SYSTEM 7000

7941

EIGHT INPUT
HIGH POWERED
UHF TRANSMITTER

INSTALLATION AND PROGRAMMING INSTRUCTIONS

Table of Contents

Section **Page No**

1. Introduction

1.1 The eight input UHF transmitter has been designed to operate in conjunction with the EMS IRIS 7256 radio receiver. The transmitter unit is a 12 volt operated device and comprises of a 500mW transmitter fitted with an additional printed circuit board allowing the activation of eight opto isolated inputs. Each of the inputs can be separately programmed into the IRIS receiver therefore allowing individual identification via text descriptions. The inputs themselves can also be programmed to operate either normally open or normally closed and the transmitted data from the input can be selected from Alarm, Local, Tamper, Low Battery or Remote Reset.

1.2 As each input is opto isolated, a negative is required to be applied to one side of the input. To trigger the input, a positive voltage should be applied if the contact is programmed as normally open or removed if normally closed (see Figure 4 on page 19 for details). On an input activation a signal will be transmitted to the receiver and displayed in the format programmed i.e. Alarm: Zone Area 1 for an input that has been set as an Alarm input and programmed with the text description Zone Area 1.

2. Tools & Test Equipment

2.1 Only standard hand tools are required to install the transmitter unit. The transmitter is supplied with the inputs factory set as follows: -

INPUT NUMBER	TYPE	INPUT ORIENTATION
1	Alarm	Normally Closed
2	Alarm	Normally Closed
3	Alarm	Normally Closed
4	Alarm	Normally Closed
5	Alarm	Normally Closed
6	Alarm	Normally Closed
7	Alarm	Normally Closed
8	Alarm	Normally Closed

If an inputs orientation requires alteration, Windows HyperTerminal with a serial a lead will be required.

3. Equipment Required:

7941 Eight Input Transmitter
7256 IRIS Receiver with standard 7200 software
7202 software will be required if the remote reset facility input is to be used.
Power Supply Units
Windows HyperTerminal with serial lead if programming changes are required.

3.1 Remote devices and high gain aerials may also be required depending upon the customers specification and requirements. Please note both the eight input transmitter and the IRIS receiver will require an external power supply. Figure 1 shows a typical IRIS radio system, whilst Figure 2 shows an alternative system using a Single Channel 7703 Receiver: -

