

# JAVAD ARWEST

## Euro Radio



Euro Radio OEM board is the up-to-date unsurpassed 1 W UHF radio transceiver with built-in quad band GSM/GPRS module. The unmatched features of Euro Radio OEM board include:

- 8 miles (13 km) maximum distance range
- GSM/GPRS quad band 850/900/1800/1900 module
- Data speed over the air 38400 bps at 25 kHz and 19200 bps at 12.5 kHz
- Programmable Output Power (30 mW to 1 W)
- Advanced Forward Error Correction (FEC)
- 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 Euro radio OEM transceiver provides a high-speed point-to-point and point-to-multipoint wireless data transfer at up to 38.4 kbps. The firmware supports user selectable modulation techniques, which allows the user to achieve the highest data speed for a given range. It also includes a selectable error correction, which improves the functioning of the radio modem under interference. The sophisticated features of Euro Radio 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.

The firmware of the Euro Radio radio modem resides in a flash memory. The updating of the radio modem programs is entirely software-based. The flash memory is re-programmable through an RS-232 interface. Accessing to the internet via GSM/GPRS module the Euro Radio provides remote CLI access and can be configured remotely if corresponding operation mode is selected.

# Euro Radio

## General Specifications

- Input Voltage: +5.5 to +36 VDC normal
- Power Consumption (average):
  - 5.0W - transmit mode with 50% duty cycle (1W TPO)
  - 1.2W - receive mode; 1.5W - GSM mode
- Current Consumption (maximum): 1.4A at 5.5V
- Operation Temperature: -40°C ... +70°C
- Storage Temperature: -40°C ... +85°C
- Dimensions: L: 100 mm x W: 121 mm x H: 13.33 mm
- Weight: 115 g

## Features

- DSP-Modem
- Multi-Modulation Technologies
- Zero-IF Technologies
- Up to 115200 bps Data Rate
- Embedded Firmware Compensation for Operation at Extremely Low and High Temperatures
- Compact Design

## External Connectors

**RF Connector :** J201 is Antenna Input / Output Connector : MMCX Jack, MICROMATE Edge Mount ; AMPHENOL P/N 908-22100

**Main Connector (J100) :** 32X2, DIN41612, Type B, Male, TYCO P/N: 5536052-5

Description	I/O	Signal Name	Pin#	Pin#	Signal Name	I/O	Description
GND	GND	GND	A1	B1	GND	GND	GND
	-	Not connected	A2	B2	Not connected	-	
Active high	I	PWR_ON	A3	B3	RX_IN	I	RS232 data in
	-	Not connected	A4	B4	Not connected	-	
	-	Not connected	A5	B5	CTS_IN	I	RS232 CTS in
	-	Not connected	A6	B6	Not connected	-	
	-	Not connected	A7	B7	Not connected	-	
	-	Not connected	A8	B8	TX_OUT	O	RS232 data out
	-	Not connected	A9	B9	RTS_OUT	O	RS232 RTS out
	-	Not connected	A10	B10	Not connected	-	
	-	Not connected	A11	B11	Not connected	-	
	-	Not connected	A12	B12	Not connected	-	
	-	Not connected	A13	B13	Not connected	-	
LED	O	RED	A14	B14	Not connected	-	
LED	O	GRN	A15	B15	Not connected	-	
	-	Not connected	A16	B16	Not connected	-	
GND	GND	GND	A17	B17	Not connected	-	
	-	Not connected	A18	B18	Not connected	-	
	-	Not connected	A19	B19	Not connected	-	
	-	Not connected	A20	B20	Not connected	-	
	-	Not connected	A21	B21	Not connected	-	
	-	Not connected	A22	B22	Not connected	-	
+ (5.5... 36)V	PWR	PWR_IN	A23	B23	GND	GND	GND
+ (5.5... 36)V	PWR	PWR_IN	A24	B24	GND	GND	GND
	-	Not connected	A25	B25	Not connected	-	
	-	Not connected	A26	B26	Not connected	-	
	-	Not connected	A27	B27	Not connected	-	
	-	Not connected	A28	B28	Not connected	-	
	-	Not connected	A29	B29	Not connected	-	
RS232 DSR in	I	DSR IN	A30	B30	Not connected	-	
	-	Not connected	A31	B31	Not connected	-	
	-	Not connected	A32	B32	Not connected	-	

## Radio Transmitter Specifications

Component	Details
Transmitter Output Power	+15... +30 dBm in 1 dB step / 50 Ω
Carrier Power Stability	+1 dB / -2 dB

## Radio Transceiver Specifications

Component	Details
Frequency Range	406 - 470 MHz (EU) 406.1 - 470 MHz (USA) 406.1 - 430; 450 - 470 MHz (Canada)
Channel Spacing	25/12.5/6.25 kHz (USA for 406-420 MHz) 12.5/6.25 kHz (USA for 421-470 MHz) 25/12.5/6.25 kHz (Canada) 25/20/12.5 kHz (EU)
Carrier Frequency Stability	±1 ppm
Modulation	GMSK/4FSK/DBPSK/DQPSK/D8PSK/D16QAM
Communication Mode	Half duplex, simplex

## Radio Receiver Specifications

Component	Details
Receiver Sensitivity	-116 dBm 25kHz / -117 dBm 12.5kHz (BER 1x10 <sup>-4</sup> ; 25kHz CS)
	DQPSK -115 dBm 25kHz / -116 dBm 12.5kHz D8PSK -110 dBm 25kHz / -111 dBm 12.5kHz D16QAM -106 dBm 25kHz / -107 dBm 12.5kHz GMSK -113 dBm 25kHz / -114 dBm 12.5kHz
Receiver Dynamic Range	-115 to -15 dBm
Max. Input Signal Level	-10 dBm
Adjacent Channel Selectivity	70 dB for 25 kHz Channel Spacing 70 dB for 20 kHz Channel Spacing 60 dB for 12.5 kHz Channel Spacing 50 dB for 6.25 kHz Channel Spacing

## G24 GSM Module Specification

Parameter	Specification
Operating Systems	Quad band: 850/900/1800/1900 MHz
Tx power	850/900 MHz – Class 4 (2 Watt) 1800/1900 MHz – Class 1 (1 Watt)
Typical RX sensitivity	-106dBm (4dB margin on top of spec)
GPRS	Multi-slot class 10 (4 down; 2 up; 5 Total) Max BR 85.6 Kbps Class B GSM 07.10 multiplexing protocol Coding scheme CS1-CS4 Embedded TCP/IP and UDP/IP protocol stack Embedded FTP Embedded SMTP/POP3 – e-mail SSL – Secure Connection
EDGE – Model Dependent	Multi-slot class 10 (4 Down; 2 Up; 5 Total) Max BR Downlink 236.8 Kbps (Over RS232) Coding Scheme MCS1-MCS9
CSD	Max BR 14.4 Kbps
SMS	MO/MT Text and PDU modes Cell broadcast
One serial port	Data and Command port
UART	BR from 300 bps to 460 Kbps, Auto BR
SIM Card	3.0 V, STK 3.1
Connectors	RF MMCX
Regulatory and Approvals	FCC, IC, CCC, FTA, PTCRB, R&TTE GCF, EMC, QS9000 manufacturing, RoHS/WEEE

## Compliance

Parameter	Specification
FCC	Part 90
Industry Canada	RSS-119
R&TTE	ETSI EN 300 113-2; ETSI EN 301 489-5; EN 60950-1:2006

Specifications are typical and subject to change without prior notice

