

MT150™

**Long-Range
Synthesized Radio
Mini-Alarm Transmitter**

User Guide

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P.N.: Book 051 Rev: 01
Approved: Amir S. 08.08.99

MT150™ has three sets of connectors: J1, J2, and ANT1 (see Figure 1).

- J1:** The 8-pin contact connector connects the following items (Figure 1, item 6):
 - 12 VDC battery (contacts 1 and 2)
 - Common Ground (contact 3)
 - Five inputs for sensors (contacts 4 - 8)
 - Two serial communication connections: SI and SO (contacts 12 and 13) connects DII100™, dialer interface, or alarm panels with a suitable protocol.

Adjacent to J2 are two LEDs: PTT LED (item 5), self-test LED (item 4).

- J2:** The 10-pin programming connector is a serial port to connect a PC (item 3).

Communication parameters are easily programmed using GUP10™ utility-programming software. (See the ATS Programming Guide).

Item 2 is a self-test button.

- ANT1:** The BNC connector connects a VHF RF antenna (item 1).

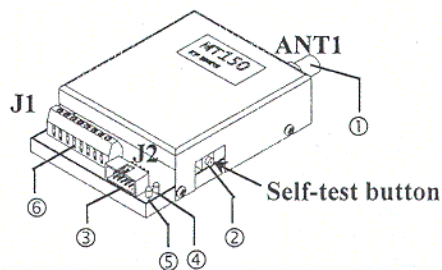


Figure 1: MT150™ External View

KP ELECTRONICS, INC.
FCC ID: H78KPM150
EXHIBIT #: 9

Preparing for Operation

Before installing the MT150™ on site, perform the following preparations:

- Setting communication parameters
- Preparing inputs
- Connecting antenna, sensors and battery
- Self test

Setting Communication Parameters

(See the MT150 Programming Guide.)

Preparing Inputs

The five MT150™ inputs are factory set for voltage 5 - 15 VDC, and are intended to act as dry contacts.

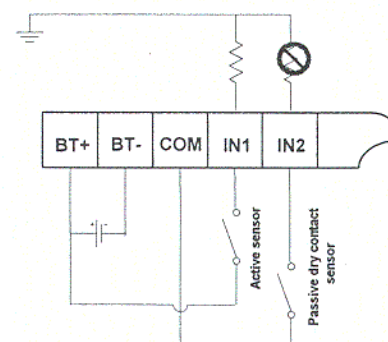


Figure 2: Sensors Connections

Connecting Antenna, Sensors and Battery

1. Connect the VHF RF antenna to the ANT1 BNC connector.
2. Connect sensors to J1 (contacts 4 - 8).
3. Connect the battery to J1: red wire (+) to contact 1, black wire (-) to contact 2 (see Figure 2).

Self-Test

Press and release the self-test button while observing self-test LED 2 (Figure 1, item 4). Refer to Table 2 for self-test results.

Table 2: Self-Test Results

LED 2 Response	Status
Flashes once	System OK.
Flashes 3 times	Dead battery. Voltage is less than 8.5 VDC. MT150 is in sleep mode. Current consumption is less than 5 mA.
Flashes 4 times	MT150 cannot lock on the frequency.
Flashes 6 times	Low battery. Voltage has dropped under 10 VDC.

Alarm Codes

When one of the inputs is activated, the following alarm codes are transmitted to the alarm center:

Table 3: Alarm Codes

Alarm Type	Alarm Code	Reset Code
Input 1	A1	B1
Input 2	A2	B2
Input 3	A3	B3
Input 4	A4	B4
Input 5	A5	B5
Low battery	A9	B9
Warning: Program Change	AB	—
Program changed	BB	—
Test	00	—

MT150™ General Description

MT150™ is a long-range, synthesized radio alarm transmitter in the VHF 135-175 MHz frequency range. This range is subdivided into two bands: low 135-155 MHz and high 155-175 MHz.

When the MT150 detects alarm conditions at one or more of its inputs, an encoded digital alarm message is prepared. It is then transmitted to the alarm center according to the LARS™ protocol selected for the system in operation.

The five MT150 inputs can be configured as voltage active inputs (5 - 15 VDC) or dry contacts.

Connect MT150™ to a PC using an RSINT001 adaptor (see Figure 3).