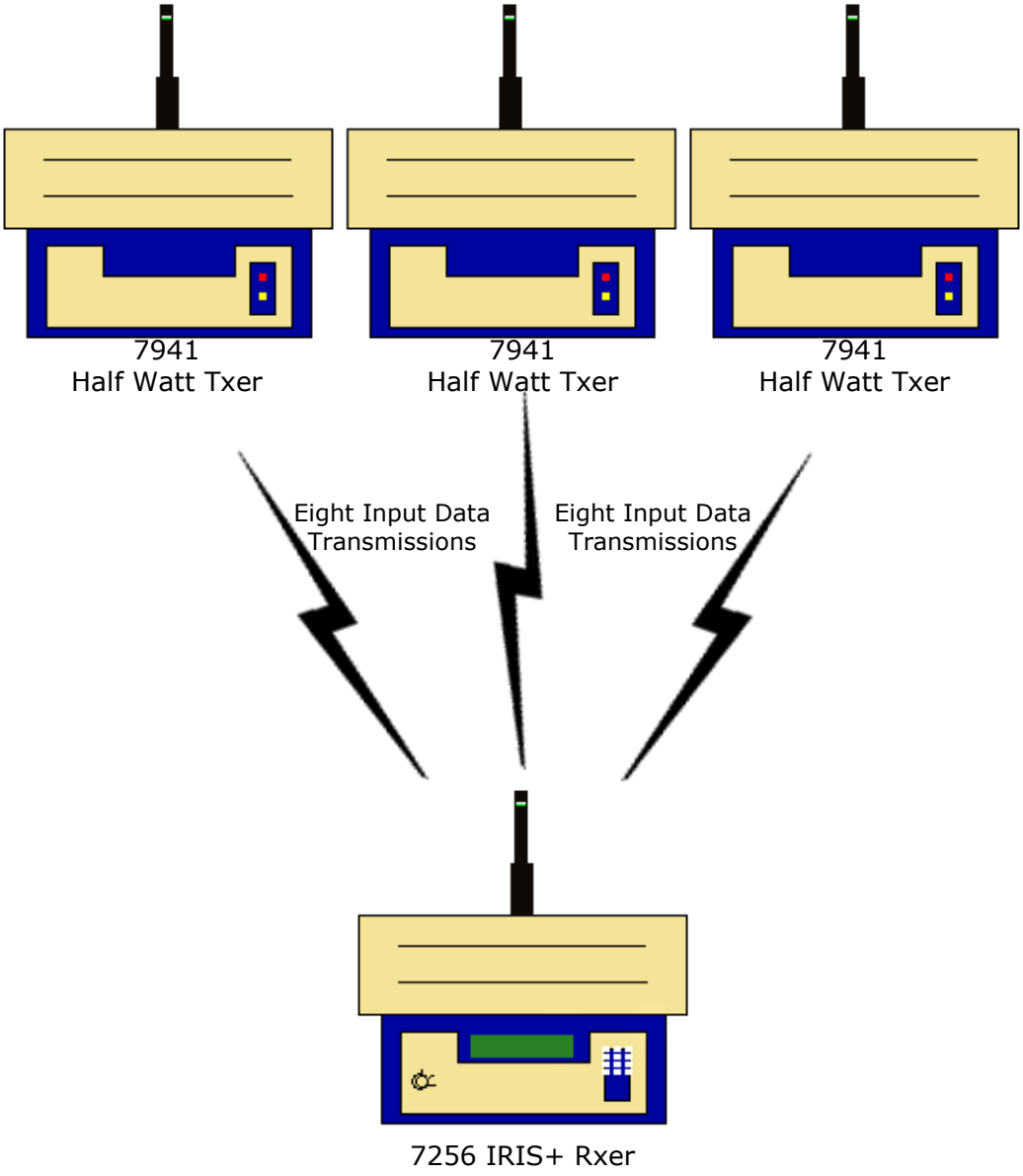


Figure 1

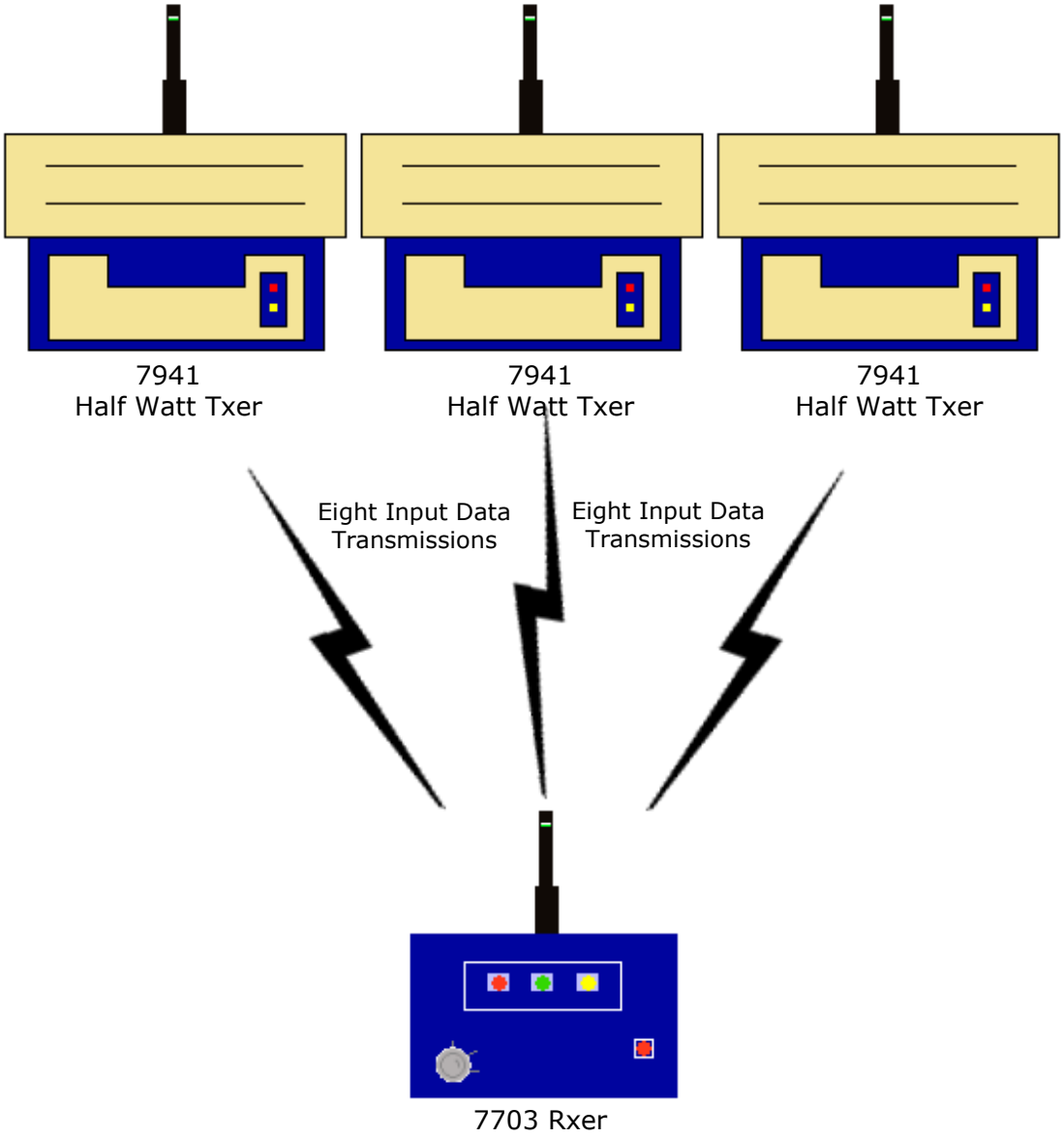


Figure 2

4. Programming Connection Details

4.1 The computer to transmitter physical connection details are as follows:-

COMPUTER	ISOLATED RS 232 PORT
PIN 2	TX OUT
PIN 3	RX IN
PIN 5	COMMON CONNECT

4.2 All Computer to HyperTerminal connections are shown below in Figure 3.

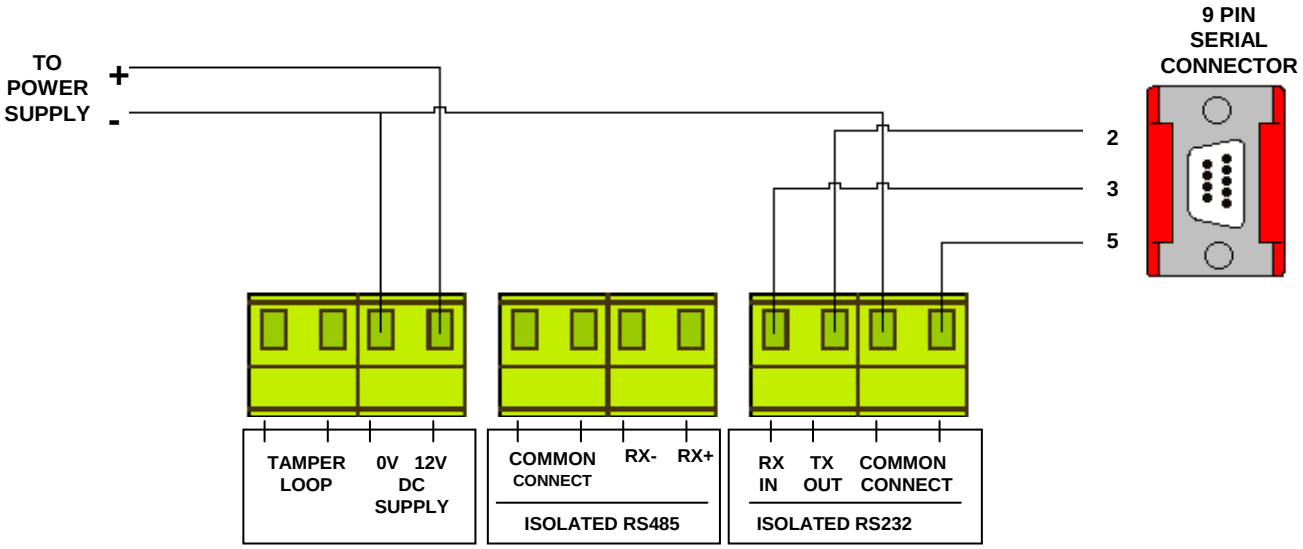


Figure 3

5. Input Programming

5.1 The transmitter unit has the facility of allowing each of it's inputs to be individually configured. The settings for each input are as follows with the menu commands required shown in brackets:- Inputs unique identification code (ID). Orientation of the input to normally open or normally closed (CON). Inputs transmitted data on activation, which ranges from Alarm, Local, Low Battery, Reset, Tamper and Not Used (TYPE). Inputs mode of operation which can be selected between a contact operated device which will also transmit input restored data or a hand push device which must be used for certain types of transmitted data and does not transmit restore data (MODE). A full explanation of all input settings and the operation of the inputs if selected is described in more detail in the following paragraphs under their menu commands headings.

5.2 The inputs have their settings defaulted to the following parameters: -

Inputs 1-8..... ID: A0001-A0008
Con: Normally Closed
Type: Alarm
Mode: Current State

5.3 To allow access into the programming menu the computer should be set up using windows HyperTerminal:-

PLEASE NOTE: Examples shown below are from Windows XP. Other versions of Windows may vary.

