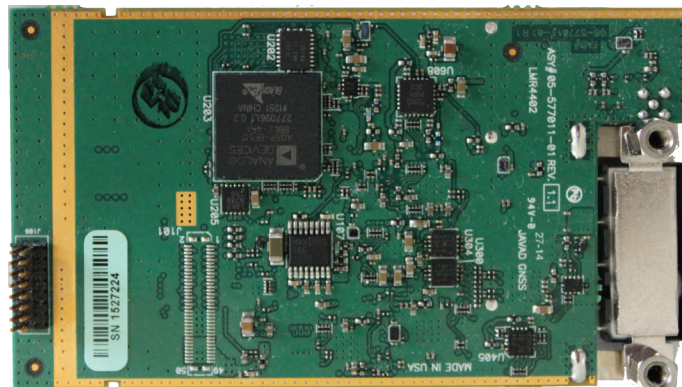


# JAVAD ARWEST



## HPT4402 OEM

DSP based OEM Radio Modem with Built-in wireless link Monitoring and Management Tools:

- Both Licensed and Unlicensed operation modes
- 16 miles / 26 km Maximum Distance Range
- Data Speed over the air 38400 bps at 25 kHz and 19200 bps at 12.5 kHz
- Programmable Output Power (30mW to 4W)
- Advanced Forward Error Correction (FEC)
- UART serial interface with RTS/CTS flow control support
- Data Speed over the serial port 9600 to 115200 bps
- Testing, monitoring and control of the unit over the air
- AlphaWave SuperScan® - automatic search and select for best frequency/channel

The HPT4402 radio transceiver provides a high-speed Point-to-Point and Point-to-Multipoint wireless data transfer at up to 38.4 kbps. HPT4402 supports user selectable modulation techniques (GMSK, 4FSK, DBPSK, DQPSK, D8PSK, or D16QAM), which allows the user to achieve the highest data speed for a given range (up to 8 miles). It also includes a selectable error correction, which improves the functioning of the radio modem under interference.

The unmatched features of HPT4402 include data scrambling, frequency hopping, user selectable transmit output power level, low power consumption sleep modes, autoscanning for base and plug-and-play installation for remote terminals. HPT4402 supports two separate Application Data and Maintenance modes of single UART serial port. The built-in software tools provide the wireless link testing, units' status and error statistics monitoring as well as units' settings change over the air. The software of the HPT4402 radio transceiver resides in a flash memory.

The updating of the radio transceiver programs is entirely software-based. The flash memory is re-programmable through an UART interface or over the air.

# HPT4402 OEM

## Main Features

- Input Voltage : 5.8V+-0.3V for 1.0W TPO  
6.8V+-0.3V for 2.0W TPO
- Power Consumption : 1.5W – receive mode  
6W for 1.0W TPO
- Operation Temperature: -40°C ... +70°C
- Storage Temperature: -40°C ... +85°C
- Dimensions: in (80x46.5 x7.6/9.5 mm)
- Weight: 0.09 lbs (41 g)
- DSP-Modem
- Multi-Modulation Technologies
- Zero-IF Technologies
- 406 - 470 MHz Frequency Range
- Up to 115200 bps Data Rate
- Embedded Firmware Compensation for Operation and Extremely Low at High Temperatures
- Compact Design

## External Connectors

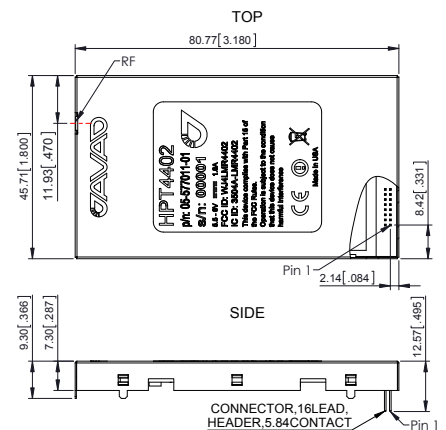
- J500: RF Antenna Input / Output Connector: MMCX RIGHT ANGLE PCB JACK, EMERSON JOHNSON 135-3701-311
- Main Connector (J1): 16-Lead Header Connector, 5.84 MM, COMM CON inc. 3913-16G2

Compliance	
FCC	FCC Part 90
Industry Canada	RSS-210
ETSI	ETSI EN 300 113-2, ETSI EN 301 489-1, ETSI EN 301 489-5

