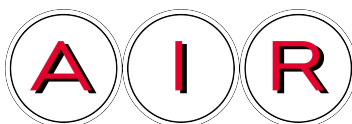ICT *The Power of Reliability*

ICT DC DISTRIBUTION PANEL
ICT180S–12B BROADBAND MODEL
(SERIES 2)

INSTRUCTION MANUAL

Distributed by

Communication Solutions When It Matters

www.airadio.com

INNOVATIVE CIRCUIT TECHNOLOGY LTD.

TABLE OF CONTENTS

⚠ WARNING

Risk of serious personal injury or damage to equipment and property! Always observe the following:

▸ Use an appropriately rated over–current protection device in line with the main battery connection to the Distribution Panel input to protect the high current input wiring

▸ Use an appropriately rated disconnect switch or circuit breaker in line with the Distribution Panel input to enable installation and service with the battery or power source disconnected

▸ Always disconnect main power source before installing or removing fuses, or connecting or disconnecting wiring

▸ Use wire and connectors rated for the maximum load current and size of fuse or circuit breaker

▸ Carefully observe wiring polarity when making input and output connections

▸ Securely tighten all connections and insert fuses fully

▸ No internal user serviceable parts. Refer all product service to an authorized ICT Ltd. service facility

⚠ CAUTION

Risk of personal injury or damage to equipment! Always observe the following:

▸ Fuses may be HOT to touch. Disconnect power and allow to cool before removing or replacing

▸ Wiring terminals may be HOT to touch. Disconnect power and allow to cool before disconnecting load wires

▸ Install in a protected environment, keep sources of moisture away from unit

PRODUCT DESCRIPTION

The **ICT180S–12B** Broadband Distribution Panel is designed for –48VDC applications. It provides 12 output positions that are individually protected by GMT type fuses and are rated up to 15A each. These fuses are located on the front of the panel for easy monitoring and replacement. Each BAT (battery) output terminal point is connected through a fuse to a BAT internal bus. All RTN (return) output terminal points are connected to a RTN internal bus.

There are five alarm inputs on the back of the panel for connecting external Dry Contact sensors for site monitoring and reporting of alarms such as door, water, and smoke detectors.

System voltage, system current, output currents, fuse status, and alarm input status can be monitored onsite through the LCD graphics display. Fuse status is also displayed by an LED indicator located over each fuse. Form "C" alarm contacts (C/NO/NC) are provided on the back of the panel which can be connected to an external alarm circuit for monitoring alarms generated by the panel.

Remote monitoring is available through the integrated security protected Ethernet communications port on the back of the panel. The panel has a built–in web server with an embedded web–based GUI that can be accessed using any standard commercial web browser such as Internet Explorer. The web server not only displays panel information, it can also be set up to send an alarm to user–defined email accounts in the event a fault occurs. The web server can also be used for data logging of up to 30 days of time stamped event information. All these features are packaged in a 1RU enclosure to save valuable rack space and fit standard 19" equipment racks. The rack mounting position is adjustable.

FRONT PANEL
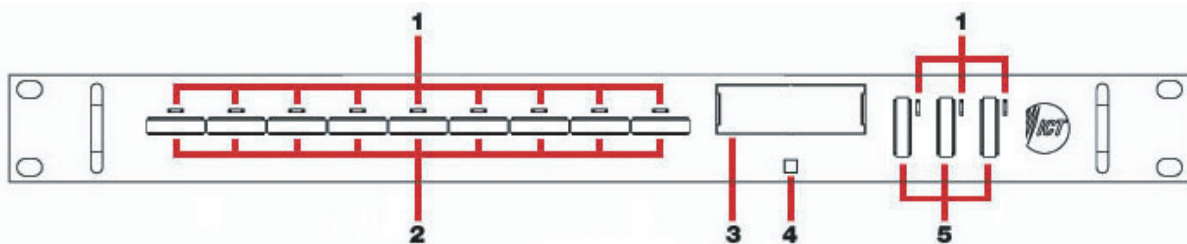
Figure 1.

1. FUSE STATUS LEDs: Turns on when a fuse is blown.
2. GMT FUSES: Location of the GMT fuses rated up to 15A.
3. LCD: Displays system voltage, system current, output current and fuse status for each of the 12 output positions.
4. OUTPUT SELECT BUTTON: For switching between LCD screens, and resetting network, web server and password settings to original factory default values.
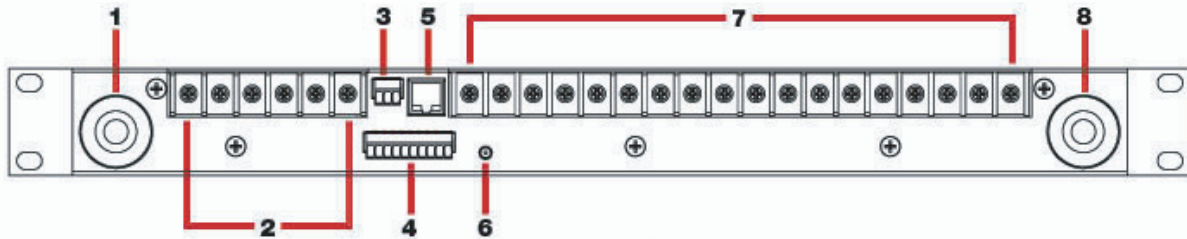5. GMT FUSES: Location of the GMT fuses rated up to 15A.

BACK PANEL

Figure 2.

1. RTN (RETURN +) INPUT STUD: For DC power source connection up to 180A peak and 150A continuous.
2. OUTPUT TERMINAL BLOCK 10 – 12: For DC load connections up to 15A each pair.
3. ALARM FORM "C" CONTACTS: For external alarm circuit to monitor alarms generated by the panel.
4. ALARM SENSOR INPUTS: Inputs for external Dry Contact sensors.
5. LAN PORT: For remote monitoring via TCP/IP network.
6. CHASSIS GROUND STUD: For Earth ground connection.
7. OUTPUT TERMINAL BLOCK 1 – 9: For DC load connections up to 15A each pair.
8. BAT (BATTERY –) INPUT STUD: For DC power source connection up to 180A peak and 150A continuous.