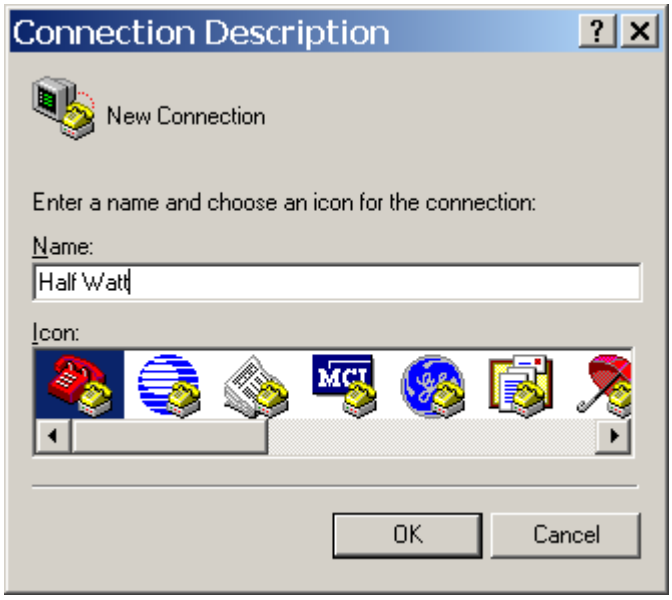
To start a new HyperTerminal session, click on the 'Start' button.

Then select 'Programs' and then 'Accessories'.

Now select 'Communications', then 'HyperTerminal'.

You will then be presented with the following screen: -

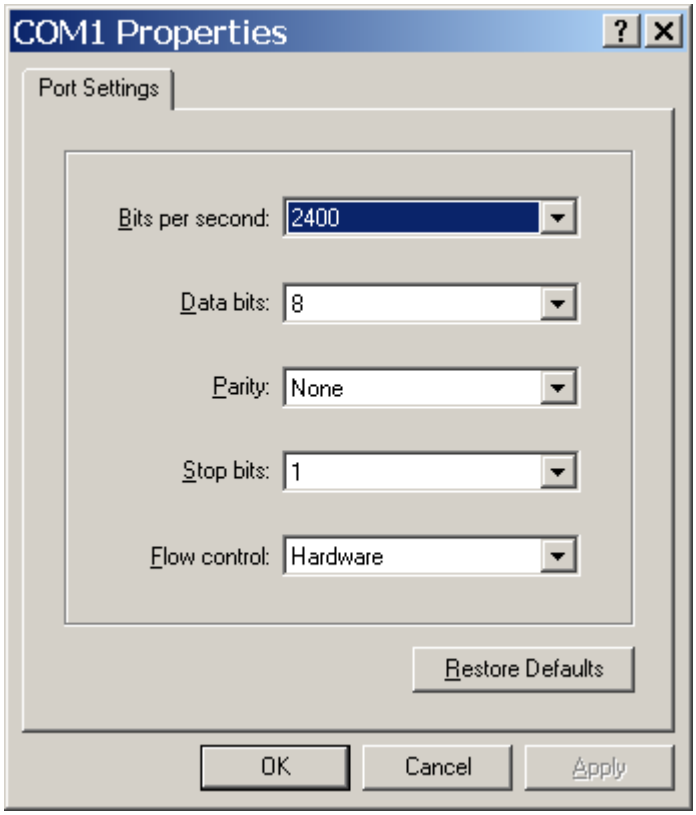
Now enter your desired connection description: -



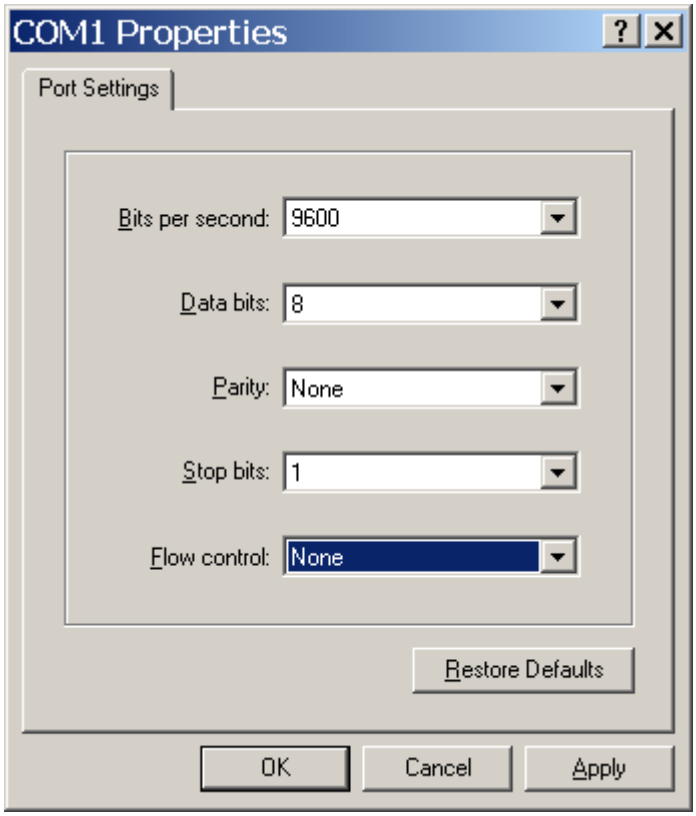
Then click on the 'OK' button, and the screen will change to the following: -

Now select the Comm Port required as below: -

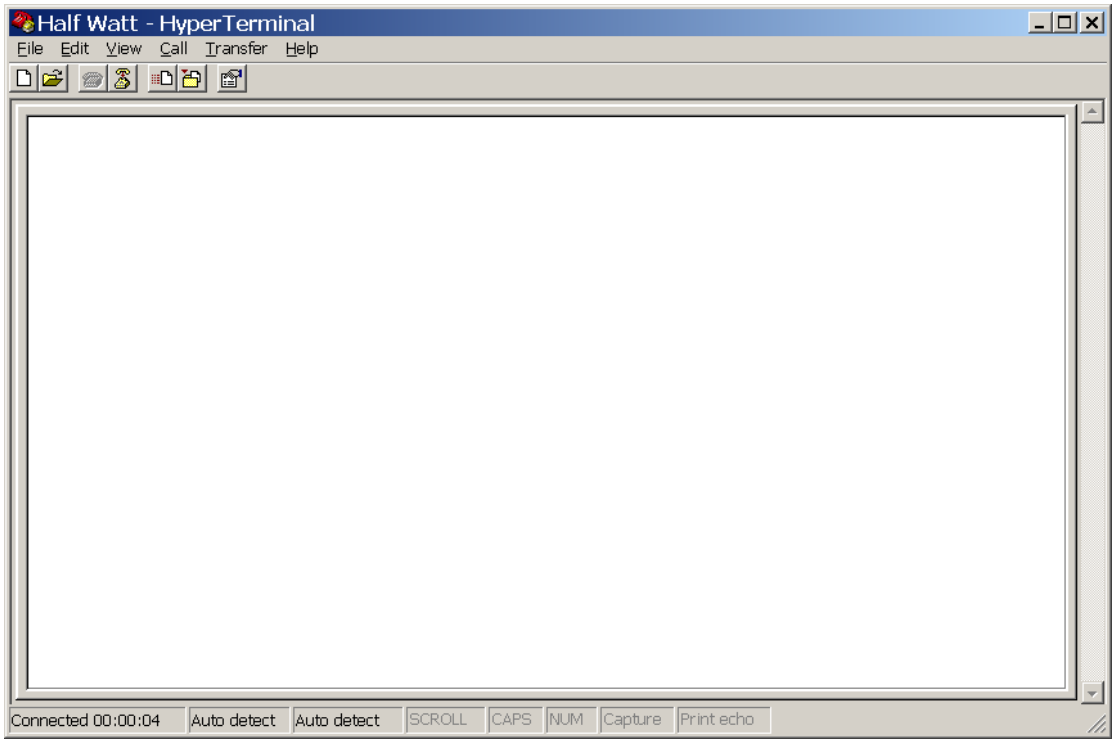
Then click on the 'OK' button, and the screen will change to the following screen:



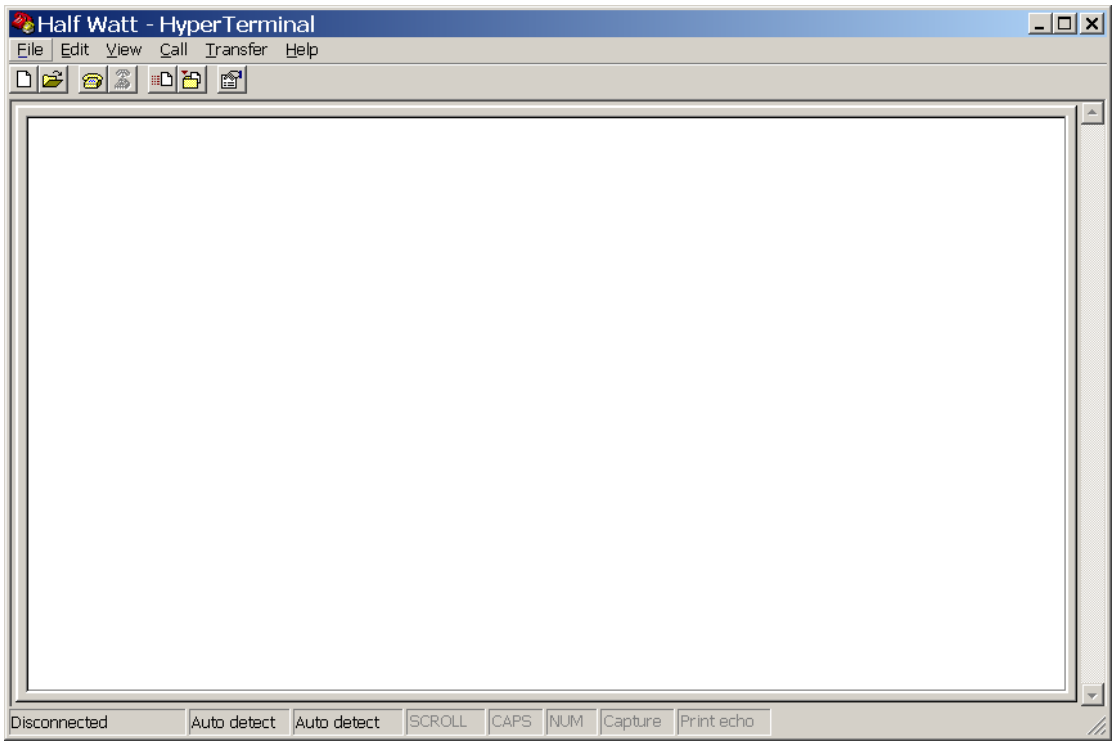
Now select the following settings: -



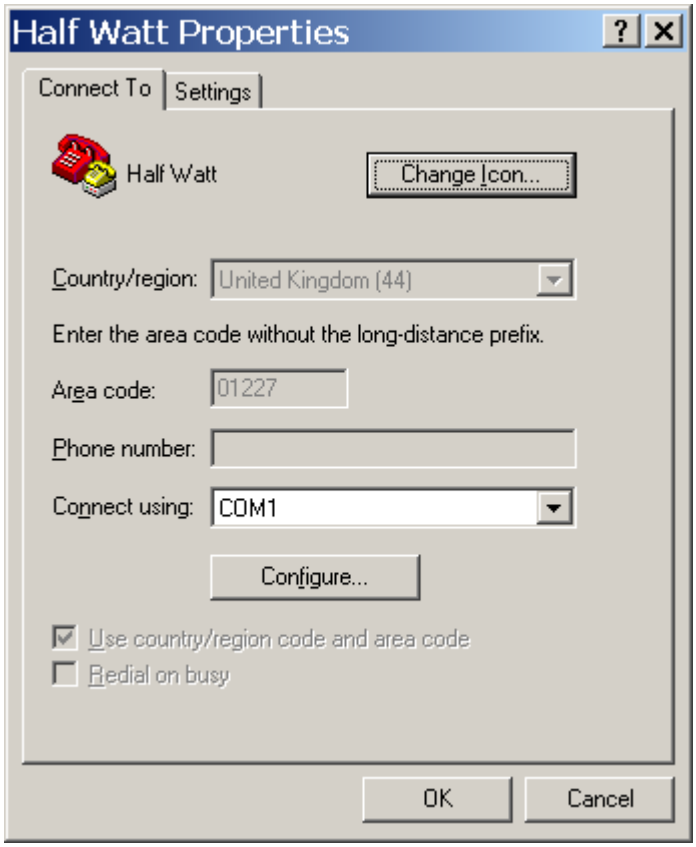
Once completed, click on the 'Apply' button and then the 'OK' button. The screen will change to display:-



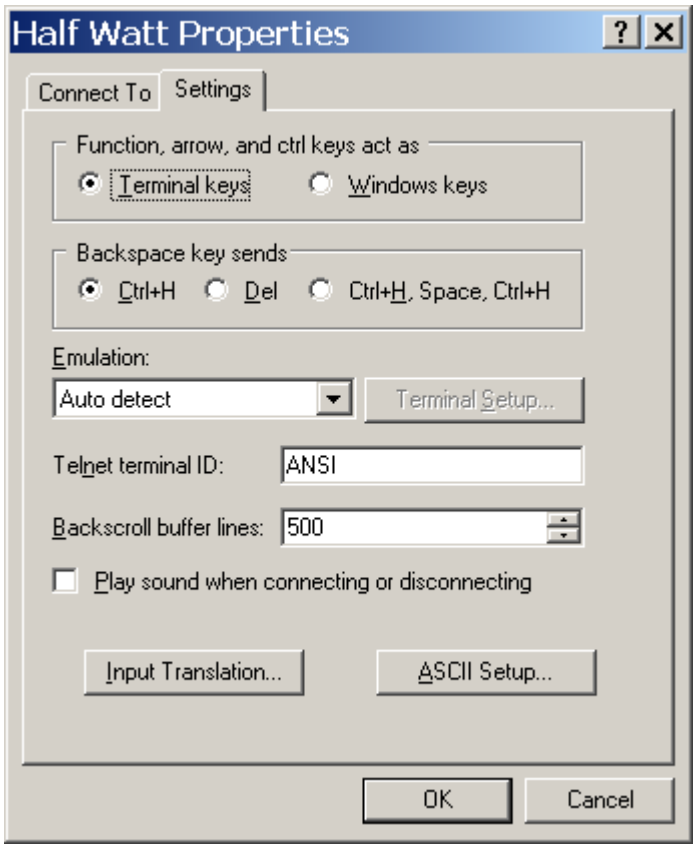
Now select 'Call' and 'Disconnect and the screen will change to display: -



