 | -87 | 7.4 | -90 | 30dBm |
| 64QAM_2/3 | 18.1 | -85 | 7.8 | -88 | 32dBm | 18.1 | -82 | 7.8 | -85 | 30dBm |
| 64QAM_3/4 | 19.0 | -83.5 | 8.0 | -86 | 31dBm | 19.0 | -80.5 | 8.0 | -83 | 29dBm |
| 64QAM_5/6 | 21.0 | -81 | 10.0 | -83.5 | 30dBm | 21.0 | -78 | 10.0 | -80.5 | 28dBm |
| Frequency Band: 2200 - 2300 MHz | | | | | | | | | | |
| 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 |
| Frequency Band: 2300 - 2390 MHz | | | | | | | | | | |
| 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 |
| Frequency Band: 2400 - 2500 MHz | | | | | | | | | | |
| 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)

pMDDL1624-SWP Specifications



| | |
|--|--|
| Frequency (Software Selectable) | 1625 to 1725 MHz 1780 to 1850 MHz 2020 to 2110 MHz 2200 to 2300 MHz 2300 to 2390 MHz 2400 to 2500 MHz |
| Error Detection | 32 bits of CRC, ARQ |
| Encryption (Requires Export Permit) | 256-bit AES |
| Ports Serial Data/Console Ethernet USB | RS232 (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, 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 (AT Command Line Interface) |
| Rejection | Excellent strong signal interference & rejection characteristics |
| Input Voltage | 7 - 30 V _{DC} |
| Mating Connectors | Power, Data: 10-Pin (GHR-10V-S) Antenna(s): 2x MMCX |
| Environmental Temperature Humidity | -40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing |

| | |
|-------------------|------------------|
| Weight | ~59 grams |
| Dimensions | ~36 x 66 x 16 mm |

Order Options

| | |
|----------------------|----------------------------------|
| pMDDL1624-SWP | 2X2 MIMO Hexa-Band ENC Data Link |
|----------------------|----------------------------------|

Microhard Confidential

Preliminary



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