

# HS-MX6208GT User Manual

Version 1.5

# HS-MX6208GT

## Multi-Functional AIS Transceiver

Version 1.5(Updated by Sep2025)

### 1. Product Overview

The HS-MX6208GT is a multifunctional AIS automatic identification system black box terminal independently developed by our company. It features a built-in high-precision positioning system to meet the demands of next-generation Class B AIS vessel navigation and communication, smart maritime search and rescue alarms, smart buoys and navigation aids (including physical and virtual aids), smart marine fisheries, inland river bridge collision avoidance, offshore wind power and construction electronic fencing, integrated smart navigation lights, and portable AIS base station equipment. It provides critical and effective navigation and communication support for collision avoidance alerts on small and medium-sized vessels, maritime distress search and rescue, vessel monitoring and management along shipping routes, and vessel operators.

The HS-MX6208GT employs a dedicated AIS digital signal processor chip, based on a highly integrated, low-power, low-cost SDR software-defined radio design architecture. It supports 2W CSTDMA and 5W SOTDMA operating modes, delivering optimal AIS reception and transmission performance. Its high sensitivity enables detection of more AIS information and targets across the maximum range. Simultaneously, it enables seamless connection of AIS data streams to any mobile device or PC, effectively meeting diverse application scenarios, various installation

environments, and the AIS functionality requirements of different users.



Figure 1 Product Photo

## 2. Features and Specifications

- Built-in a high-precision positioning system, expandable to support Beidou-3 short message data transmission.
- Utilizes high-performance dedicated AIS signal processing SoC chip.
- Integrated full-protocol stack Class B and B+ AIS transponder.
- Supports 2W CSTDMA and 5W SOTDMA low and high-level output power.
- Excellent sensitivity down to -119dBm for receiving long-range vessel and other AIS information.
- Compliant with technical requirements of AIS Type I/II/III buoy products.
- Supports automatic reception and rapid processing of transmissions from other vessels, VTS shore stations, airborne, and satellite AIS.
- Receives and parses position, heading, speed, and other data, encapsulating it in standard AIS message formats.
- Compliant with IEC 60945, IEC 62287-1/2, IEC 61162-1/2, IEC 61108-1/2, IEC 62320-2, and ITU-R M1371-5 standards.
- Ultra-compact dimensions (144mm x 64mm x 50mm), ideal for miniaturized, multi-functional AIS applications.

### 3. Specifications

Parameter	Specification	Remarks
AIS1	161.975MHz	
AIS2	162.025MHz	
Receiver Sensitivity	< -119dBm@20% PER	
Co-channel Suppression	0~-10dB	
Adjacent Channel Selectivity	≥70 dB	
Spurious Selectivity	≥70 dB	
Intermodulation	≥65dB	
Blocking	≥-23dBm	
Communication Interface	3.3V TTL serial port,NMEA0183, NMEA2000	NMEA0183(38400bps); NMEA2000(250kbps )
Baud Rate	38400bps	
Operating Voltage	9V~ 36V DC	
Frequency Range	156.025MHz~162.025MHz	
Frequency Deviation	≤±0.5KHz	
Output Power	2W(CSTDMA), 5W(SOTDMA)	
Tx Spurious Emissions	≤0.25uW	
Operating Temperature	-20°C~60°C	

Table 1 Electrical Characteristics

#### 4. Dimensions (unit: mm)

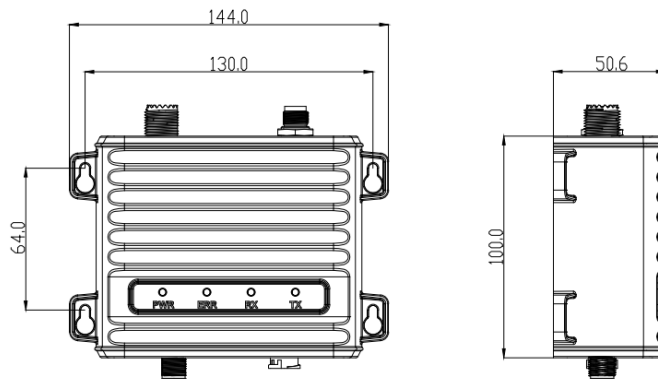


Figure 2 144mm x 64mm x 50mm

#### 5. Interfaces and Definitions

##### 5.1 RF interfaces

- ① GPS-ANT, external GPS antenna
- ② VHF-ANT, external AIS antenna

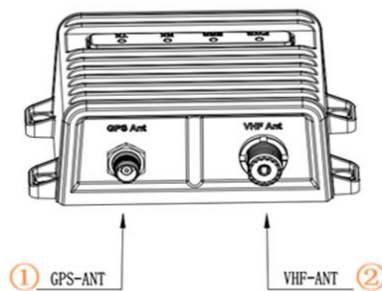


Figure 3 RF interfaces

##### 5.2 Data Communication and Power Interfaces

- ③ NMEA 2000, connect to external NMEA2000 data bus.
- ④ NMEA 0183/Power/SILENT, 8-pin aviation connector, connect to external 3.3V TTL serial communication (compliant with NMEA 0183 data format), 12V DC power supply, enable and disable silent mode.