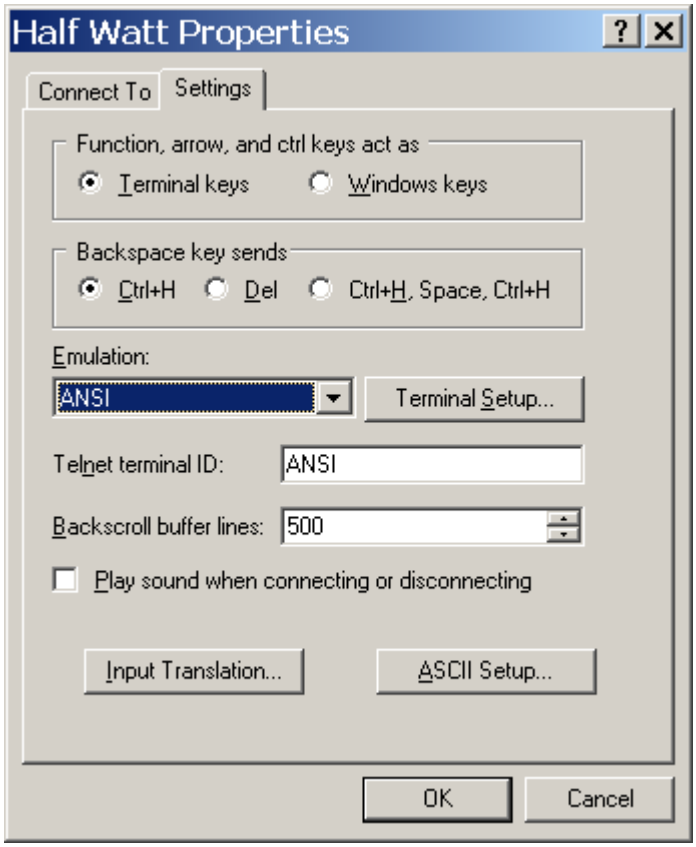
Now select ‘File’ and ‘Properties’. The screen will change to display:-



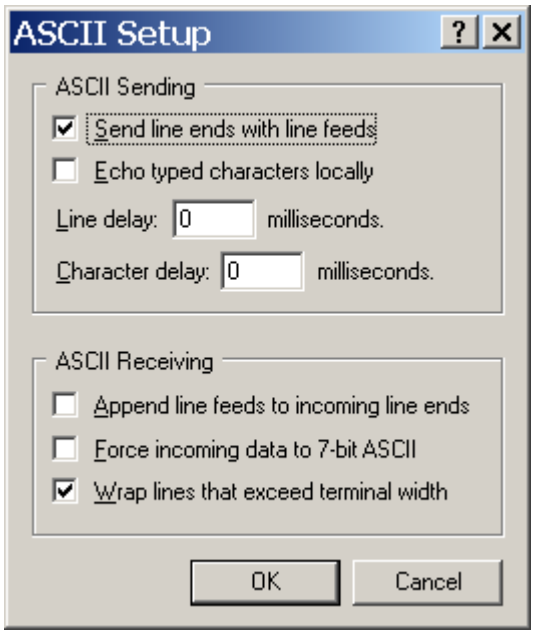
Now select the ‘Settings’ tab and the screen will change as below: -



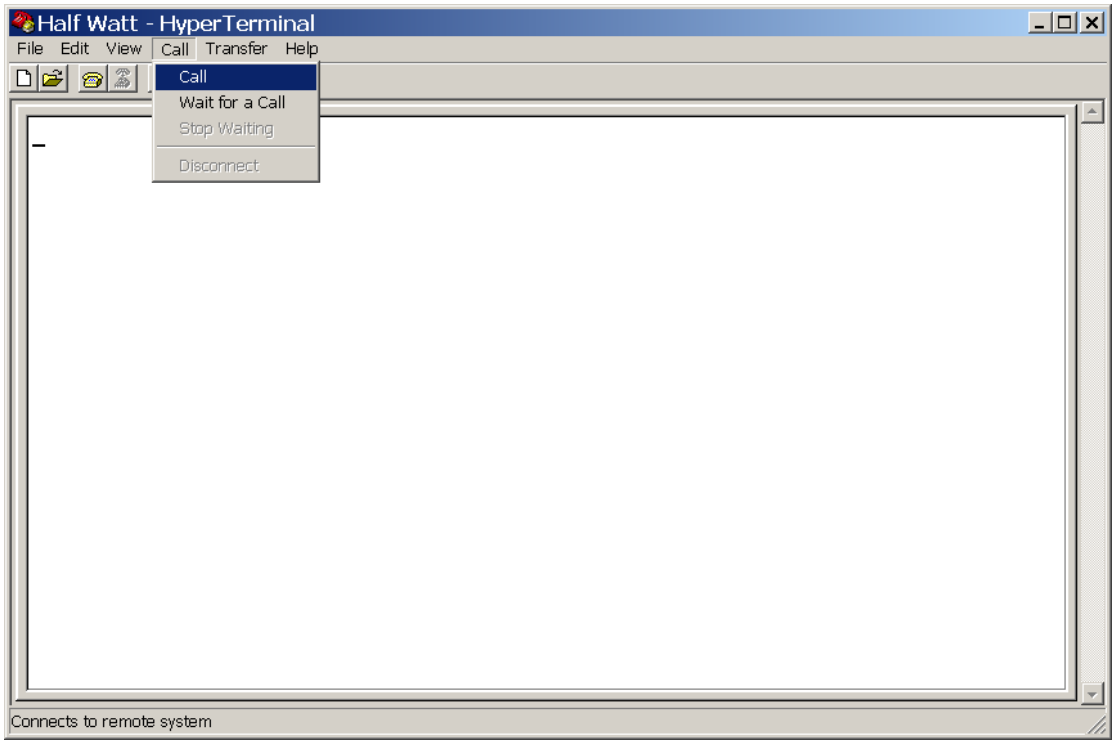
The Settings should be set as follows: -



Once the settings are as above, click on the 'ASCII Setup' button and check that the settings are as follows: -



Once the settings are as above, click on the 'OK' button then on the next window click on the 'OK'. We can now establish a connection by selecting 'Call' and 'Call' as below: -



Once completed, HyperTerminal is configured.

Please Note: To prevent future reconfiguration, the HyperTerminal session can be saved for future use.

6. ID

6.1 Each of the transmitters inputs have their individual identification numbers set from this menu. This allows the input to be added into the IRIS receiver with a unique number. The identification numbers are defaulted to range from A0001 - A0008 for inputs 1-8. Under normal circumstances this menu should not require changing.

6.2 The only time the default settings will require changing is if additional transmitter units have been added to an existing installation. If this is the case a print out should be taken from the IRIS Receiver and the transmitter ID settings checked. The new transmitter can then be added to the system ensuring that the new inputs id's do NOT correspond with any already programmed into the IRIS unit.