INSTALLATION

1. Inspect panel and accessories to make sure everything is complete and in good condition.

2. For rack set up, install panel on the rack using appropriate size screws and star washers on all four mounting holes. If equipment rack is not electrically connected to Earth ground, connect a ground cable from the ground stud on the back of the panel to a known Earth ground point. Otherwise, the four mounting screws and washers may be sufficient for earth ground connection.

OR

For non–rack set up, connect a ground cable from the ground stud on the back of the panel to a known Earth ground point.

3. Remove the plastic shield(s) covering the output terminal block(s) located on the back of the panel. Connect the RTN (+) of the load to the RTN terminal point and the BAT (–) of the load to the BAT terminal point.

4. Install fuse on the front of the panel for each output terminal block. The fuse number on the front of the panel matches the output terminal block number on the back of the panel. Consult your local electrical codes for wire ampacity and fuse sizing. Typically, fuses and wiring are derated to 80% of their rating (e.g. 12 Amps maximum for a 15 Amp fuse).

5. Remove the plastic caps covering the input insulated studs. Connect the RTN (+) of the power source to the RTN insulated stud and the BAT (−) of the power source to the BAT insulated stud.

6. Re−install plastic shield(s) to the output terminal block(s) and plastic caps to the input studs.

7. For remote monitoring and power control, connect your network interface to the Ethernet port on the back of the panel. The recommended cable for Ethernet connection is Cat5e UTP network cable.

8. The Alarm Form "C" Contacts on the back of the panel can be connected to an external alarm circuit to monitor alarms generated by the panel. Depending on the alarm circuit (refer to table 2), connect it between normally open (NO) and common (C), between normally close (NC) and common (C), or both. The built−in web server controls this alarm. The alarm connector can be unplugged from the panel for easy installation.

9. For monitoring external Dry Contact sensors, connect each sensor between an Alarm Input (1 – 5) and common (C) on the alarm input connector. The alarm input connector can be unplugged from the panel for easy installation. Refer to table 3 for the alarm input connector pin−out.

10. Power up the distribution panel, and check for proper operation of the connected load(s), fuse status LEDs, LCD, form "C" alarm (if using) and Ethernet communications (if connected).

LED	FUSE STATUS
ON	Blown
OFF	Good

Table 1: Fuse Status LED

NC/C PINS	NO/C PINS	CONDITION
Open	Closed	Fuse Alarm • **Activate Alarm Form C Contact** is checked • One or more blown fuse
		System Under – Voltage Alarm • **Activate Alarm Form C Contact** is checked • System Voltage is below the set value
		System Over – Voltage Alarm • **Activate Alarm Form C Contact** is checked • System voltage is above the set value
		System Over – Current Alarm • **Activate Alarm Form C Contact** is checked • System current is above the set value
		Alarm Input #1 – #5 • **Activate Alarm Form C Contact** is checked • Digital Alarm is triggered
		Output Over – Current Alarm #1 – #12 • **Activate Alarm Form C Contact** is checked • Output Current is above the set value
		Output Under – Current Alarm #1 – #12 • **Activate Alarm Form C Contact** is checked • Output Current is below the set value
		No power to unit
Closed	Open	**Activate Alarm Form C Contact** is checked and no fault occurred
		All **Activate Alarm Form C Contact** is not checked

Table 2: Form "C" Alarm

PIN	DESCRIPTION
1	Common
2	Alarm Input # 1
3	Common
4	Alarm Input # 2
5	Common
6	Alarm Input # 3
7	Common
8	Alarm Input # 4
9	Common
10	Alarm Input # 5

Table 3: Alarm Input Connector Pin–out

LCD/SELECT BUTTON OPERATION

At power up, the LCD of the panel will display the main screen. To switch between the various LCD screens, press the **Output Select** button on the front of the panel (see Figure 3 for screen order).

```
ICT Broadband Panel

SYS VOLTAGE:   13.80V
SYS CURRENT:   123.4A
```

```
Network Connected
100 Base-T
192.168.0.180
00:50:C2:D2:10:2C
```

Figure 3: LCD Screens

```
OUTPUT #1
FUSE:            OK
VOLTAGE:      13.80V
CURRENT:       15.3A
```

```
OUTPUT #12
FUSE:          OPEN
VOLTAGE:      13.80V
CURRENT:       0.0A
```

```
ALARM INPUT #1

STATUS:      READY
```

```
ALARM INPUT #5

STATUS:      ALARM
```
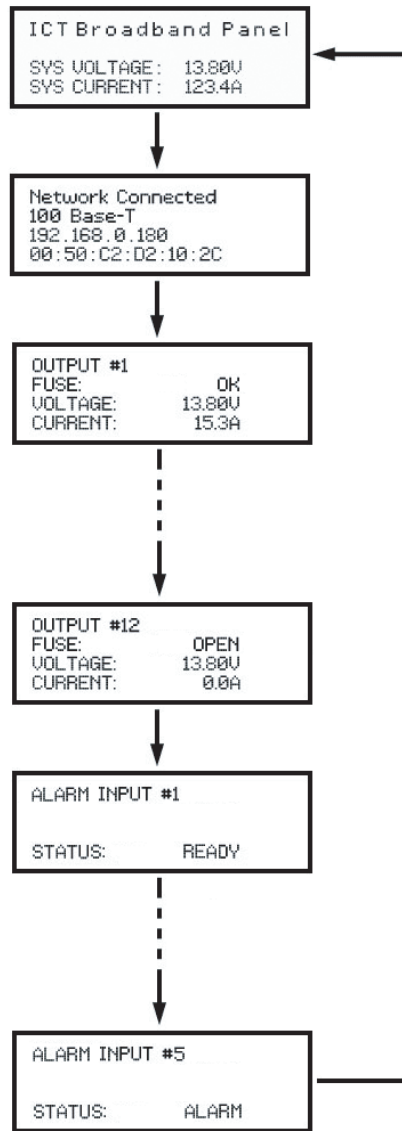
Holding the **Output Select** button for 2 seconds at any screens will return you to the main screen.

