HS-MX6208GT

AIS Transponder

Version 1.1

(Last updated by Aug 2024)

HS-MX6208GT

Testing Guide

1.Product Overview

HS-MX6208GT is the newest marine AIS transceiver system product that integrates SOTDMA and CSTDMA(Automatic Identification System) technology to meet the market demands of next-generation ships and shore- based communication networks, providing important and effective navigation assistance and communication method for ship pilots and shore- based management.

The system product allows the ship or shore- based system to receive AIS data of other ships, base stations or navigation beacons in its vicinity, and can receive AIS data information including the ship name, course, velocity and current navigation status of ships in the area which covered by the equipment.

HS-MX6208GT supports excellent performance, ultra- low power consumption and compact size. It can be used in the shipborne black boxes and onshore compact base stations to support AIS data management and services, smart boat/ marine IOT and other smart maritime application requirements.

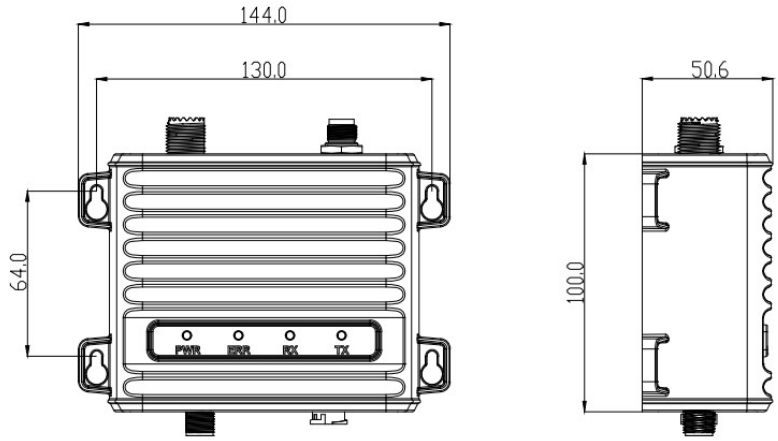
2.Main Features

- Support AIS Class B with 2W CSTDMA and 5W SOTDMA.
- Can extend to support AIS AtoN and Virtual AtoN.
- Integrated on- board GNSS positioning module.
- Provide multiple interfaces including NMEA2000, NMEA0183, GNSS, VHF and Power.
- Can upgrade the software via the NMEA0183 port and control the device,
- Automatically receive AIS information from other vessels, VTS shore stations, AtoN and other equipment. Also, position, heading, velocity and other information can be analyzed, and exchange to the standard format of AIS message.
- Support data collection and transmission functions.
- Can sent data to the multi- functional display and other shipborne equipments
  , realize the ship-to-ship interconnection and ship-to-shore interconnection.
- Support data collection and transmission functions
- Meet IEC62287, ITU-RM 1371 standards
- Compact size (130mm x 64mm x 50.6mm)

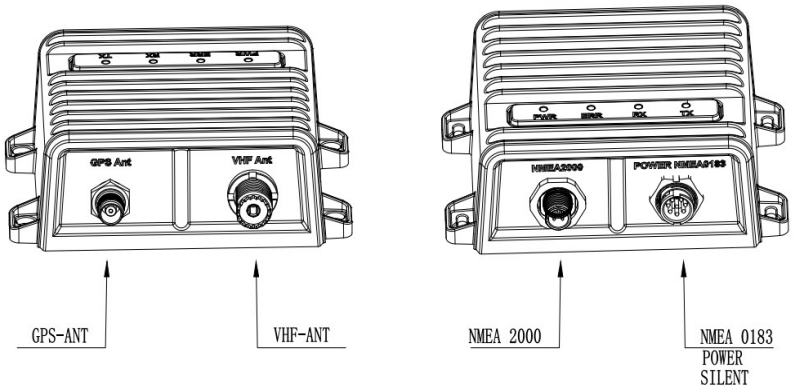
3.Typical Performance

Parameter	Ratings
AIS 1	161.975MHz
AIS 2	162.025MHz
AIS Data Rate	9600bps
Modulation	GMSK
Frequency Error	≤±0.5KH z
Tx Output Power	2W CSTDMA/ 5W SOTDMA
Spurious Emission	≤0.25uW
Rx Sensitivity	≤-119dBm @12dB SINAD
Co- suppression	0~-10dB
Adjacent Channel Selectivity	> 70dB
Spurs Suppression	> 70dB
Intermodulation Distortion	> 65dB
Blocking	> -23dBm
Serial Port	NMEA0183(38400bps) NMEA2000(250Kbps)
Baud Rate	38400bps
Current	200mA @ 12VDC (Typical)
Power Supply	9.6V ~24VDC
Working Temperature	-20℃ ~60℃