6.3 To change the inputs identification number, from the command menu type **id** and press the **enter** key. The display will then show:

Input No: 1
ID code (hex) is A0001
Change Y/N?

To change the ID press Y and then the enter key, the display will now show:

New ID Code (hex)

Enter the new ID code and press enter. If the hex number is a valid number the display will change to show:

New ID Code (hex) NNNNN (Where N represents new code)
NNNNN

Input No: 2
ID code (hex) is
Change Y/N?

Repeat for all inputs if changes are required. If all changes are complete press the enter key until the display returns to:

COMMAND id, con, type, mode
Txd, quit >

7. CON

7.1 Each of the transmitters inputs can be programmed to operate via a normally open connection or normally closed configuration. The default setting for all of the inputs is to normally open. If this requires changing, from the command menu type **con** and press the enter key. The display will then show:

Input Number 1 is N/O
Change Y/N

8. TYPE

7.1 Each of the transmitters inputs have a **type** setting, which sets the kind of alarm data that is transmitted to the Iris Receiver. The setting is defaulted to alarm for each of the inputs, but can be changed to one of the following depending on the overall systems requirements:-

8.2 **NU = NOT USED: -** If selected no output transmission will be generated when triggered and no call in's signals from the input will be transmitted.

8.3 **RESET: -** If selected on triggering this input the IRIS receiver will be remotely reset. To ensure correct operation this input requires it's mode setting programmed to hand push, it must also be added into the IRIS receiver as an Interrogator hand push and the IRIS requires 7202 Interrogator software installed.

8.4 **LOW BATTERY: -** If selected on triggering this input a low battery alarm transmission will be sent to the IRIS receiver. To ensure correct operation this input requires it's mode setting programmed to hand push and should be added into the IRIS as an opposed action hand push. It should be noted that the first transmission from a low battery input will not be seen but every subsequent transmission from the input will be registered on the IRIS.

8.5 **TAMPER: -** If selected on triggering this input a tamper alarm transmission will be sent to the IRIS receiver. To ensure correct operation this input requires it's mode setting programmed to hand push and should be added into the IRIS as an opposed action hand push.

8.6 **LOCAL: -** If selected on triggering this input a local alarm transmission will be sent to the IRIS receiver. This input can have it's mode setting set to either hand push or contact and can be added into the IRIS as an opposed action hand push or N/O contact operated transmitter. If the mode is set to contact the input should be added into the IRIS as a Local N/O contact, this will then send input restored data when the input goes clear. If the input is not clear when the IRIS receiver is reset, a message will be displayed on the IRIS telling you that the input has not reset. If the mode is set to hand push the input should be added into the IRIS receiver as an opposed action hand push, this does not transmit input restored data as explained above.

8.7 **ALARM: -** If selected on triggering this input a full alarm transmission will be sent to the IRIS receiver. This input can have it's mode setting set to either hand push or contact and can be added into the IRIS as an opposed action hand push or N/O contact operated transmitter. If the mode is set to contact the input should be added into the IRIS as an Alarm N/O contact, this will then send input restored data when the input goes clear. If the input is not clear when the IRIS receiver is reset, a message will be displayed on the IRIS telling you that the input has not reset. If the mode is set to hand push the input should be added into the IRIS receiver as an opposed action hand push, this does not transmit input restored data as explained above.

8.8 If the type requires changing, from the command menu type **type** and press the enter key. The display will then show:-

Input Number 1 is Alarm
Change Y/N ?

To change press Y and then enter. The display will then change to the following:

Enter new type 0 = NU, 1 = RESET
2 = LOWBAT, 3 = TAMPER, 4 = LOCAL, 5 = ALARM

Enter the required number and press enter. The display will now show:

Input Number 1 is NNNNNN (Where N is the new option chosen)

Input Number 2 is Alarm
Change Y/N ?

If you don't require the input to be changed press N or Enter. The display will then change to show the next input.

This continues until all 8 contacts are looked at. On answering Y/N to contact 8 the display will change to show the command menu. To check settings type **type** to re-enter menu.

9. MODE

9.1 Each of the transmitters inputs have a **mode** setting, which sets the operation of the input. The unit has two modes contact and hand push. The default for all inputs is set to contact.

9.2 If contact is selected the input should be added into the IRIS receiver as a N/0 contact operated transmitter, this will then cause the input to transmit data on both an activation of the input and the reinstating of the input. This will be shown on the IRIS when its being reset, as it will show which inputs have not transmitted their restored signals by showing that the input is not reset. This contact setting is only recommended when the alarm type is set to either a local or alarm transmission.

9.3 If hand push is selected the input should be added into the IRIS receiver as an opposed action hand push transmitter, this will then cause the input to transmit data on an activation of the input. This setting can be selected for all alarm types and is imperative for the correct activation of alarm types low battery, tamper and reset.

9.4 If the mode requires changing, from the command menu type **mode** and press the enter key. The display will then show:

Input Number 1 is CONTACT
Change to HANDPUSH Y/N ?

To change press Y and then enter. The display will then change to the following:

Input Number 1 is HANDPUSH

Input Number 2 is CONTACT
Change to HANDPUSH Y/N ?

If the input does not require to be changed press N or Enter. The display will then change to show the next input.

This continues until all 8 contacts are looked at. On answering Y/N to contact 8 the display will change to show the command menu. To check settings type **mode** to re-enter menu.

10. TXD

9.1 The txd function when entered causes each of the inputs being used to transmit three bursts of call in data. To enter this function type **txd** from the command menu and press the enter key. The display will then show,

Transmit Call Ins
Call in 08EA0000
Call in 08EA0000
Call in 08EA0000
Call in 08EA0001 }
Call in 08EA0001 } This is call in data for input 1
Call in 08EA0001 }

This is then repeated for all active inputs showing each of the inputs ID's in three transmitting bursts. Once completed it will carry on repeating the above sequence. To exit this function press the enter key 3 times.

11. QUIT

11.1 To update any information changed and exit the programming mode **quit** must be typed followed by pressing the enter key. The program mode is then exited. The display will then show any transmissions from the transmitter in the following format:

Transmitting Data: (hex transmission and ID code shown)

12. LOAD DEFAULT VALUES

12.1 This command is not actually shown on the menu but can be used to default all of the systems inputs. Default values for the inputs are as follows:

Inputs 1-8.....	ID	A0001-A0008
	Con	Normally Open
	Type	Alarm
	Mode	Contact

12.2 To change all of the inputs to their default settings type **load defaults** and press the enter key. The display will now show:

Load Default Values Y/N ?

Press the Y key and then enter the display will then change to show:

Please Wait.....

The system will then return to the command menu.