Holding the **Output Select** button for 20 seconds at any screens will reset the password (see **Password Reset** section).

The backlight of the LCD turns off if the **Output Select** button is not pressed for 15 minutes. Press the **Output Select** button to turn the backlight back on.

MAIN SCREEN

Line 1: Displays the name of the panel, which is customizable through the web–based configuration utility.
Line 2: blank
Line 3: Displays the system voltage. Voltage display will blink if the system voltage exceeds the Under–Voltage or Over–Voltage Thresholds set on the **Alarm Setup** page.
Line 4: Displays the system current. Current display will blink if the system current exceeds the Over–Current Threshold set on the **Alarm Setup** page.

NETWORK SCREEN

Line 1: Displays the network status.
Line 2: Displays the connection type.
Line 3: Displays the IP address assigned to the panel.
Line 4: Displays the MAC address of the panel.

OUTPUT SCREEN (1 – 12)

Line 1: Displays the name of the load, which is customizable through the web–based configuration utility.
Line 2: Displays the fuse status. **OK** for good fuse and **OPEN** for blown fuse.
Line 3: Displays the output voltage. Voltage display will blink if the voltage exceeds the Under–Voltage or Over–Voltage Thresholds set on the **Alarm Setup** page.
Line 4: Displays the output current for that individual output. Current display will blink if the output current exceeds the Output Over–Current or Under–Current Thresholds set on the **Output Setup** page.

ALARM INPUT SCREEN (1 – 5)

Line 1: Displays the alarm input number.
Line 2: Displays the name of the alarm input if it has been entered through the web–based configuration utility. Otherwise, this line is blank.
Line 3: blank
Line 4: Display the alarm input status. **ALARM** if the alarm input is triggered, **READY** if the alarm input is not triggered.

Note: The alarm input screens are only displayed if the alarm input has enabled (see **Alarm Setup** section in the instruction manual).

WEB—BASED CONFIGURATION UTILITY

Follow these steps to access the panel from a browser. The recommended web browsers to use with this panel are Microsoft Internet Explorer, Mozilla Firefox or Google Chrome.

1. Start your web browser.
2. Enter the IP address of the panel in the location/address field of the browser.
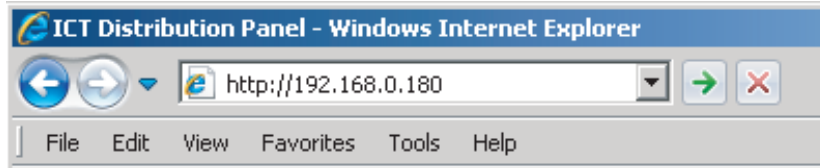
Figure 4.

If the panel is connected to a network with a DHCP server, the panel will be assigned an IP address automatically. To find the current IP address of the panel, see the **LCD Operation** section in the instruction manual. If the panel is not connected to a network with DHCP, it will use a default IP address of **192.168.0.180.**

3. Enter your user name and password. The default Administrator user name is **admin**, and there is no password by default.

Figure 5.

4. Once connected, the panel **Status** page will appear in your browser window.

Figure 6.

STATUS

This page provides information on system voltage, system current, fuse status, current level by output contact (1 through 12), and alarm status.
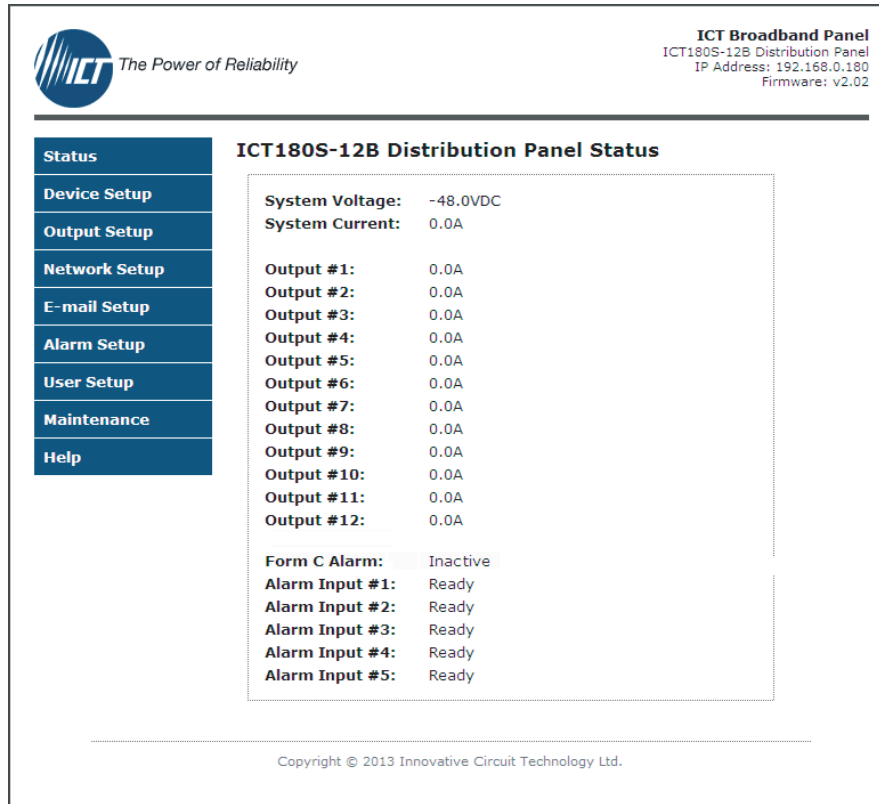
If any alarm inputs are enabled, the status of the alarm inputs will be shown on this page.