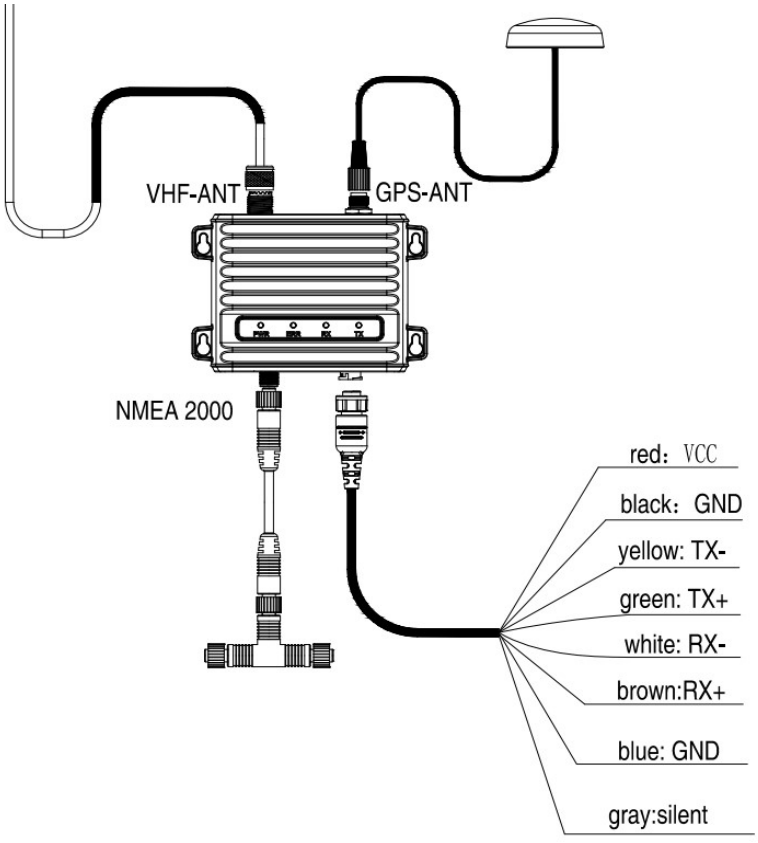
4.Product Dimensions(mm)



5. Connection Description



6. Interface Definitio



7. Status Indicator Light Description

Indicator	*Light*	*Description*
Power	Green, steady	The device has been powered up correctly. By USB power, the Power LED does not light, showing that the device is in low power mode.
Tx/Silent	Green, flashing	The device is transmitting AIS data. The flashing interval varies depending on vessel speed.
	Orange, steady	The device is in silent mode, no AIS transmis- sion at all.
Rx	Green, flashing	The device is receiving AIS data.
Error	Red, steady	MMSI is not properly programmed.
	Red, flashing	A BIIT system error is detected, referring to chapter "Built-in integrity test (BIIT) page 25, or by USB power.

8. Class A vs. SOTDMA Class B vs. CSTDMA Class B

A brief comparison between class A and class B AIS is illustrated in the following table.
HS-MX6208GT is a SOTDMA & CSTDMA Class B AIS transponder.