13. Internal Input Wiring

Connection Drawing

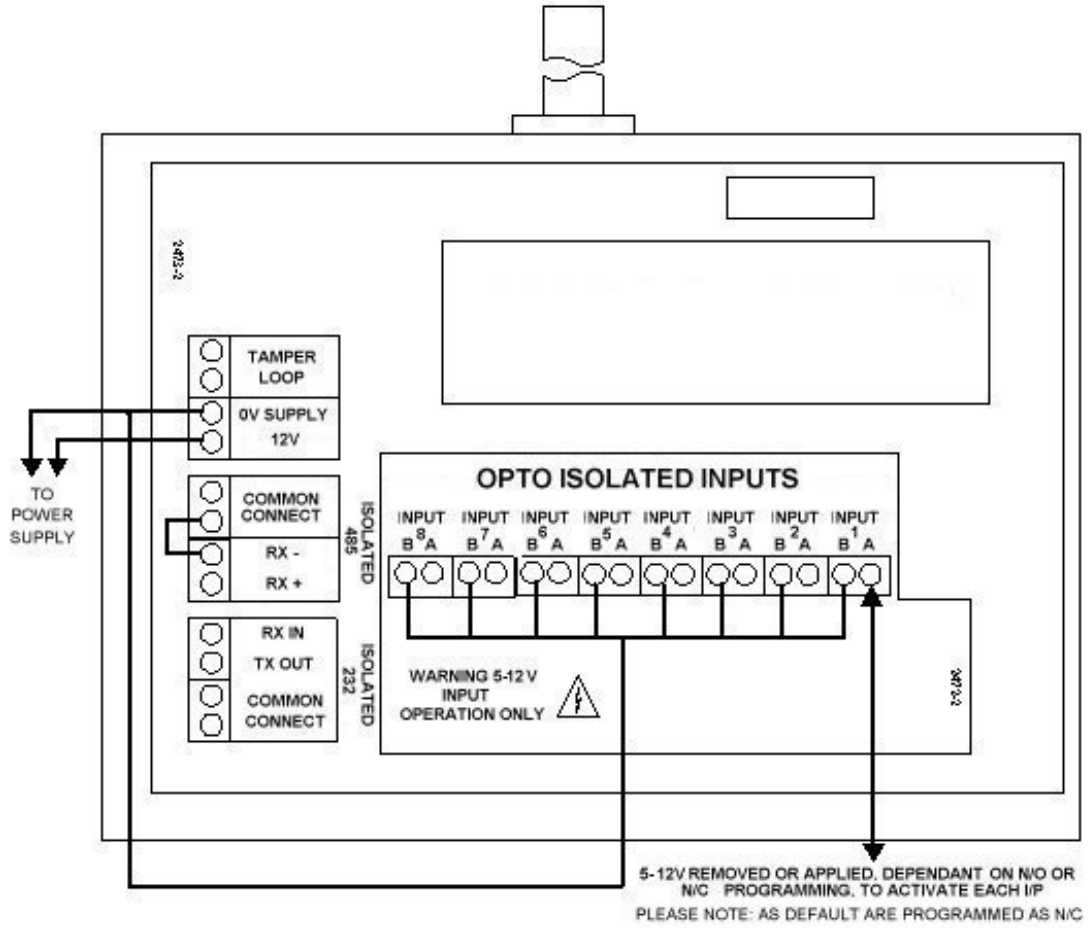


Figure 4

14. Adding An Input (Hand push Mode) Into The IRIS Radio Receiver

The following sequence of operations is required when adding an input with the mode setting programmed as hand push into the UHF IRIS Radio Receiver.

14.1 With the control keyswitch in the "CLEAR" position the screen should now display:

```
        System Clear

01/10/93          13:26
```

14.2 Turn the control keyswitch to the "RESET" position. The screen should now display:

```
   *** SYSTEM RESET ***
                    13:26
```

14.3 Press the "0" key, and the screen will now display:

```
Enter Your PIN
For Menus > _

^=Done v=Del   13:26
```

14.4 Enter the engineering default PIN: "221100" and then press the "^" button, the screen will now display:

```
 | ** Main Menu    **|
     >Pins & Access  <
    | System Support  |
2=Help            13:27
```

14.5 Press the "v" button until screen displays:

```
 | Time and Date   |
 > Radio Setup     <
 | Output Setup    |
   2  =  Help       16: 37
```

14.6 Press the "1" button and the screen will display:

```
    | **  Radio Setup  ** |
    > Add Transmitter  <
 |  Txer Details       |
2 = Help          16:37
```

14.7 Press the "1" button and the screen will display:

```
     | -Add Transmitter-|
     > Add Hand push  <
  |  Add Moneyclip  |
2 = Help          16:37
```

14.8 Press the "^" or "v" buttons to highlight the type of transmitter to be added, and press the "1" button and the screen will change to display the options available:

```
    | - Hand push Type  - |
    >  Opposed Action  <
    |    Non-Opposed     |
2 = Help          16:37
```

14.9 With the opposed action between the > and < arrows, press the "1" button and the screen will change to display:

```
     Operate Transmitter
        NOW or press
       Escape to cancel
                    16:38
```

14.10 Activate the required input to be added by applying or removing voltage (depending upon N/O or N/C input) and the screen will display:

Release all buttons NOW **16:38**

14.11 After a short period of time the screen will change to display:

Operate Transmitter Again or press Escape to cancel **16:38**

14.12 Using the same operation, once again generate a transmission, after a short period of time the screen will change to display:

Hand Push 001 Added Push any key **16:38**

14.13 You may now add additional inputs by repeating the actions detailed. If no further inputs are to be added then escape from this menu by pressing the 3 button on the keypad or returning the control keyswitch to the CLEAR position**.**

15. Adding An Input (Contact Mode) Into The IRIS Radio Receiver

The following sequence of operations is required when adding an input with the mode setting programmed as contact into the UHF IRIS Radio Receiver.

15.1 With the control keyswitch in the "CLEAR" position the screen should now display:

```
        System Clear

01/10/93          13:26
```

15.2 Turn the control keyswitch to "RESET". The screen should now display:

```
*** SYSTEM RESET ***
                  13:26
```

15.3 Press the "0" button, and the screen will now display:

```
Enter Your PIN
For Menus > _

▲=Done ▼=Del    13:26
```

15.4 Enter the engineering default PIN: "221100", then press the "▲" button, and the screen will display:

```
  |** Main Menu **     |
     > Pins & Access  <
    |  System Support  |
2=Help              13:27
```

15.5 Press the "▼" button until the screen displays:

```
  |  Time and Date   |
   >Radio Setup     <
  |  Output Setup    |
   2  =  Help          16: 37
```

15.6 Press the "1" button and the screen will display:

```
    | **  Radio Setup  ** |
     >  Add Transmitter  <
  |  Txer Details         |
2 = Help              16:37
```

15.7 Press the "1" button and the screen will display:

```
     | -Add Transmitter-|
     >  Add Hand push   <
   |  Add Moneyclip   |
2 = Help              16:37
```

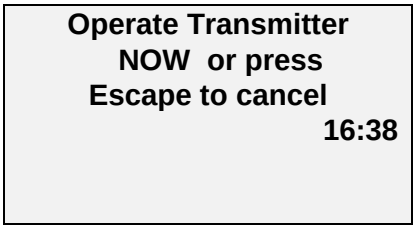
15.8 Press the "▼" button until the screen displays:

```
  |  Add Foot - Trip   |
     >  Add Contact Txer <
     |  Add Interrogator  |
2 = Help              16:37
```