DEVICE SETUP

This page allows you to configure the device settings of the panel. To save any changes to the device settings, click on **Save Settings** at the bottom of this page.

DEVICE INFO

Site Name: Allows you to assign a custom name to the panel.

Model: Displays the model number of the panel.

Hardware: Displays the hardware version of the panel.

DATE AND TIME SETTINGS

Current System Time: Displays the current date and time of the panel's onboard clock. This clock is used to timestamp the log entries in the data log. The clock can either be set manually, or it can be synchronized with a remote NTP Time Server over Ethernet.

Synchronizing the clock with a NTP Server is recommended to ensure that the date and time will still be correct after a power failure.

Synchronize with NTP Server: Checking this box will enable date and time synchronization with a NTP Server. A valid server address must also be entered in the NTP Server field.

NTP Server: The name or IP address of the NTP Server used for date and time synchronization (such as pool.ntp.org).

Time Zone: Select a time zone to convert the time received from the NTP Server to your local time.

Set Time Manually: Checking this box will allow you to manually set the panel's date and time. The date must be entered in MM/DD/YY format, and the time must be entered in HH:MM:SS format.

DATA LOGGING

Data Logging: Allows you to enable data logging. With data logging enabled, the panel will record the system voltage, system current, output currents, fuse status, and alarm input status at a sample rate of 1 sample per minute. To view the log while data logging is enabled, click on the **Download Log button** next to the data logging dialog box. This will download the log in Comma Separated Values (CSV) format, which can be opened by most spreadsheet software applications such as Microsoft Excel. The log will hold up to 30 days of data, with oldest log entries at the top of the log file.

OUTPUT SETUP

This page allows you to configure the output settings of the panel. In the **Select an Output** to edit box, click on the output number of the output you wish to configure. To save any changes to the output settings, click on **Save Settings** at the bottom of this page.

To copy the configuration settings from one output to all of the other outputs, click on **Copy Settings to All**, and then click on **Save Settings** to save the new settings.

OUTPUT SETTINGS

Label: Allows you to assign a custom name to each individual output. The output names are displayed on the **Status** page, as well as on the LCD screen.

Ignore Fuse Status: If this box is checked, the panel will not monitor the status of the fuse for the selected output.

OUTPUT OVER–CURRENT ALARM

Over–Current Threshold: If the current on the selected output rises above the value in this field, the output over–current alarm will trigger. The output current must remain above the over–current threshold for at least 5 seconds before the alarm will be triggered.

To disable this alarm, set the value in this field to 0 Amps.

Activate Alarm Form C Contact: If this box is checked, the Alarm Form "C" Contacts on the panel will indicate a fault condition when the over–current alarm is triggered for the selected output.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when the over–current alarm is triggered for the selected output. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

OUTPUT UNDER–CURRENT ALARM

Under–Current Threshold: If the current on the selected output drops below the value in this field, the output under–current alarm will trigger. The output current must remain below the under–current threshold for at least 5 seconds before the alarm will be triggered.

To disable this alarm, set the value in this field to 0 Amps.

Activate Alarm Form C Contact: If this box is checked, the Alarm Form "C" Contacts on the panel will indicate a fault condition when the under–current alarm is triggered for the selected output.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when the under–current alarm is triggered for the selected output. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

NETWORK SETUP

WARNING: Changing the network settings will reboot the panel..

This page allows you to configure the network settings of the panel. To save any changes to the network settings, click on **Save Settings** at the bottom of this page and panel will reboot.

NETWORK

MAC Address: Displays the MAC address assigned to the panel. It can also be found on line 4 of the network status screen of the LCD (see **LCD/Select Button Operation**).

Enable DHCP: Turn on this setting if your network is using a DHCP server to automatically assign IP addresses (DHCP is enabled by default). To manually assign a Static IP address to the panel, uncheck the **Enable DHCP** box and then set the following settings.

IP Address: Specify a unique IP address for the panel.

Subnet Mask: Specify the mask for the subnet the panel is located on.

Gateway: Specify the IP address of the default router (gateway) used for connecting attached devices to different networks.

Primary DNS: Specify the IP address of the Primary DNS Server for your network.

Secondary DNS: Specify the IP address of the Secondary DNS Server for your network.

WEB SERVER

WARNING: Changing these ports may affect your ability to access the panel.

The web server port numbers can be changed to any port within the range 1 – 65565.

HTTP Port: Allows you to change the HTTP port number. This port is used for HTTP traffic between the panel and web browser. The default HTTP port is **80**. If you change the HTTP port to a number besides 80, you will have to append the new port number to the URL used to access the panel (e.g. **http://192.168.0.180:8000** for IP address **192.168.0.180**, port **8000**).

HTTPS Port: Allows you to change the HTTPS port number used by the panel. HTTPS (HTTP secure) is a protocol which encrypts data transfered between web browsers and servers. The default HTTPS port is **443**.

To access the panel through a secure HTTPS connection, type **https://** in front of the URL used to access the panel (e.g. **https://192.168.0.180:8888** for IP address **192.168.0.180**, HTTPS port **8888**).

UDP Port: Allows you to change the UDP port number used by the panel. This port is used when applying firmware upgrades to the panel. The default UDP port is **9393**.

SNMP

Configure these settings if you would like to use SNMP monitoring. SNMP (Simple Network Management Protocol) is the industry standard protocol for network management software. When SNMP is enabled on the panel, it allows standard SNMP management software to connect to the SNMP agent running on the panel and read real–time system information such as voltage and current. A SNMP trap can also be sent to your SNMP management software when an alarm or error occurs.

