

# **MSAT G2 Handi-Remote Interface**

## **Installation Manual**

**Version 2.20**

**Tracer Technology Systems, Inc.  
350 S. Billings Blvd, Ste 2B  
Billings, Montana 59101**

**Product Number: 360-230-1000  
Last Update: August 25, 2020**

**<https://msatg2.com>**

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## ***Limited Warranty***

### **COVERAGE:**

Tracer Technology Systems, Inc. warrants that its products will be free from defects in materials and workmanship for a period of 12 Months (1 years) from the date of shipment. During this time, Tracer Technology Systems, Inc. will cover parts, labor and return shipping. If failure is caused by instances other than manufacturing defects, Tracer Technology Systems, Inc. will repair the product and bill the customer for parts and labor. Contact Tracer Technology Systems, Inc. for more information.

### **What Tracer Technology Systems, Inc. will not cover:**

1. Voltage outside specifications applied to the controller.  
The MSAT G2 operates at +11V to +18V, negative ground.
2. Damage to the controller by lightning, accident, or power surges.
3. Incorrect unit installation.
4. Damage caused by shipment (damage claims are handled by the carrier).
6. Unauthorized repairs.

**THIS WARRANTY APPLIES ONLY TO THE ORIGINAL PURCHASER**

### **HOW TO OBTAIN SERVICE**

Please contact Tracer Technology Systems, Inc. for servicing information and authorization.

Service Address:

Tracer Technology Systems, Inc.  
Attn: Handi-Remote Repair  
350 S. Billings Blvd, Suite #2B  
Billings, MT 59101

Voice: +406-203-1955

Email: [support@msatg2.com](mailto:support@msatg2.com)

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## ***Return Policy***

These policies supersede policies appearing on all other Tracer Technology Systems, Inc. literature and are in effect for purchases made after March 1, 1989.

- **Please keep all packing material and documentation in the event that your equipment has to be serviced or returned.**
- Before returning any product, you must obtain a Return Authorization (RMA) number. You can obtain this by calling (406) 203-1955.
- **No returns, of any type, will be accepted without an RMA number. Please have the following information on hand when calling for an RMA number:** customer name, invoice number, serial number, and the nature of the problem. All can be found on your invoice.
- All product to be returned must **be returned within 30 days** from the invoice date, 100% complete, and must include manuals, parts bags, and other accessories provided by the manufacturer.
- All defective products will be accepted directly by Tracer Technology Systems, Inc. for credit, exchange, replacement, or repair at Tracer Technology Systems, Inc.'s discretion. **After 30 days from invoice date, the manufacturer's warranty applies.**
- All non-defective returns for credit, exchange, or refund are subject to a restocking fee on the schedule listed below. No returns will be accepted beyond the 30 day period. Shipping costs are not refundable.
  - 0 to 10 days            5% restocking
  - 11 to 20 days        10% restocking
  - 21 to 30 days        15% restocking
- **Tracer Technology Systems, Inc. reserves the right to authorize product returns beyond 30 days from date of invoice. If the product is accepted after 30 days, credit will be issued toward FUTURE PURCHASE ONLY.**

If you have any questions — JUST ASK.

All of us have tried to make sure that this order has been shipped correctly. If we have made an error - we want to make it right. If you have a question or problem with your order, just write or call, and our staff will personally handle your situation.

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# 1.0 Introduction

## 1.1 Overview

The scope of this document is to aid in the installation of the MSAT G2 Handi-Remote interface. It is the goal of this document to address most of the questions an installer, and user might encounter. It is not the goal of this document to address every and all possible set-up combinations.

When questions arise, first refer to this manual, and if unable to locate a solution to your issue, contact Tracer Technology Systems, Inc. (TTSI) technical support staff for resolution. Our preferred method of support is utilizing e-mail:

E-Mail support:        [support@msatg2.com](mailto:support@msatg2.com)

Telephone support is available for basic questions, theory of operation and configuration issues. Custom programming support is only handled via e-mail.

Phone support:        +406-203-1955



## 1.2 Overview of the MSAT G2 Handi-Remote Interface

The MSAT G2 Radio/Telephone interface provides the user with the ability to radio dispatch and communicate between multiple talk groups, over satellite. The only limit to this units powerful use is the distance from the antenna to the radio. The handset attaches to the radio, therefore it is limited in its distance it can be located from the radio.

The G2 Handi-Remote Interface <sup>(TM)</sup> (G2-HR) extends the distance the handset can be located away from the radio, therefore expanding the opportunities where this system can be install. The G2-HR is guaranteed to operate with up to 1000 feet of Category 5, 5E or 6 cable between the radio and the handset. The theoretical limit is 4300 feet, but we do not guarantee operation at this distance.

The G2-HR requires a dry 4-pair cable to be used. Dry indicates that the cable is physically straight through between the two units. Because the G2-HR utilizes Category 5 series cable, some may assume that it can be connected through an existing network within a building. That is incorrect, and will not enable operation. When installing the interface a complete end-to-end copper cable run is necessary. Runs where there might be significant interference will require Category 6 shielded cable to minimize environmental interference.

The G2-HR is comprised of two modules.

### **Module 1 is the MSAT END**

An included 12" connection cable connects the MSAT G2 radio to the module. One end of the cable attaches to the MSAT-G2 End labeled Cable, and the other end attaches to the Handset End labeled Cable. The extender cable attaches to the connector labeled CABLE. The MSAT-G2 module is powered from the MSAT G2 radio's +12VDC and the Handset end is powered from the included +12V power cube.