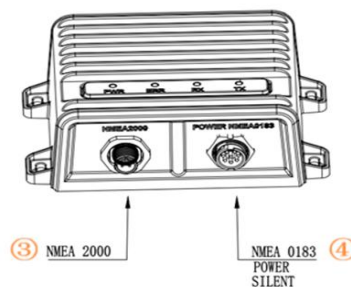


Figure 4 External Communication and Power Interfaces

Connector ①			
Serial Number	Definition	Connection Instructions	Remarks
①	GNSS Ant	Connect to GPS/BeiDou Antenna	TNC(Female)

Connector ②			
Serial Number	Definition	Connection Instructions	Remarks
②	VHF Ant	Connect to AIS Antenna	SL16(Female)

Connector ③			
Serial Number	Definition	Connection Instructions	Remarks
③	Cable Shield	Bare Drain, Shield	
	NET-S	Red, Power	
	NET-C	Black, GND	
	NET-H	White, High Signal	
	NET-L	Bule, Low Signal	

Connector ④			
Serial Number	Definition	Connection Instructions	Remarks
④	VCC	Red	
	GND	Black	
	TX-	Yellow	
	TX+	Green	
	RX-	White	
	RX+	Brown	
	GND	Blue	
	SILENT	Gray	

Table 2 Interface Definitions

## 6. Peripheral Connection

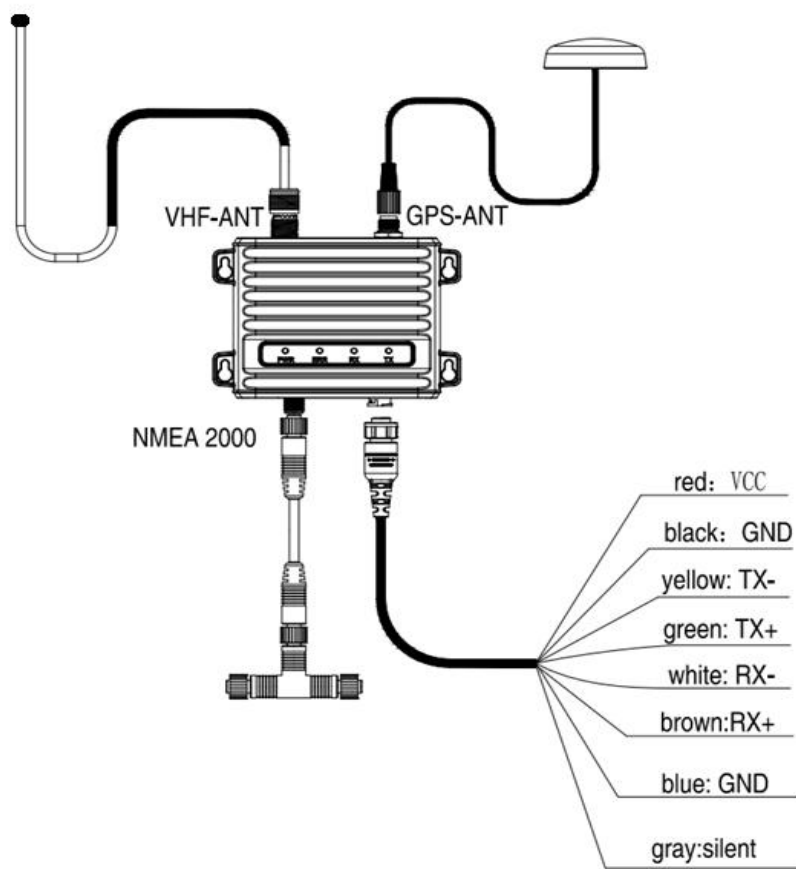


Figure 5 Peripheral Connection Diagram

## 7. Packaging and Model

### 7.1 Packaging Details

Item	Description
Terminal Per Carton	
Carton Dimensions	

### 7.2 Model

Model	Description
HS-MX6208GT	High Performance AIS Transceiver(Black Box)