Type of AIS	Class A AIS	Class B SOTDMA	Class B CSTDMA
Primary access scheme	SOTDMA (Self-organizing)	SOTDMA (Self-organizing)	CSTDMA (Carrier-sense)
Standard	IEC 61993-2	IEC 62287-2	IEC 62287-1
Transmit power and range	12.5W	5W	2W
IMO mandate	Mandatory for all SOLAS vessels	No mandate	No mandate
Reporting rate dynamic data	Highest (transmission up to every 2 sec)	Higher (transmission up to every 5sec)	Low (transmission up to every 30sec)
AIS data presented	Static, dynamic, voyage	Static and dynamic data	Static and dynamic data
Applications	Commercial vessels, fishing boats, working boats, passenger boats with more than 12 passengers	Smaller commercial, fishing and work boats, recreational vessels	Recreational vessels and small fishing boats

9. Sample Test Guidance

MMSI for the working sample HS-MX6208GT as below:

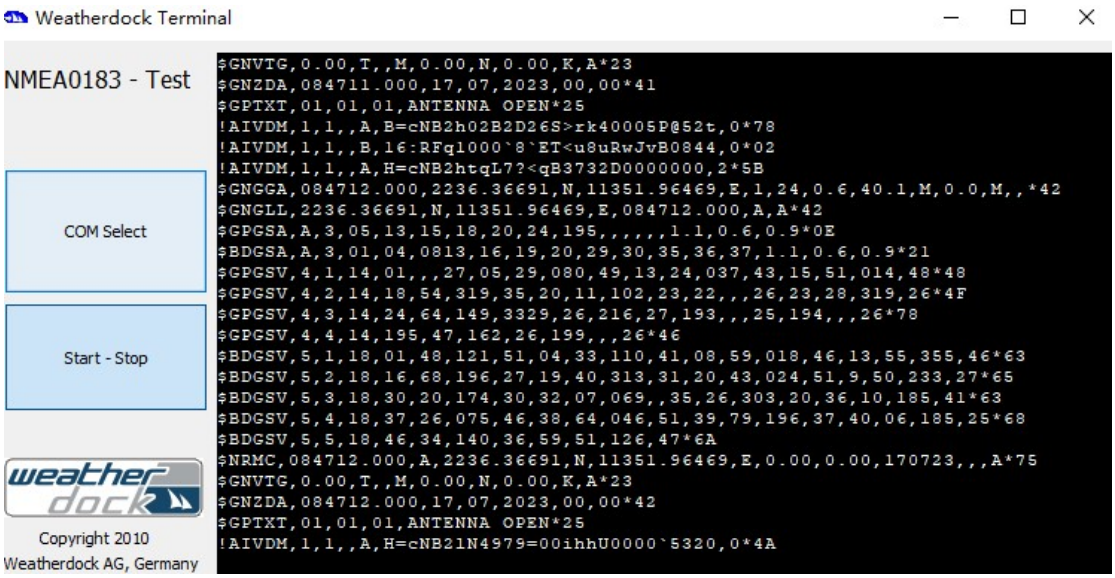
3# MMSI:413100003

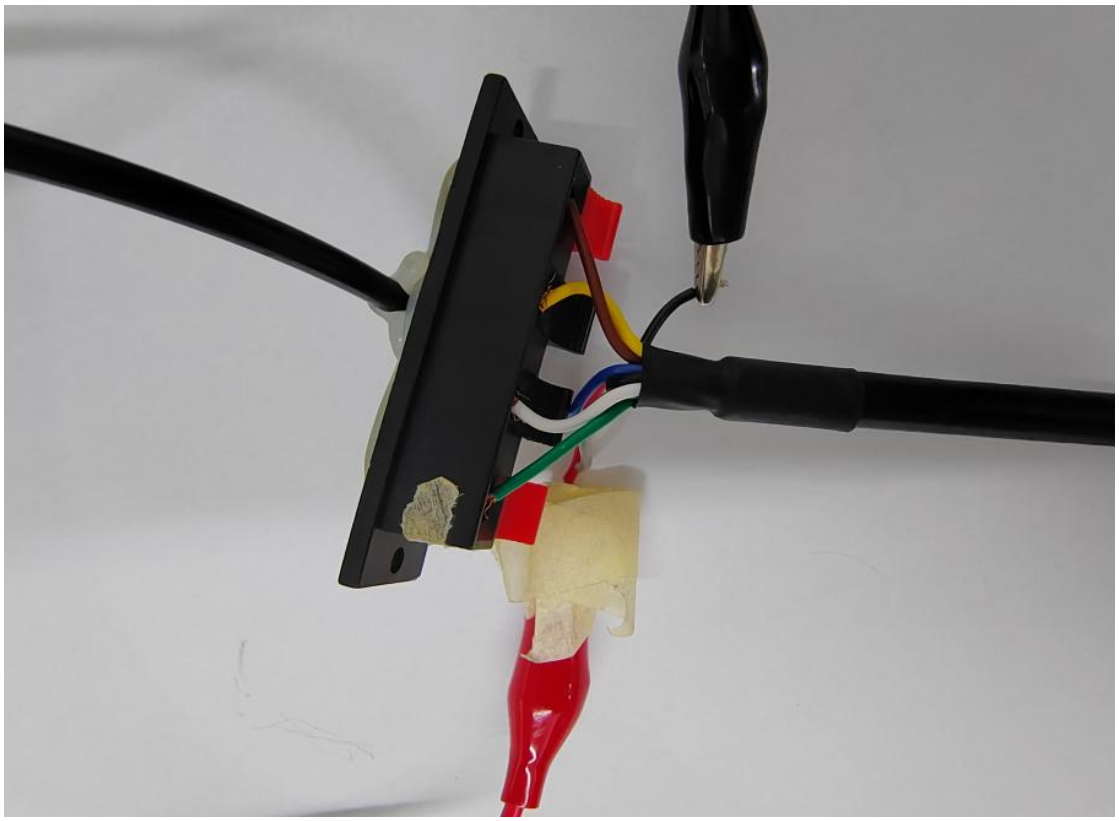
4# MMSI:413100004

5# MMSI:413100005

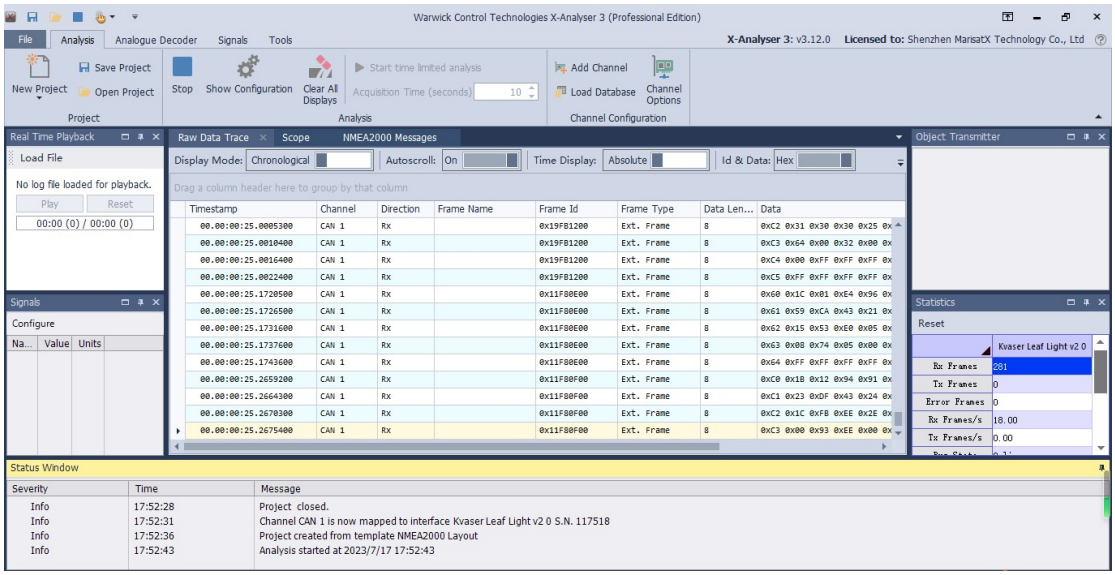
6# MMSI:413100006

9.1 NMEA0183 Test





9.2 NMEA2000 Test



9.3 MFD Test

9.3.1 The following tools need to be prepared before testing

1) CAN Bus Interface
2) NMEA2000 Power Cable
3) CAN BUS Load
4) NMEA2000 Data Cable

AXIOM PLUS7 Connection

ELITE FS7 Connection

CAN BAS Connection

9.3.2 Testing Demo