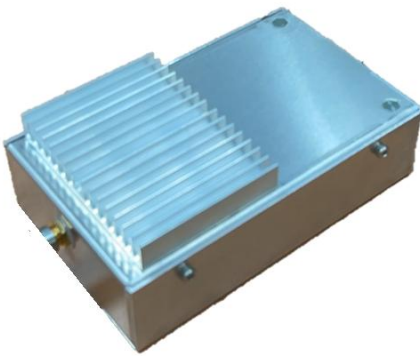




HRM-110

Narrow Band Radio Modem

Ultra-Long Range Telemetry, Command & Control Solution for UAV/USV



**300+KM Long
Range Telemetry
Data Link for
UAV/USV**

The HRM-110 is a high-powered radio modem engineered for long-range serial communication, with reported ranges exceeding 300 km.

The HRM-110 delivers a robust and extended communication link capable of transmitting various types of data, including telemetry, command, and control signals, making it ideal for UAV and USV applications.

System Features

- Long-range data link capable of transmitting more than 100 km depending on parameter settings and antennas.
- Transparent UART ports, compatible with all existing UART protocols
 - MAVLink
 - Modbus-RTU, Modbus-ASCII
 - Pelco-P/-D Protocols
- One S-bus interface, simultaneous support for MAVLink and S-bus RC
- Maximum air data rate: 200+ kbit/s.
- AES256 encryption.
- Modulation: 2/4 (G)FSK with fully configurable shaping, OQPSK DSSS, (G)MSK, OOK
- Frequency hopping supported
- Programmable channel frequency within a wide operating band
- Programmable bandwidth: 50~500 kHz
- Supports Point-to-Point, Point-to-Multipoint, Store and Forward Repeater
- Programmable transmit power: 100mW - 4W



- 32 bits of CRC, selectable Forward Error Correction with retransmission

Order Information:

Model	Features
HRM-110-470	Optimized operation band: 470~490 MHz Built-in 4 W PA (36dBm)
HRM-110-500	Optimized operation band: 500~520 MHz Built-in 4 W PA (36dBm)
HRM-110-1200	Optimized operation band: 1200~1300 MHz Built-in 2 W PA (33dBm)
HRM-110-2400	Optimized operation band: 2400~2800 MHz Built-in 4 W PA (36dBm)
HRM-110-Customization*	Optimized operation band: Custom, 100 MHz~6 GHz Power Amplifier: 1~30W

***Note: Custom design models.**

****HIDES can provide custom design for any other frequency band support.**

Table 1. Parameters

Parameters		
RF Frequency (Optimized band) (Tuning step: 1 kHz)	HRM-110-470	470-490 MHz
	HRM-110-500	500-520 MHz
	HRM-110-1200	1200-1300 MHz
	HRM-110-2400	2400-2800 MHz
	HRM-110-(Custom Design)	100MHz~6GHz
Bandwidth		150 kHz for 115,200 bps air rate (FEC disabled) 250 kHz for 230,400 bps air rate (FEC disabled)
Modulation		2/4 (G)FSK OQPSK DSSS, (G)MSK, OOK
Output power		Up to 36 dBm(4W)*

*Higher power PA available on demand for custom design

System Specifications

Data & Power

Data Rate	Up to 200+ kbps
Connectors	RF: IPEX & SMA 50 Ohm UART pin header S-bus pin header RS-232/422/485
Installation and management	Plug-and-play installation; Local LED management display
Power Consumption	PA off (Rx only): 24V/42mA (1W) PA (Tx@33dBm): 24V/175mA(4.2W) PA (Tx@36dBm): 24V/520mA(12.5W)
Power Adaptor	DC 9~35V

General

Display and indicators

Compliance IEEE 802.3at, RoHS.

Operating conditions -10 °C to 70 °C
Humidity max. 95% RH (non-condensing)

Storage conditions -40 °C to 74 °C (-40 °F to 165 °F)

Dimensions 105 × 65 × 28 mm w/ enclosure and heat sink
PCBA 85 × 60 × 12 mm w/o enclosure & heat sink

Weight 145 g w/ enclosure and heat sink
PCBA 30 g w/o enclosure & heat sink

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