The information available from the SNMP agent is described in a MIB (Management Information Base) file, which can be downloaded from the **Help** page. The MIB file must be imported into your SNMP management software.

Enable SNMP: If this box is checked, the panel SNMP agent will be enabled.

Read Community: Enter the community string/password here for read–only SNMP access. The default read community string is "public".

Trap Community: Enter the community string/password that is sent with all traps. Some trap receivers are able to filter on trap community.

Trap IP Addresses: Enter the IP addresses for up to two devices that will receive SNMP traps from the panel.

SNMP Contact Information: Allows you to assign system contact information (such as a name and phone number) for the panel, which can be read via SNMP querys. This information is optional and can be left blank if you prefer.

E–MAIL SETUP

Configure these settings if you would like to receive e–mail alarm notifications from the panel. The information for the following settings is available from your Network Administrator or Internet Service Provider (ISP).

E–MAIL

SMTP Server: The name or IP address of your SMTP server used for sending outgoing e–mail.

SMTP Server requires SSL: Check this box if your SMTP Server requires an encrypted SSL connection.

SMTP Port: The port used by your SMTP server. The standard port used by most SMTP servers is **25**.

Sender E–mail Address: Enter the e–mail address you wish to appear as the sender of the e–mail notifications.

Recipient E–mail Addresses: Enter the e–mail addresses you wish to receive the e–mail notifications. If multiple e–mail addresses are entered, use commas to separate the addresses. This field can also be used to send a text message notification to a cell phone. See the **Text Message Alarm Notifications** section for more information.

SMTP User Name: If your SMTP server requires a user name and password, enter the user name here. Leave this field blank if your SMTP server does not require authentication.

SMTP Password: If your SMTP server requires a user name and password, enter the password here. Leave this field blank if your SMTP server does not require authentication.

Minimum E–mail Interval: This setting allows you to specify how many minutes have to elapse between e–mail notifications. This setting is used to prevent your network from being flooded with alarm e–mails if your alarm thresholds are not set correctly. The default setting is 1 minute. This setting can be changed to anything between 0 and 60 minutes.

GENERAL E–MAIL NOTIFICATIONS

The Distribution Panel restarts: Check this box to receive an e–mail notification when the panel restarts after a power failure or a soft reset.

ALARM SETUP

This page allows you to select which alarms you wish to monitor, and also allows you to enter custom thresholds for each status condition. To save any changes to the alarm settings, click on **Save Settings** at the bottom of this page.

FUSE ALARM

Activate Alarm Form C Contact: If this box is checked, the alarm form "C" contacts on the panel will indicate a fault condition when an output fuse is blown.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when an output fuse is blown. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

SYSTEM UNDER–VOLTAGE ALARM

Under–Voltage Threshold: If the system voltage drops below the value in this field, the system under–voltage alarm will trigger.

Under–Voltage Recovery: If the system voltage rises above the value in this field, the system under–voltage alarm will clear. The value in this field must be at least 0.50V higher then the Under–Voltage Threshold.

Activate Alarm Form C Contact: If this box is checked, the Alarm Form "C" Contacts on the panel will indicate a fault condition when the system under–voltage alarm is triggered.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when the system under–voltage alarm is triggered. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

SYSTEM OVER–VOLTAGE ALARM

Over–Voltage Threshold: If the system voltage rises above the value in this field, the system over–voltage alarm will trigger.

Activate Alarm Form C Contact: If this box is checked, the alarm form "C" contacts on the panel will indicate a fault condition when the system over–voltage alarm is triggered.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when the system over–voltage alarm is triggered. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

SYSTEM OVER–CURRENT ALARM

Over–Current Threshold: If the total system current rises above the value in this field, the system over–current alarm will trigger.

The system current must remain above the over–current threshold for at least 5 seconds before the alarm will be triggered.

Activate Alarm Form C Contact: If this box is checked, the alarm form "C" contacts on the panel will indicate a fault condition when the system over–current alarm is triggered.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when the system over–current alarm is triggered. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

ALARM INPUT #1 – #5

Alarm Name: Allows you to assign a custom name to each individual alarm input.

Contact Type: Allows you to configure each individual alarm input as a "Normally Open" contact, a "Normally Closed" contact, or as "Not Used".

If the alarm input is configured as "Not Used", it will be disabled and will not appear on the **Status** page or on the LCD screen.

Activate Alarm Form C Contact: If this box is checked, the alarm form "C" contacts on the panel will indicate a fault condition when this alarm input triggers.

Send E–mail: If this box is checked, an e–mail alarm notification will be sent when this alarm input triggers. The e–mail settings on the **E–mail Setup** page must be configured correctly before e–mail notifications can be sent.

USER SETUP

This page allows you to configure passwords for accessing the panel. To save any password changes, click on **Save Settings** at the bottom of this page.

The Administrator account has no password assigned to it by default. For improved security, it is recommended that you assign a password to the account.

WARNING: Please record your password. If the Administrator password is lost, the panel must be reset to return the password to the default setting. See the Password Reset section for more information.

Select a User to Edit: There are two user accounts with access to the panel:

> **Administrator** (user name: **admin**) – This account has full access to the panel.

> **Standard User** (user name: **user**) – This account has view–only access to the panel. This account cannot be used to change settings.

New Password: Allows you to change the password for the selected user.

Confirm New Password: When changing a password, you must re–enter the new password here.

Administrator Password: Enter the current Administrator password here to confirm changes.

MAINTENANCE

This page allows you to reset the panel, restore the panel to factory default settings, and send test e−mail to verify that functionality.

RESET COMMUNICATIONS

Pressing the **Reset** button will reset the Ethernet communications port on the panel without interrupting DC power to the output terminals. Current settings are maintained during the reset.

RESTORE FACTORY DEFAULT SETTINGS

Pressing the **Restore** button will restore **ALL** settings to the original factory default values, including the passwords. If you only want to restore the network settings and passwords, see the **Password Reset** section.