The following communication parameters can be programmed or modified:

- Protocol
- Station address
- System
- Group
- Number of words (in a burst)
- Alarm repetitions
- Test repetitions
- Periodic test (hours:min)
- Parity
- Input delay
- Input polarity
- Transmit frequency (MHz)

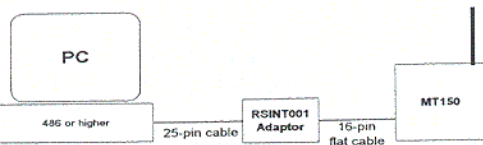


Figure 3: MT150™ - PC Connection Configuration

Operating Instructions

1. Connecting MT150™ to GUP10™ utility program
2. Changing Devices
3. Loading Device Parameter Values
4. Changing Device Parameter Values
5. Updating Parameter Value Changes
6. Confirming Parameter Value Changes
7. Activating Self Test

Connecting MT150™ to GUP10™

1. Connect MT150™ to a PC using the RSINT001 adaptor, see Figure 3.

2. Click **Start** > **Programs** > **KP Utilities** > **GUP10**, or click shortcut.

The GUP10 main screen displays, showing the device type, version, and suitable default parameters.

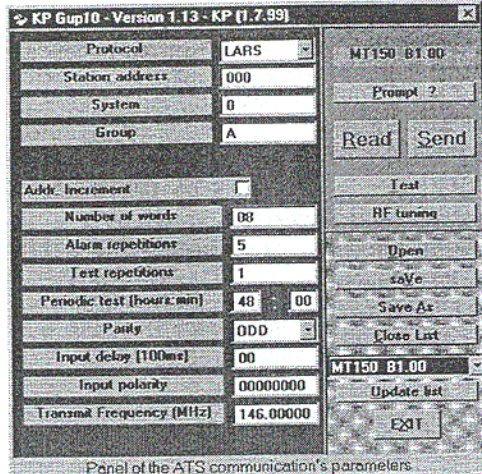


Figure 4: GUP10 Main Screen (LARS)

Changing Devices

Various KP devices can be programmed with GUP10™ utility software. When started, the GUP10 utility software program automatically connects to the device currently connected to the PC.

Loading Device Parameter Values

Device parameter values must be loaded for each device connected to GUP10™ utility software. When devices are changed, ensure parameter values for the current device are loaded.

To Load Device Parameter Values

1. From the GUP10 main screen, click **Prompt ?** (Ctrl P).
2. Click **Read** (Ctrl R). The name of the device type, version, and suitable parameters are displayed.

Ensure the correct name and version of the device are displayed. If not, ensure the device is properly connected to the PC.

If the Communication Error screen continuously appears on the screen, consult the GUP10™ User Manual.

Operating Voltage	10 - 15 VDC
Standby Current	15mA max.
Tx Current	1 max.
Power Output	5W
Freq. Stability	±5ppm at operating temp range
Operating Temp.	-23°F - 141°F (-30°C - 60°C)
Storage Temp.	-40°F - 158°F (-20°C - 70°C)
Weight	0.5 lb. (230 gr.)

Changing Device Parameter Values

Device parameter values can be changed, as required.

To Change Device Parameter Values

Type the new parameter value in the designated parameter text box.

Updating Parameter Value Changes

To Update Parameter Value Changes

1. Click **Send** (Ctrl S). The *Send Warning dialog box* displays "Are you sure?"
 - Click **Yes**, to update parameter changes.
 - OR
 - Click **No**, to return to the GUP10 main screen without updating changes.

Confirming Parameter Changes

Ensure parameter changes have been updated.

To Confirm Parameter Changes

- From the GUP10 main screen, click **Read** (Ctrl R). The GUP10 main screen displays the updated device type, version, and suitable parameters.

Performing Self Test

After KP device parameter values have been loaded, perform self test to ensure the device is working properly.

To Perform Self Test

1. Disconnect the device from the PC.
2. Press the self-test button.
3. Observe the self-test LED. (Refer to Table 2 for self-test results.)

Online HELP

To view a brief explanation of any MT150™ parameter, click the required parameter text box. The cursor will appear in the text box clicked, and the valid parameter range displays at the bottom of the screen together with a brief explanation.

The operator can select the suitable parameter from the online HELP line.