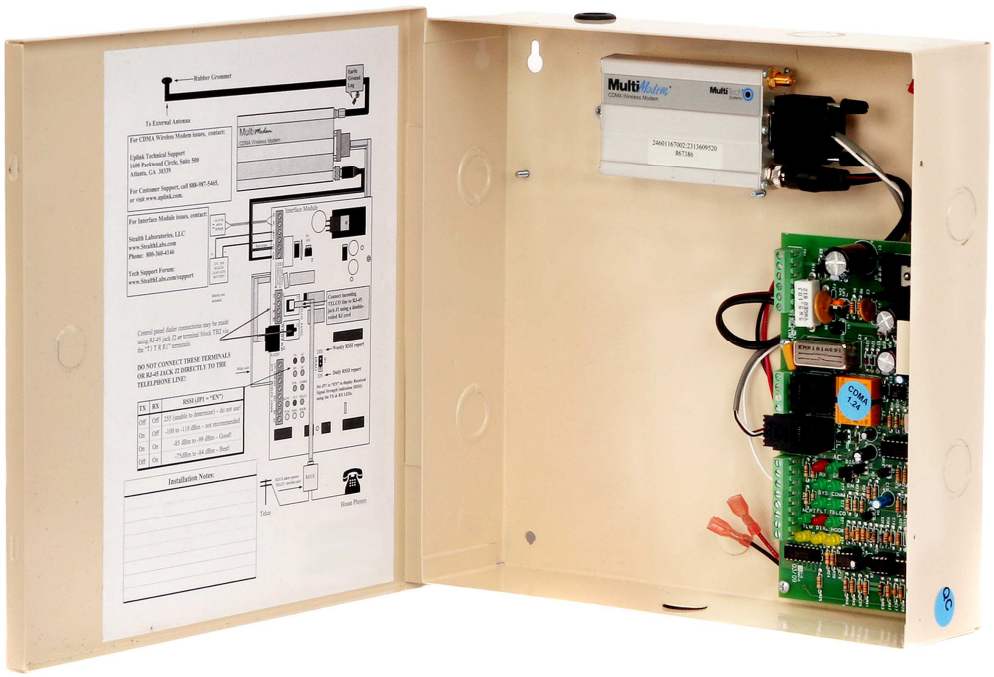
To download a copy of this manual go to “Account Access” (Dealer Login) at www.uplink.com.



UPLINK MODEL 2540

CDMA WIRELESS ALARM COMMUNICATOR

PRODUCT ID # 202132UP254001

DEALER INSTALLATION, OPERATIONS AND PROGRAMMING GUIDE

Uplink™
A Numerex Security Solution

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Introduction

The Uplink 2540 wireless backup system provides wireless transmission of the **Contact ID** alarm format. The system uses Uplink's reliable Numerex Network infrastructure along with Sprint's CDMA (**C**ode **D**ivision **M**ultiple **A**ccess) technology to provide **full data** reporting to the central station. When a phone line is compromised, the Uplink 2540 system intercepts the alarm signals and wirelessly transmits the data via the CDMA wireless modem. "Full data" means the zone / area / user information that is normally transmitted via the telephone dialer will still be transmitted.

The Uplink 2540 system consists of an Interface Module (including an integrated power supply & line fault detector) and a CDMA wireless modem, all integrated into a quality metal enclosure. The Uplink 2540 system is installed between the alarm panel and the RJ31X jack.

1.0 Parts Needed to Complete this Installation

1. Two RJ cords (8-pin, double-ended). A single-ended cord or 4-wire telephone cable may be used for a panel that uses screw terminals in place of a telephone jack. If using telephone cable, connect the wires to terminal block TB2 making sure to connect T1, T, R, and R1 to the corresponding terminals on the control panel.
2. A 12V, 7Ah sealed lead acid battery.
3. An RJ31X telephone interface jack.
4. Zip cord (2 conductor lamp cord) for wiring the included AC transformer.
5. Ground stake (or other suitable Earth Ground) and 18 AWG wire for TELCO transient protection.