15.9 Press the "1" button and the screen will display:

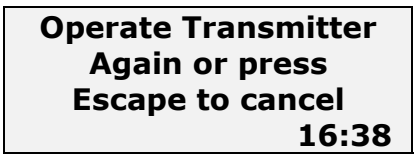
```
    |  -- Contact Type --  |
    >       Alarm N/O       <
    |       Alarm N/C       |
2 = Help              16:37
```

15.10 Select Alarm N/O or Local N/O by using the "⮝" and "⮟" buttons and when the required setting is between the > and < arrows press the "1" button and observe the display changes to:

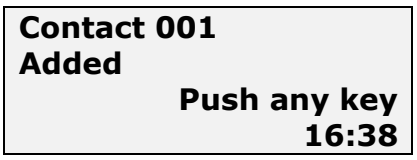


15.11 Activate the required input to be added by applying or removing voltage (depending upon N/O or N/C input) and the screen will display:

15.12 After a short period of time the screen will change to display:



15.13 Using the same operation, once again generate a transmission, after a short period of time the screen will change to display:

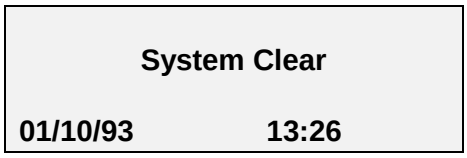


15.14 You may now add additional inputs by repeating the actions detailed. If no further inputs are to be added then escape from this menu by pressing the "3" button on the keypad or returning the control keyswitch to the "CLEAR" position.

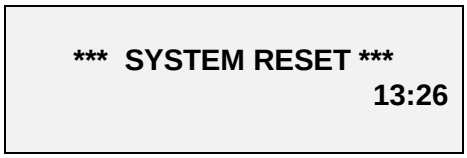
16. Adding A Reset Input (Hand push Mode) Into The IRIS Radio Receiver

The following sequence of operations is required when adding an input, which is required to reset the IRIS receiver. The inputs mode setting must be programmed as a hand push and the input must be programmed into the UHF IRIS Radio Receiver as an Interrogator transmitter. It should be noted that the IRIS receiver must have installed 7202 Interrogator software for this function to operate.

16.1 With the control keyswitch in the "CLEAR" position the screen should now display:



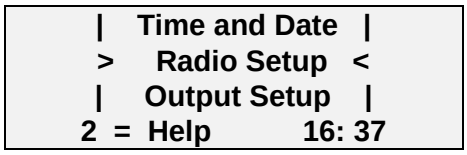
16.2 Turn the control keyswitch to the "RESET" position. The screen will now display:



16.3 Press the "0" key, and the screen will display:

16.4 Enter the engineering default PIN: "221100" and press the "" button, and the screen will now display:

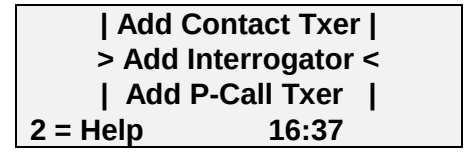
16.5 Press the "" button until the screen displays:



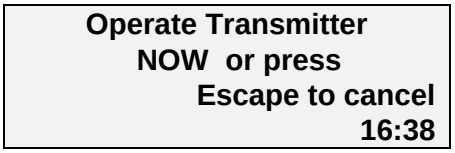
16.6 Press the "1" button and the screen will display:

16.7 Press the "1" button and the screen will display:

16.8 Press the "" button until the screen displays:

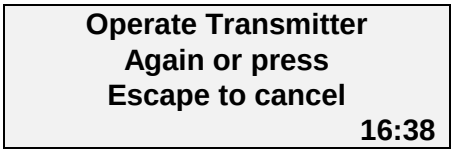


16.9 Press the "1" button and the screen will display:

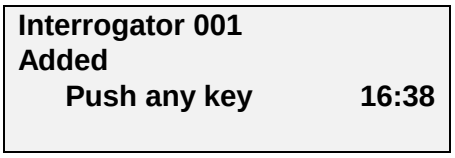


16.10 Activate the required input to be added by applying or removing voltage (depending upon N/O or N/C input) and the screen will display:

16.11 After a short period of time the screen will change to display:



16.12 Using the same operation, once again generate a transmission, after a short period of time the screen will change to display:



16.13 You may now add additional inputs by repeating the actions detailed. If no further inputs are to be added then escape from this menu by pressing the 3 (three) on the keypad or returning the key to the "**CLEAR"** position**.**

17. Assigning Text Description For An Input

17.1 Repeat steps 16.1 to 16.4.

17.2 Press the "⩛" button until the screen displays:

```
|  Time and Date  |
>   Radio Setup  <
|  Output Setup  |
2=Help          16: 37
```

17.3 Press the "1" button and the screen will display:

```
| **  Radio Setup  ** |
> Add Transmitter  <
|     Txer Details     |
2=Help          16:37
```

17.4 Press the "⩛" button and the screen will display:

```
| Add Transmitter  |
>   Txer Details   <
|  Set Radio Rules  |
2=Help          16:37
```

17.5 Press the "1" button and the screen will display:

```
|  -  Txer Details  -  |
> Name by Number <
|     Name by Tx     |
2=Help          16:37
```

17.6 Press the "⩛" button and the screen will display:

```
|  Name by Number  |
>     Name by Tx    <
|     View Names     |
2=Help          16:37
```

17.7 Press the "1" button and the screen will display:

```
Operate Transmitter
   NOW  or press
      Escape to cancel
                  16:38
```

17.8 Generate a transmission by activating the input that requires re-texting and the screen will display:

```
Release all buttons
        NOW
                  16:38
```

17.9 After a short period of time the screen will display:

```
Operate Transmitter
   Again or press
      Escape to cancel
                  16:38
```

17.10 Once again generate a transmission from the same input, the screen will change to display:
The current selected character is shown above the centre bar.

```
|                    |
|                    |
 4<HIJKL M NOPQR>6
2= Help   |     16:38
```

17.11 By using the "4" button to move left or the "6" button to move right, move to the letter or number required and press the "5" button to select the character.

17.12 Repeat 16.11 until all letters have been selected. Once completed, Press the "⮝" button to save the information.

17.13 Once completed you may now escape from this menu by pressing the "3" button on the keypad until the "SYSTEM RESET" message appears or by returning the control keyswitch to the "CLEAR**"** position.

KEY	FUNCTION
0	Enters a blank space into the new device name being entered.
3 4	Exits to the previous menu Moves the alphabet wheel of characters to the **Left**, by one character space at a time.
5	Enters the character in the **centre** directly above the character **selector |.**
6	Moves the alphabet wheel of characters to the **Right**, by one character space at a time.
7	Moves the flashing cursor to the **left**, through the new device name by one character space at a time.
8	Moves the alphabet wheel of characters to the **Right**, by 12 character Spaces at a time.
9	Moves the flashing cursor to the **Right**, through the new device name by one character space at a time.
⮜	Backspace Key, **Deletes** by one character. (Deletes to the left only)
⮝	Saves and completes the current activity and returns the program to the appropriate display.