

HS-MX1206GT User Manual

Version 1.6
(Sep2025)

HS-MX1206GT

Embedded Dual-Channel AIS Receiver Module

Version 1.6

1. Product Overview

The HS-MX1206GT is our company's independently developed next-generation embedded dual-channel AIS receiver module solution. Designed for marine navigation and communication equipment, smart navigation aids, bridge collision avoidance systems, integrated navigation and communication beacon lights, maritime electronic fences, and portable AIS base stations, it provides critical and effective navigation and communication support for vessel collision avoidance alerts, fairway monitoring and management, and vessel operators. The module adopts an adaptive, cost-effective solution featuring a dedicated AIS signal processor chip + intelligent AI error correction algorithm + mature SDR software-defined radio design architecture, eliminating the need for environmental matching. It boasts high integration, low power consumption, and low cost, ensuring no vessel information is missed in any scenario, including dynamic heading, speed, and static vessel details.

The HS-MX1206GT complies with CCS, CE and FCC approvals, and meet various national maritime standards. It maintains exceptional reception performance even in strong electromagnetic interference environments. With ultra-low voltage and minimal power consumption, the module effectively meets diverse application scenarios, installation environments, and the AIS functional requirements of different users. The module can function as an embedded component or be configured as a standalone device, outputting parsed vessel AIS message data via a standard serial port. With dimensions as compact as 60mm x 52mm x 10mm and utilizing a composite FPC standard interface for external connections, it facilitates miniaturized embedded application designs.

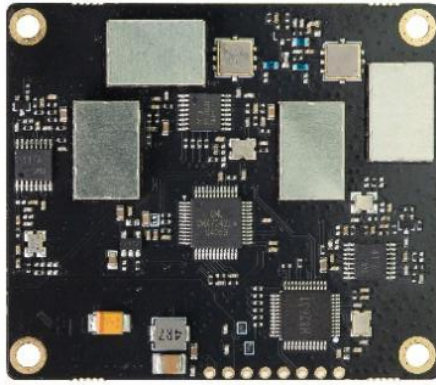


Figure 1 Physical Diagram

2. Specifications

Parameters	Specification	Remarks
AIS 1	161.975MHz	
AIS 2	162.025MHz	
Receiver Sensitivity	< -119dBm@20%PER	
Intermodulation	≥65dB	
Adjacent Channel Selectivity	≥70dB	
Spurious Selectivity	≥70dB	
Blocking	≥90dB	
Communication Interface	3.3V TTL Serial Port	NMEA0183 Format
Serial Port Baud Rate	38400bps	
Operating Voltage	9V~ 36V DC	
Operating Current	150mA	
Operating Temperature	-30°C~ +70°C	

Table 1 Performance Parameters

3. Functional Block Diagram

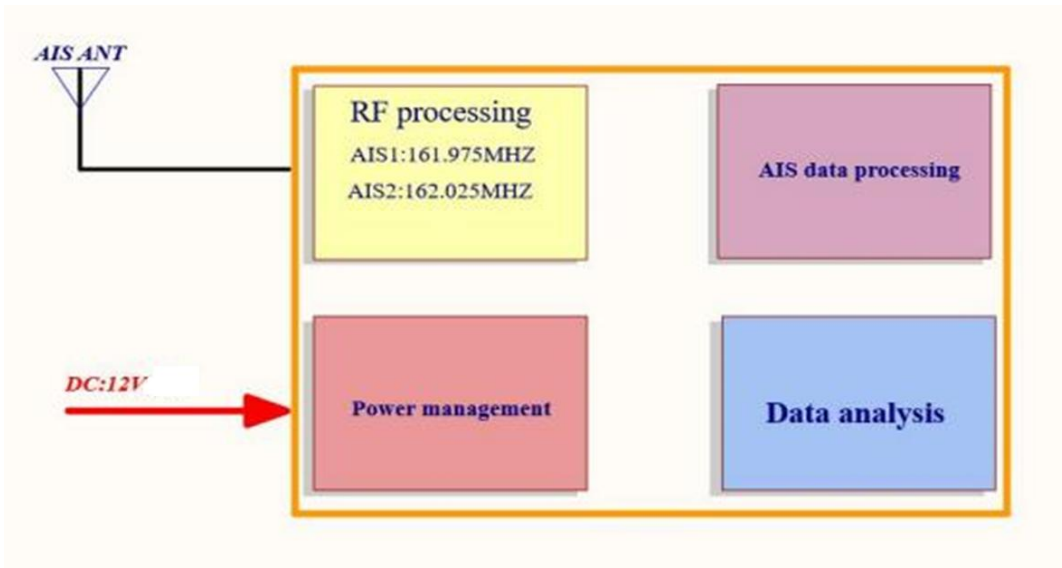


Figure 2 Module Internal Block Diagram

4. Typical Applications

The HS-MX1206GT can be widely applied in multi-mode marine radios, standalone marine AIS receivers, vessel status tracking and monitoring systems, maritime IoT terminals, and various products or equipment requiring AIS reception and parsing capabilities.