### **Module 2 is the Handset end**

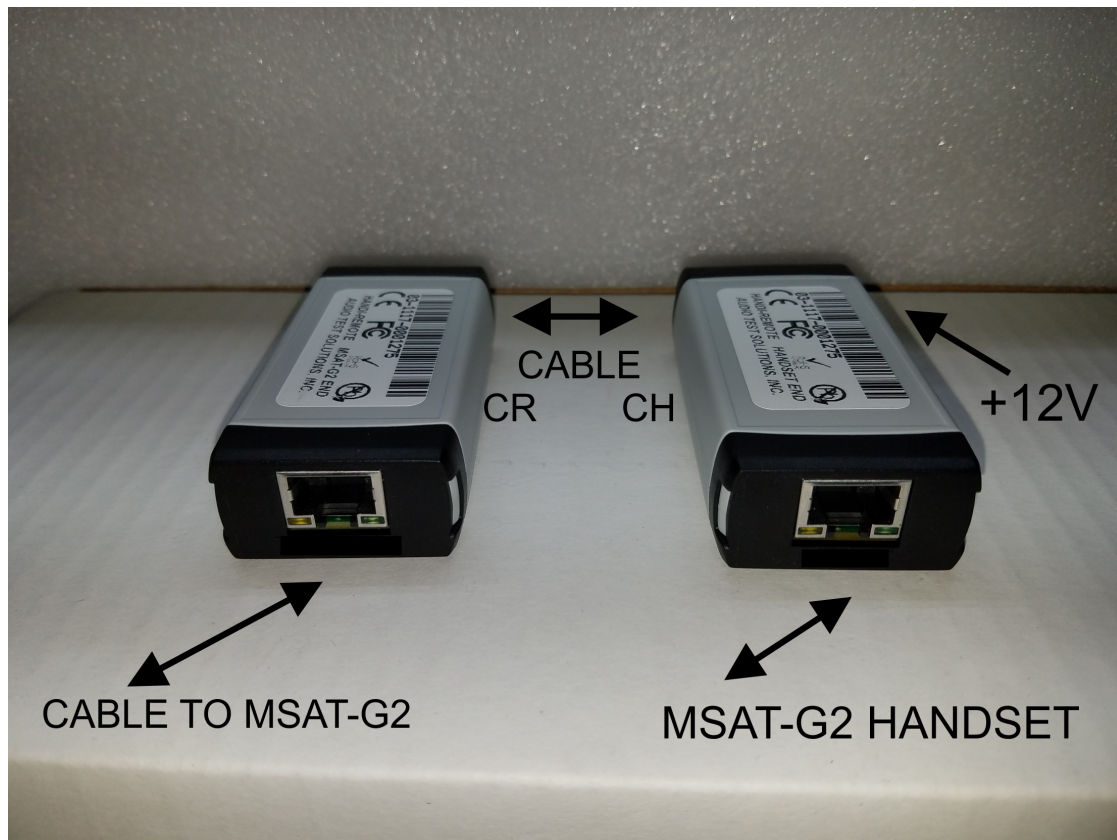
Connecting the Handset module is similar to the radio end module. One end of the extension cable attaches to the Handset End labeled Cable and the handset attaches to the connector labeled HANDSET. The handset end is powered from an external +12VDC power supply (included).

The connection between the two modules is isolated and contains no Ground or DC power. This connection ensures better noise isolation and minimization of ground loops that can cause increased noise. The cable carries balanced 2-wire transmit audio, balanced 2-wire receive audio, differentially driven transmit data and differentially driven receive data. To ensure the best operation, utilize Category 5 or better cable.

## Section 2.0: Installation

### 2.1 Introduction

The installation of the G2-HR is easy and painless. The only problems that can be experienced is the extension cable between the two modules, plugging the cable into the incorrect connector, or no plugging the DC power supply required on the handset end.



Connections

#### Installation Steps:

1. Attach the included interface cable between the radio and the MSAT-G2 End interface, MSAT Radio Connector.
2. Attach the connection cable (user must provide) to the connector labeled CR (radio end).
3. On the other Handset module, attach the handset to the module labeled HANDSET-END to the connector not labeled but on the opposite end of the side where you plug power into the unit.
4. Attach the connection cable (user must provide) to the connector labeled CH (handset end).

5. Plug in the power module to the connector labeled +12V and plug into the wall outlet.

If everything is connected correctly, the handset will function like it is plugged into the radio directly. If the unit does not operate correctly, verify the connections.

## Installation Verification

Once installed, the MSAT G2 Handset should power-up and the MSAT Logo should appear. If this does not occur, press and hold the Handsets power button located on the left side of the handset. If the G2-HR still does not power-up, check the extension cable between the two units. Also check the MSAT-G2 radio power, and verify the radio end module is attached correctly.

## Fiber Installation

When utilizing the Fiber HandiRemote units, two black units will be used in place of the CAT-5 copper connection. One unit is labeled “Fiber Remote Handset-End” and the other “Fiber Remote MSAT-End”. Plug the cable from the Fiber Remote MSAT-End into the HandiRemote connection labeled “CR”. Plug the cable from the Fiber Remote Handset-End into the HandiRemote connection labeled “CH”. Connect the MSAT-G2 radio to the Radio end and the IPR-750 Handset (or similar) to the Handset end.

