



**SHINE MICRO**

**SM150BFT**

**BLUE FORCE TRACKING**



The SM150BFT is designed specifically for AIS surveillance PLUS encrypted tracking.

- AIS Receiver
- MURS Receiver
- Encrypted MURS Transmitter
- 12-channel GPS
- VHF antenna
- GPS antenna
- Contained in a 25 inch tube
- Mounts on a standard marine base

With the encrypted transmission of vessel name, call sign, size, position, and more, the **SM150BFT** is a comprehensive secure tracking system. And now, with **Short Text Messaging (STM)**, communication is easier than ever.

**FEATURES**

- Encrypted Tracking
- AIS Surveillance
- Installs in minutes
- Short Text Messaging (STM)

**INTERFACE**

- AIS: NMEA 0183 HS V3.0 / IEC 61162
- MURS: RS232

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

**WHY MURS? WHY SM150BFT?**

**Multi-Use Radio Service, or MURS**, is a group of VHF frequencies reserved world-wide for two-way communications, which allow for encryption of terrestrial and marine movements. The **SM150BFT** utilizes these frequencies for encrypted transmissions while maintaining the option to monitor AIS marine traffic, making it a state-of-the-art tool for applications such as law enforcement, border protection and port security. The **SM150BFT** allows officers to maintain surveillance over AIS traffic while only disclosing their own locations amongst a specified group.

By transponding on **MURS** and receiving on **AIS** the **SM150BFT** provides authorities with an integrated solution for monitoring commercial marine activity and tracking "blue" vessels and other assets. Unlike **AIS**, **MURS** allows for **STM** activity, enabling real-time text communication between stations.

**PENDING FCC CERTIFICATION**

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## SM150BFT

## AIS/MURS BLUE FORCE Transponder

**PENDING FCC CERTIFICATION**

### System Specifications

- **Designation:** MURS Transponder/AIS Receiver
- **Physical Serial interface:** RS232 or IEC 61162
- **Power Supply:** 12.6V
- **Power Consumption:** Less than 10 watts
- **Temperature:** (per IEC 60945)  
-25°C to +70°C (Exposed)
- **Compass Safe Distance:** 1 meter

### Navigation Specifications

- **12 channel internal GPS and antenna**

### Dimensions and Weights

- **Diameter:** 2.0 in.
- **Height:** 25.0 in.
- **Weight:** 3 lbs.

### Frequencies and Channel Bandwidth

- **RX AIS:** 161.975 – 162.025 MHz  
at 25 kHz channel spacing
- **RX MURS:** 151.820 MHz, 151.880 MHz,  
151.940 MHz at 11.25 KHz channel spacing  
154.570 MHz, 154.600 MHz  
at 20 KHz channel spacing

### Encrypted MURS Transmitter

- **TX MURS:** 151.820 MHz, 151.880 MHz,  
151.940 MHz at 11.25 KHz channel spacing  
154.570 MHz, 154.600 MHz  
at 20 KHz channel spacing
- **Power Output:** ≤ 2 watts
- **Harmonic Emission:** ≤ -53 dBc
- **Spurious Emission:** ≤ -53 dBc
- **Frequency Accuracy:** +/- 3ppm

### MURS Receiver

- **Data Rate:** 9,600 bps
- **Error Rate:** ≤20% at -107 dBm
- **Adjacent Channel Rejection:** 60 dB
- **Blocking:** 70 dB
- **Intermodulation:** 60 dB
- **Large Signal PER:** <1%
- **Image Rejection:** 70 dB for 20% PER
- **Spurious Rejection:** 70 dB for 20% PER

### AIS Receiver

- **AIS Data Rate:** 9,600 bps
- **Sensitivity:** ≤20% PER at -107 dBm
- **Adjacent Channel Rejection:** 60 dB at 25 kHz
- **Blocking:** 70 dB
- **Intermodulation:** 60 dB
- **Large Signal PER:** < 1%
- **Image Rejection:** ≥ 70 dB for 20% PER
- **Spurious Rejection:** ≥ 70 dB for 20% PER

### Short Text Messages (STM)

- **Transmission Protocol:** CS-TDMA
- **STM Types:**

**Targeted:** for communication with a specific unit

**Broadcast:** for communication with any unit set to receive broadcast messages

**Group:** for communication with units that have selected the sender as part of their defined group.

For additional information on the construction and transmission of STM please contact [info@shinemicro.com](mailto:info@shinemicro.com)

### Logical Serial Interface Details:

The logical serial interface of the SM150BFT is a subset of IEC specification 61993-2, using a 38.4 kbps connection to a host computer. The received AIS messages are output using the VDM sentence, and GPS location data is output using the NMEA 0183 sentences.

To request full serial interface specifications, please e-mail [info@shinemicro.com](mailto:info@shinemicro.com) or call Shine Micro at (360) 437-2503.

### Simple Marine Installation

1. Attach the SM150BFT to a standard 1" x 14 threaded antenna mount.
2. Connect the power cable to a 12 volt power source.
3. Connect the ground lug to a solid ground.



Optionally connect the serial interface cable to a PC for STM applications and visual display.

### WARRANTY INFORMATION

Shine Micro warrants its products to be free from defects for one full year from the date of purchase. Shine Micro will, at its sole discretion, repair or replace any components that fail in normal use. Labor and material costs for such repairs or replacement will be free of charge. This warranty does not cover failures due to abuse, misuse, accidents, or unauthorized alterations or repairs

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