SEND TEST E−MAIL

Pressing the **Send Test E−mail** button will send test e−mail to the specified recipient using the e−mail settings on the **Network Setup** page.

PING DIAGNOSTICS TOOL

This tool can be used to verify connectivity to any network device. To use the tool, Enter the hostname or IP address of the target device, then click **Ping**.

MOBILE WEB APP

A mobile version of the **Status** page is available which is optimized for smartphone web browsers.

To access the Mobile Web App, type the address of the panel in the location/address field of the browser on your smartphone, followed by **/m**
(e.g. **https://192.168.0.180/m**). You will be prompted for your user name and password.

For increased security when accessing the panel over the Internet, it is highly recommended that you connect to the Mobile Web App using a HTTPS connection, or use a Virtual Private Network (VPN) connection.

ICT Broadband Panel		
System Voltage:	−48.0VDC	
System Current:	0.0A	
Alarm Inputs:	1 2 3 4 5	
Output #1 0.0A	**Output #2** 0.0A	**Output #3** 0.0A
Output #4 0.0A	**Output #5** 0.0A	**Output #6** 0.0A
Output #7 0.0A	**Output #8** 0.0A	**Output #9** 0.0A
Output #10 0.0A	**Output #11** 0.0A	**Output #12** 0.0A

Figure 7: Mobile Web App

The Mobile Web App provides information on system voltage, system current, alarm input status, fuse status, and current level by output contact (1 through 12).

TEXT MESSAGE ALARM NOTIFICATIONS

The panel can send text message alarm notifications to a cell phone by sending the alarm e−mail to an address at the mobile phone provider. On the **E−mail Setup** page, enter the address for your phone in the **Recipient E−mail Addresses** field. For example, to send a text message to an AT&T phone, enter **cellnumber@txt.att.net**, replacing **cellnumber** with your cell phone number.

Here are some address formats for other mobile phone providers:

AT&T	cellnumber@txt.att.net
Verizon	cellnumber@vtext.com
T−Mobile	cellnumber@tmomail.net
Virgin Mobile	cellnumber@vmobl.com
Nextel	cellnumber@messaging.nextel.com
Bell Mobility	cellnumber@txt.bell.ca
Rogers	cellnumber@pcs.rogers.com
Telus	cellnumber@msg.telus.com

PASSWORD RESET

Resetting the password resets the Administrator password, network and web server settings to the original factory default values. The Standard User password is not affected. To reset, do the following:

1. Press and hold the **Output Select** button on the front of the panel (approximately 20 seconds) until **Resetting** is shown on the LCD.

2. Release the button.

3. After reset is complete, press and release the **Output Select** button once to view the network status screen on the LCD. The new IP address of the panel will be displayed.

ROUTER CONFIGURATION

This section explains how to set up the panel behind a router and enable remote access to the panel over the Internet.

A router allows multiple PCs to share a single Internet connection. To enable access to the panel over the Internet, you will need to configure your router to forward incoming remote data to the local IP address of your panel.

The following steps use a Linksys WRT54G router as an example.

1. Log in to your router and go to the port forwarding screen. In the Linksys WRT54G, this is located in the **Applications and Gaming** tab. The location of port forwarding may be different on other routers (consult your router manual for instructions).

2. To configure HTTP forwarding, following these steps:

   a. Enter a unique name in the **Application** field.
   b. Enter the HTTP port number that the panel is using in the **Start** and **End** fields. If you are using the default panel port settings, the port number is **80**.
   c. Select **Both** under **Protocol** (TCP and UDP).
   d. Enter the local IP address of the panel (e.g. 192.168.0.180) in the **IP Address** field. See step 2 of **Web–based Configuration Utility** section to find the actual local IP address of your panel.
   e. Check **Enable**, and then click on **Save Settings**.

NOTE: Many ISPs block access to port 80. If your ISP does block port 80, you will need to change the HTTP port the panel uses from 80 to something else, such as 8000. Valid port numbers are in the range of 1 – 65535. See the **Network Setup** section for instructions on how to change the panel network ports. You will also need to change the HTTP port number from 80 to something else if your local network already contains another device using port 80 such as another panel or a web server.
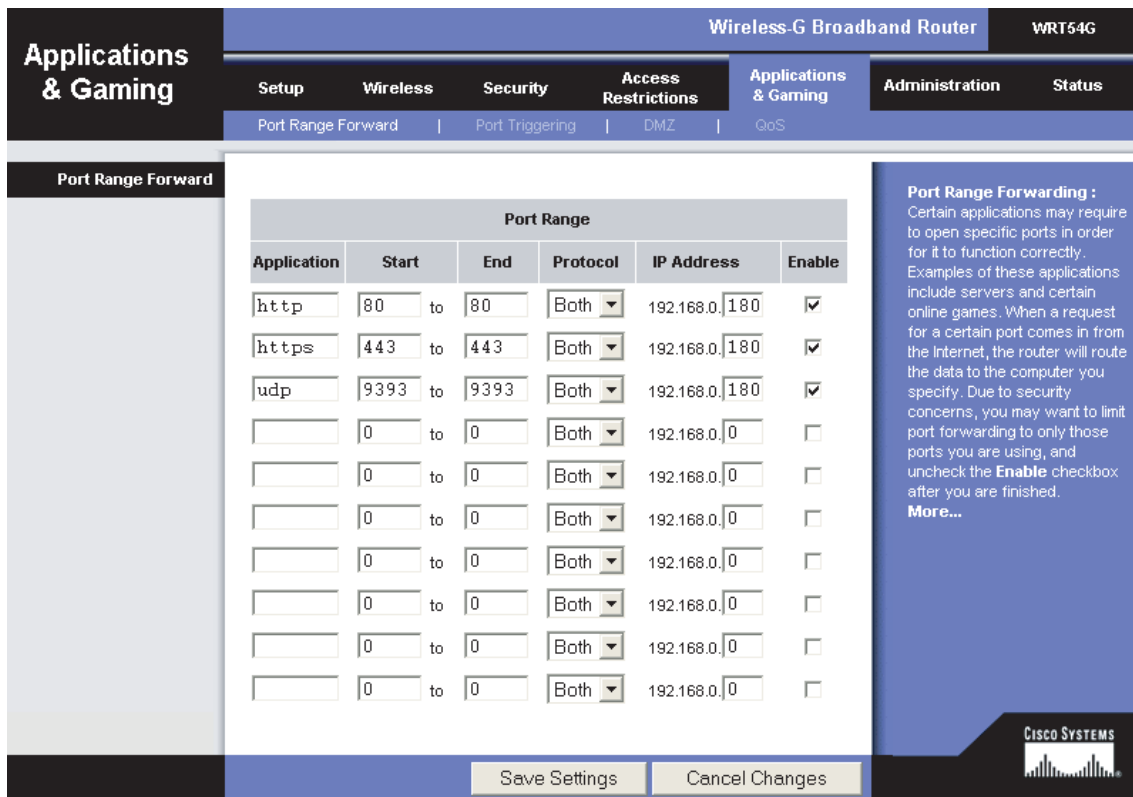
Figure 8.