2.0 Activation and Installation

1. Call Uplink Customer Support at **888-987-5465** to activate your account.
2. Insert the external antenna cable through the rubber grommet in the top of the metal system enclosure and connect to the gold SMA connector on the modem (unplug 15-pin D-Sub connector for easier access). Hand-tighten in a clockwise direction. Reconnect the 15-pin D-Sub connector.
3. Place the enclosure in an area where the antenna is free from any metal objects or obstructions. Ensure the antenna is above ground level.
4. Plug one end of a double-ended RJ cord into the premises RJ31X jack (see Figure 1). Plug the other end into J1 of the Interface Module.
5. Plug one end of the second double-ended RJ cord into the alarm panel's telephone jack, or wire the flying leads of a single-ended RJ cord to the panel's telephone terminals. Plug the other end into the Interface Module jack J2 (labeled "PANEL"). If using telephone cable instead of an RJ cord, connect the wires to terminal block TB2 making sure to connect T1, T, R, and R1 to the corresponding terminals on the control panel. **Note: "T" and "R" may be labeled as "TIP" and "RING" on some panels.**
6. An Earth Ground lug is located on the upper right corner of the enclosure (see Figure 1). For TELCO transient protection, connect this lug to a suitable Earth Ground using 18 AWG wire.
7. Using good quality zip cord, connect the included 16.5VAC, 40VA transformer to the AC terminals of the Interface Module (see Figure 1). Do not plug the transformer into an AC socket at this time.
8. Connect the black battery wire to the negative terminal of a 7Ah battery (see Figure 1). Do not connect the red wire at this time.

