

# *MSAT-PSTN Interface*



## **USER GUIDE**



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## 1. FEATURES

### Telephone Foreign Exchange Subscriber (FXS) Service:

- ③ RJ-11 port for standard or cordless analog telephones
- ③ RJ-45 port for MSAT-G2 handset
- ③ Ringer Equivalence (REN) = 3

Note: Fax machines, dial-up modems and other non-telephone devices will not operate with this device.

### Two-Way Radio Push-To-Talk (PTT) Service:

- ③ PTT control to initiate and receive Two-way Radio calls using an analog telephone
- ③ Change Talk Group TAG positions via the analog telephone (including Private Mode with Directory Number (DN) entry)

## 2. EQUIPMENT DESCRIPTION

### Front Panel:

- ③ **MSAT Radio Port:** Connects to MSAT-G2 Transceiver Unit (TU)
- ③ **Telephone Port:** RJ-11 Telephone connection
- ③ **MSAT Handset Port:** MSAT-G2 handset connection (optional)

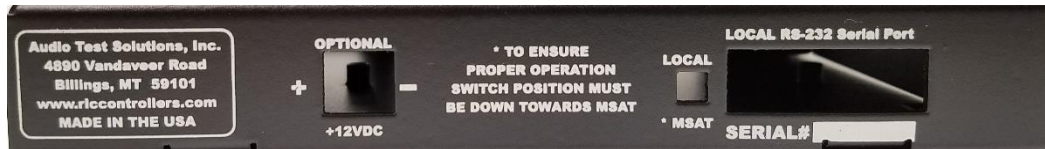


Connect to MSAT-G2  
Handset Port

Analog Telephone  
MSAT-G2 Handset  
Connection Connection (Optional)

## Back Panel:

- ③ **Optional +12VDC Port:** Optional power connection (2-pin)
- ③ **Local/MSAT toggle switch:** Local mode only used for software upgrades
- ③ **RS-232 Serial Port:** Used for software upgrades



Rear Panel

## Front Panel LED Indicators (see figure 3):

- ③ **POWER:** Lights up when the unit is powered up. Unit receives power from the MSAT-G2 radio through the RJ-45 handset port
- ③ **RING:** Lights up when the phone rings (flickers with the ring cycle).
- ③ **HOOK:** Lights up when the telephone is off-hook
- ③ **DTMF:** Lights up when the user presses a number/symbol on the telephone keypad
- ③ **PTT:** Lights up when the user initiates PTT or is the active PTT mode talker
- ③ **LOCAL:** Only lights up during software upgrades. Should be off during normal operations



Front Panel



### **3. INSTALLATION:**

- ③ Remove MSAT-G2 Handset (RJ-45 plug) from the Transceiver Unit (TU)
- ③ Connect one end of the supplied inter-connect cable to the MSAT PORT of the MSAT-PSTN Interface. Connect the opposite end to the Handset Port of the MSAT-G2 Radio
- ③ If 12 VDC power is connected to the MSAT-G2 radio the “POWER” LED on the front panel of the MSAT-PSTN interface should light up
- ③ Connect the analog telephone to the TELEPHONE PORT of the MSAT-PSTN interface
- ③ Connect the MSAT-G2 Handset to the MSAT HANDSET Port of the MSAT-PSTN Interface if desired (optional, not required to operate the analog telephone)

Note: The MSAT-PSTN unit will automatically attempt to power the MSAT-G2 radio up if it is turned off (assuming that 12 VDC power is connected to the MSAT-G2 radio).