3. To configure HTTPS forwarding, repeat steps 2a – 2e with the HTTPS port number that the panel is using. If you are using the default panel port settings, the HTTPS port number is 443.

4. To set up your router to allow remote panel firmware upgrades, repeat steps 2a – 2e with the UDP port number that the panel is using. If you are using the default panel port settings, the UDP port number is 9393. Firmware upgrades can still be applied locally if this step is skipped.

5. Before you can access the panel over the Internet, you will need to know the WAN IP address of the router, which is assigned by your ISP. With the Linksys WRT54G router, this information is available in the Status tab, listed as IP Address (see Figure 9).

NOTE: If you are using a Dynamic IP address, your WAN IP Address may change from time to time without warning, depending on your ISP. You may want to obtain a Static IP address from your ISP, which will be more convenient to use to access the panel from a remote location. A Static IP address is a fixed IP address that will not change. Alternatively, if a Static IP address is not available, you can use a Dynamic DNS service such as **Dyn** (see **www.dyn.com**).
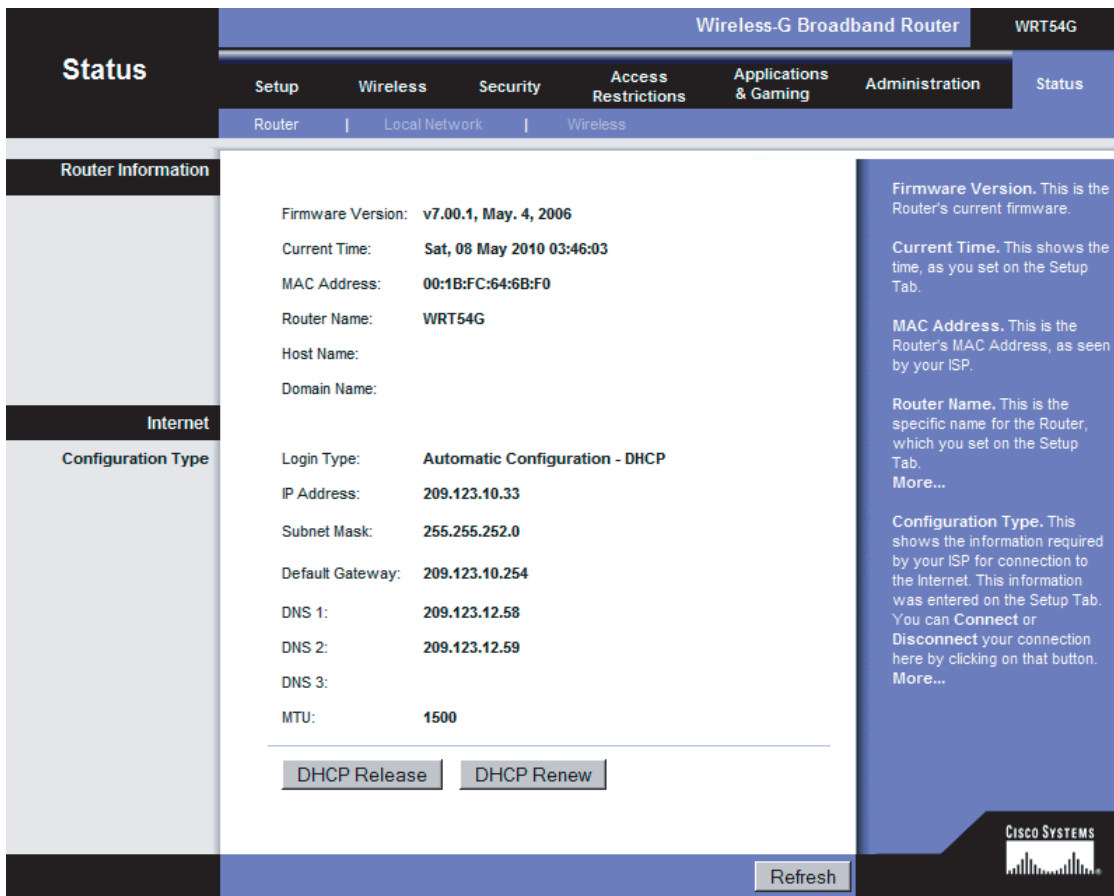
22

Figure 9.