5. Dimensions (unit: mm)

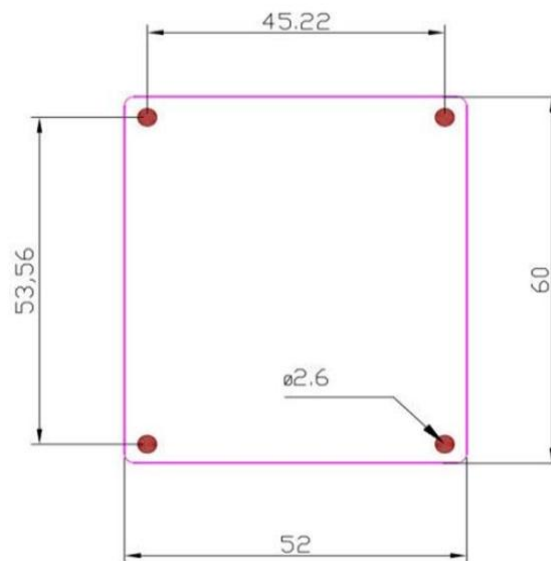


Figure 3 Module Dimensions: 60mm x 52mm x 10mm

6. FPC Cable Connector Definition

Pin	Definition	Description
1	VCC	Power supply input(Typical 12VDC)
2	VCC	Power supply input(Typical 12VDC)
3	NC	Floating
4	GND	Ground
5	GND	Ground
6	TXD	Serial data output,3.3V TTL, baud rate 38400bps
7	RXD	Serial data input,3.3V TTL, baud rate 38400bps
8	NC	Floating

Table 2 8-Pin FPC Cable Definition

7. Typical Application Circuits

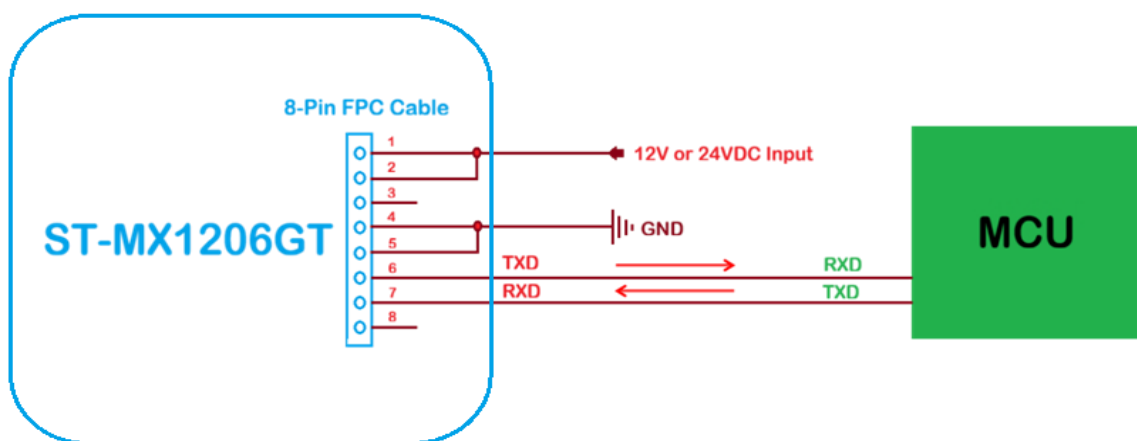


Figure 4 Typical Application Circuits

8. Usage Notes

- 8.1 The screws securing HS-MX1206GT module have a diameter of 2.6mm.
- 8.2 The HS-MX1206GT accepts 12V or 24V DC power input. After power-up, allow a one second initialization period before the module begins normal operation.
- 8.3 The UART1 provides standard 3.3V TTL serial data output with 38400bps baud rate.
- 8.4 The UART2 is reserved and does not output data.
- 8.5 The HS-MX1206GT operates normally without any configuration. It outputs raw AIS message data requiring system parsing.
- 8.6 The HS-MX1206GT does not include positioning functionality. For positioning capabilities, a separate positioning module and algorithm must be added.
- 8.7 The power supply noise must be less than 30mV. Excessive power supply noise will degrade the module's reception performance.

9. Packaging and model

9.1 Packaging Details

Item	Description
Modules Per Carton	
Carton Dimensions	

9.2 Model

Model	Description
HS-MX1206GT	Embedded Dual-Channel AIS Receiver Module