### **4. OPERATION:**

#### **Telephone**

##### **Placing Calls:**

- ③ Pick-up the telephone and listen for dial-tone. The “HOOK” LED on the front panel of the MSAT-PSTN interface will be illuminated when the telephone is off hook
- ③ Dial the destination telephone number. All phone numbers supported by your MSAT-G2 radio can be dialed (10 digit Canada/USA, 011-international calls, \*72/90/92 call features, 611, etc.)
- ③ Once the phone number is dialed the user will hear a single “call initiate” tone.
- ③ Following the tone, ringing will be heard and the operation of the telephone can proceed in a normal fashion



- ③ Once the call is completed the user simply hangs up. The “HOOK” LED on the front panel of the MSAT-PSTN interface will turn off

### **Receiving Calls:**

- ③ The telephone will ring normally when a call is received. The “RING” LED on the front panel of the MSAT-PSTN interface will illuminate/flicker during the ring cycle
- ③ When the user answers the call the “HOOK” LED should illuminate
  
- ③ Upon completion of the call the user hangs up and the “HOOK” LED on the front panel of the MSAT-PSTN interface will turn off

## **Two-Way Radio PTT**

### **Telephone Keypad Sequences:**

- ③ # PTT and PTT Release
- ③ nn# Change to Talk Group TAG position ‘nn’
- ③ xxxx# Change to Private Mode TAG 00 with Directory Number (DN) = xxxx

### **Initiating Dispatch Radio Call:**

- ③ Pick-up the telephone and listen for dial-tone. The “HOOK” LED on the front panel of the MSAT-PSTN interface will be illuminated when the telephone is off hook.
- ③ Press ‘#’ for PTT; the “PTT” LED on the front panel of the MSAT-PSTN interface will light up.
- ③ Wait for “User On” high-low tone
- ③ Press ‘#’ again for PTT release (pressing any DTMF key or hanging up the phone will cause the PTT to release)
  
- ③ All MSAT-G2 audible tones will be heard (Vacant, etc.)

Note: Users can rejoin a PTT conference in progress after hanging up by simply picking the telephone up again and waiting for the talk group “Vacant” tone.



### **Receiving Two-way radio PTT Call:**

- ③ A double ring sequence is heard generated by the telephone for incoming Two-way radio (PTT) calls (ring-ring pause)
- ③ Pick-up the telephone to hear active talkers then press the '#' key to PTT when you hear the talk group "Vacant" tone
- ③ Regular MSAT-G2 PTT audible tones will be heard throughout the conversation

### **5. TROUBLESHOOTING:**

- ③ No dial tone heard (fast busy) ○ Ensure the "POWER" LED on the front panel of the MSAT-PSTN Interface is illuminated ○ if fast busy is heard then wait a while and retry
- ③ Normal MSAT-G2 error tones will be heard through the analog telephone (lost call, failed call, etc.)

### **NOTES:**

- The MSAT-G2 handset (if installed) can also be used for telephone and PTT calls. A telephone connected to the MSAT-PSTN Interface will have priority and can disrupt or interrupt users using the MSAT-G2 handset
- Users must be careful if they are using the MSAT-PSTN Interface to change their Talk Group TAG position. If the wrong TAG digits are entered it is difficult to interpret the key press error tones sent back from the MSAT-G2 radio



## 6. SPECIFICATIONS

<b><u>Power and Size</u></b>	
Voltage / Current / Temperature	11V. 18V DC / 200mA DC @ +12V/DC  -4 ° F to 104 ° F (-20 ° C to 40 ° C)  Voltage obtained from the MSAT-G2 radio when interfaced with the included 12" RJ-45 CAT-5 cable
Size/Weight	136.5 mm deep x 168.2mm width x 25.4mm high  5-3/8" deep x 6-5/8" width x 1" high  Weight: 226 grams, 8 ounces
<b><u>I/O Characteristics</u></b>	
RJ-45 Radio Connector	12" Jumper between the MSAT-G2 radio and MSAT-PSTN unit
RJ-45 Handset Connector	Connects the MSAT-G2's handset to the PSTN for dual use between the handset and the MSAT-PSTN interface
RJ-11 FXS Connector	Connects a standard analog 2-wire telephone to the MSAT-PSTN interface for FXS initiated calls
<b><u>FXS Specifications</u></b>	
Ringing Capability	3.0 km with a REN loading of 3  5.0 km with a REN loading of 1
Ringer Equivalency (REN)	3
Drive capability	3.0 km into 800ohm (including telephone)





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