6. To access the panel over the Internet, type the WAN IP Address of the router in the location/address field of your browser, followed by a colon and the HTTP port number that the panel is using (e.g. **http://209.123.10.33:8000** for IP Address **209.123.10.33**, Port **8000**).
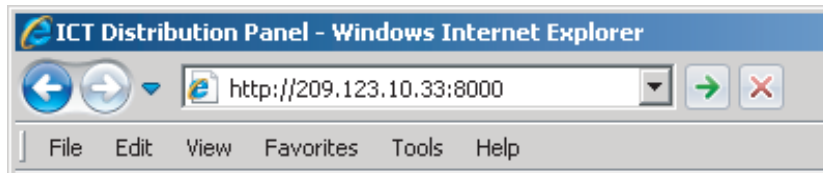

Figure 10.

TROUBLESHOOTING

I am unable to access the web−based configuration utility:

▶ Check that you are using the correct IP address to access the panel by pressing the **Output Select** button on the front of the panel to view the **Network Status** screen on the LCD. The IP address for the panel may have changed if DHCP is enabled.

▶ If the **Network Status** screen on the LCD shows **Network Not Connected**, check the network cable connections to the panel and the network.

▶ Ensure that you are using the correct type of network cable. An industry standard "crossover" cable should be used for connecting directly to a computer, and a "straight−through" cable should be used for connecting to a network.

▶ Ensure the network card settings on your computer are appropriate for accessing the IP address of the panel. To access a panel wtih the default IP address of 192.168.0.180, typical network settings for your computer are:
    o **IP Address:** 192.168.0.100
    o **Subnet Mask:** 255.255.255.0
    o **Gateway:** 192.168.0.1

▶ If the HTTP port of the panel has been changed, you must append the port number to the URL used to access the panel. See the **Password Reset** section for instructions on how to reset the port number to the default setting.

▶ If your network switch allows you to manually configure port speed and duplex settings, turn on "Auto−negotiation" on the switch port that the panel is connected to.

I forgot my password:

▶ See the **Password Reset** section for instructions on how to reset the password.

I am not receiving e−mails from the panel:

▶ On the **Network Setup** page, ensure that the **SMTP Server** field is entered correctly. The **SMTP Port** should be set to **25** for most servers.

▶ If your SMTP server requires SSL encrytion, ensure that the **SMTP Server requires SSL** checkbox is checked. Otherwise, this box must be left unchecked.

▶ If your SMTP server requires authentication, ensure that the **SMTP User Name** and **SMTP Password** fields are entered correctly. If no authentication is required, leave these fields blank.

▶ Verify your e−mail settings by going to the **Maintenance** page and clicking on the **Send Test E−mail** button to send a test e−mail. The **Send Test E−mail** page will display an error message if the panel unable to send the e−mail.

▶ On the setup pages, ensure that the **Send E−mail** checkboxes are checked for alarm conditions you wish to receive notifications for.

PRODUCT SPECIFICATIONS

Operating Voltage: −10 to −60VDC

Panel Capacity: 150A (Continuous)
                            180A (Peak)

Fuse Capacity: 15A Maximum GMT x 12

Note 1: Ensure that the load total connected to the fused outputs does not exceed the panel capacity rating.

Note 2: Most fuses should be continuously operated at no more than 80% of their nominal current rating. Consult the fuse manufacturers specifications.

Power Consumption: 2.5 watts

Voltage Drop (without fuse): 60mV (Typical)

Alarm Form "C" Contact: Form "C" Dry Contacts
                            1A/60VDC Max

Alarm Sensor Inputs: External dry contact alarm inputs, configurable for NO or NC logic.
                            Applied voltage 3.3V, 0.4mA for contact closure detection.

Ethernet: RJ45, 10Base−T/100Base−T

SNMP: SMNPv1/v2c

Input Connector: Heavy Duty Insulated M10 Stud
                            75in−lbs Max

Output Connector: Barrier Terminal Block
                            M4 Screws
                            8 – 20AWG Wire Range
                            12in−lbs Max

Alarm Connectors: Euro Terminal Block
                            M2 Screws
                            16 – 28AWG Wire Range
                            1in−lbs Max

Operating Temperature: −4°F to 140°F
                            −20°C to +60°C

Dimensions: 19.0" x 9.29" x 1.75"
                            483mm x 236mm x 45mm

Weight: 8.0lbs (3.6kg)

Warranty: 3 years

LIMITED WARRANTY

ICT Ltd. warrants to the original consumer purchaser that this product shall be in good working order, free from defects in materials and workmanship, for a period of three (3) years from the date of purchase. Should failure occur during the above stated time period, then ICT will, at its option, repair or replace this product at no additional charge except as set forth below. All parts, whether for repair or replacement, will be furnished on an exchange basis. All exchange pieces become the property of ICT. This limited warranty shall not apply if the ICT product has been damaged by unreasonable use, accident, negligence, disaster, service, or modification by anyone other than the ICT factory.

Limited warranty service is obtained by delivering the product during the above stated three (3) years warranty period to an authorized ICT dealer or ICT factory and providing proof of purchase date. If this product is delivered by mail, you will insure the product or assume risk of loss or damage in transit, and prepay shipping charges to the factory.

Every reasonable effort has been made to ensure that ICT product manuals and promotional materials accurately describe ICT product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of ICT products, ICT cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

If this ICT product is not in good working order, as outlined in the above warranty, your sole remedy shall be repair or replacement as provided above. In no event will ICT be liable for any damages resulting from the use of or the inability to use the ICT product, even if an ICT employee or an authorized ICT dealer has been advised of the possibility of such damages, or for any claim by any other party.

ICT reserves the right to make changes without further notice to any products or documentation for improvement of reliability, function, or design.

ICT Ltd. does not recommend use of its products in life support applications wherein a failure or malfunction of the product may directly or indirectly threaten life or cause injury. The user of ICT products, which are to be used in life support applications as described above, assumes all risks of such use and indemnifies ICT against all damages.

INNOVATIVE CIRCUIT TECHNOLOGY LTD.

Distributed by

American International Radio Inc. (AIR)
sales@airadio.com
www.airadio.com

Communication Solutions When It Matters

The Power of Reliability