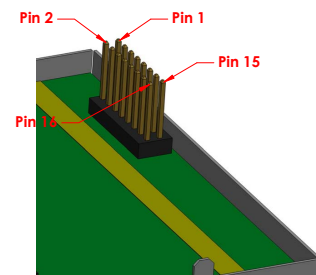
Radio Transmitter Specification	
Transmitter Output Power	+15... +33 dBm in 1 dB step / 50 Ω
Carrier Power Stability	+1 dB / -2 dB
Radio Transceiver Specification	
Frequency Range	406 - 470 MHz
Channel Spacing	25/20/12.5/6.25 kHz
Carrier Frequency Stability	±1 ppm
Modulation	GMSK/4FSK/DBPSK/DQPSK/D8PSK/D16QAM
Communication Mode	Half duplex, simplex
Radio Receiver Specification	
Receiver Sensitivity for DBPSK (BER 1x 10 <sup>-4</sup> )	-113 dBm for 25 kHz Channel Badwidth -113 dBm for 20 kHz Channel Badwidth -114 dBm for 12.5 kHz Channel Badwidth -114 dBm for 6.25 kHz Channel Badwidth
Receiver Sensitivity for DQPSK (BER 1x 10 <sup>-4</sup> )	-110 dBm for 25 kHz Channel Badwidth -110 dBm for 20 kHz Channel Badwidth -111 dBm for 12.5 kHz Channel Badwidth -111 dBm for 6.25 kHz Channel Badwidth
Receiver Dynamic Range	-119 to -10 dBm
Modem Specification	
Interface DSP	UART (serial port)
Interface Connector	32-lead Connector
Data Speed of Serial Interface	9600 - 115200 bps
Data Rate of Radio Interface (25/20/12.5/6.25 kHz Channel Bandwidth)	9600/7500/4800/2400 bps – DBPSK/GMSK 19200/15000/9600/4800 bps – DQPSK 28800/22500/14400/7200 bps – D8PSK 38400/30000/19200/9600 bps – D16QAM
Forward Error Correction (FEC)	Reed-Solomon Error Correction
Data scrambling	Yes

## Main Connector Pinout

Pin #	Signal Name	Signal Type	I/O	Comments
1	GND	GND	-	Signal and Chassis Ground
2	UART_RX-IN	TTL Input	TTL Input	Receive Data, serial data input.
3	UART_TX-OUT	TTL Output	TTL Output	Transmit Data, serial data output. Internal 22K pull-up.
4	UART_DSR-IN	TTL Input	TTL Input	Data Set Ready. Internal 47K pull-up.
5	UART_RTS-OUT	TTL Output	TTL Output	Request to Send. This signal is asserted (logic '0', positive voltage) to prepare the DCE device for accepting transmitted data from the DTE device. When the DCE is ready, it acknowledges by asserting Clear to Send. Internal 22K pull-up.
6	SLEEP	TTL Input	TTL Input	Sleeps/wakes Radio. In sleep mode, all radio functions are disabled consuming less than 500uA. At wake up, any user programmed configuration settings are refreshed from flash memory, clearing any temporary settings that may have been set: <ul style="list-style-type: none"> <li>• (3.3v) = Sleep Radio</li> <li>• (0v) = Wake Radio</li> </ul> An internal 20K pull-down enables Wake Radio if this signal is left unconnected.
7	UART_DCD-OUT	TTL Output	TTL Output	Data Carrier Detect
8	UART_CTS-IN	TTL Input	TTL Input	Clear to Send. This signal is asserted (logic '0', positive voltage) by the DCE device to inform the DTE device that transmission may begin. Internal 47K pull-down.
9	UART_DTR-OUT	TTL Output	TTL Output	Data Terminal Ready
10	RES_CONT	TTL Input	TTL Input	Resets the radio (Active Low = 0v)
11	TTL_OUT1	TTL Output	TTL Output	TTL Output Line 1
12	TTL_OUT2	TTL Output	TTL Output	TTL Output Line 2
13	GND	GND	-	Signal and Chassis Ground
14	TTL_IN	TTL Input	TTL Input	An internal 47K pull-up TTL Input
15-16	PWR	Power	External	Positive +5.5V..6V DC from external Power Supply



All dimensions in mm



Specifications are subject to change without notice

900 Rock Avenue, San Jose, CA 95131  
Tel+1 408 770 1790 Fax: +1 408 770-1799  
Email: sales@arwestcom.com © 2014 ArWest Corp.

Rev.1.1 February 26, 2015