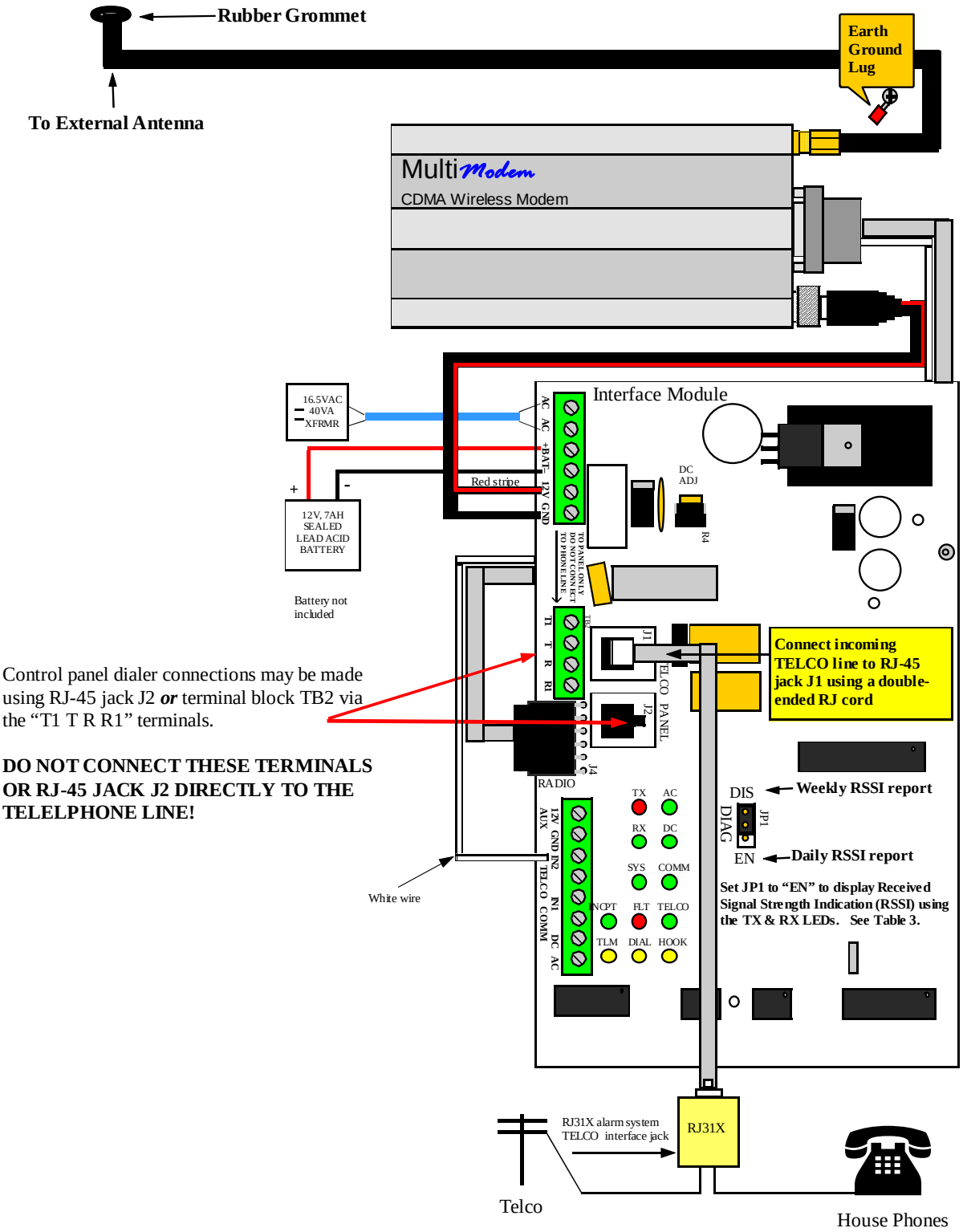

Figure 1: Uplink 2540 Wiring

9. Since the Uplink 2540 system only supports the Contact ID dialer format, there are no switch settings on the Interface Module for selecting formats.
10. The Interface Module mini-jumper JP1 (DIAG) is used to display Received Signal Strength Indication (RSSI) and trigger a status message to the Uplink server. See **Table 3** for an explanation of the local RSSI display. JP1 is also used to select between daily and weekly RSSI reporting. Set JP1 to EN to select 24 hour RSSI status reporting. Set JP1 to DIS to select weekly RSSI status reporting.
11. Once all telephone and power wiring is complete, apply 16.5VAC by plugging the transformer into an un-switched AC outlet. Connect the red battery wire to the backup battery (the black wire should have already been connected in Step 8).

3.0 Operation and Troubleshooting

The Uplink 2540 wireless backup system employs several LEDs to indicate operational status and aid in troubleshooting. These LEDs are described in the following sections.

3.1 CDMA Wireless Modem

The modem has 6 LED indicators, described in Table 1.

Table 1: CDMA Wireless Modem LED indications

Modem LEDs	
TD	**T**ransmit **D**ata. Modem is transmitting data.
RD	**R**eceive **D**ata. Modem is receiving data.
CD	**C**arrier **D**etect. Data connection has been established.
LS	**L**ine **S**tatus. **Steady "on":** Modem not registered on network. **Flashing:** Modem is registered on network. **Off:** Modem is off (not ready) **.**
TR	**T**erminal **R**eady. Not used on UPLINK 2540. Always off.
PWR	**Power**. Steady "on" when DC power is applied.

IMPORTANT! Read the safety guidelines in section 5.2 prior to using your CDMA Wireless Modem. Failure to follow these rules and guidelines may be dangerous and / or illegal.

See Section 4.0 for information on obtaining technical support for the CDMA Wireless Modem.

3.2 Interface Module

The Interface Module has 12 LED indicators, described in Table 2.

Table 2: Interface Module Status LED Indicators

TX (red)	Indicates RSSI when JP1 is enabled (See Table 3)
Brief blink (~every 5 Secs)	Sent poll or transmitted data to modem.
Rapid flash - alternates with RX LED	No data received from modem in more than 30 seconds or CDMA network service not available.
ON SOLID; SYS, AC & DC LEDs off	Low voltage shutdown; battery level less than 9.5V.

RX (green)	Also indicates RSSI when JP1 is enabled (See Table 3)
Brief blink (~every 5 Secs)	Received poll reply or other data from modem.
Rapid flash - alternates with TX LED	No data received from modem in more than 30 seconds or CDMA network service not available.

AC (green)	Note: Also indicates state of AC output
ON	AC power is present.
OFF	No AC power is present.

DC (green)	Note: Also indicates state of DC output
ON	DC level is above 11.2V (also triggers a status message).
OFF	DC level is below 11.2V (also triggers a status message).

SYS (green)	
FLASHING	Heartbeat. System CPU is operational.
OFF	System has failed or is in low voltage shutdown mode.

COMM (green)	Note: Also indicates state of COMM output
ON	Modem / Network communications link is normal.
OFF	Modem / Network communications link is not operational.

INCPT (green)	
ON	No phone line; Dialer Intercept Mode enabled.
OFF	Dialer Intercept Mode disabled.

FLT (red)	
ON	LINE FAULT - no phone line detected.
OFF	Phone line is normal or an intercepted dial is in progress.
FLASHING (alternates with DIAL LED)	Dialer error – dialer off hook; no report sent or the dialed report failed.

TELCO (green)	Note: Also indicates state of TELCO output
ON	Phone line is normal.
OFF	No phone line.

Table 2 (continued): Interface Module Status LED Indicators

TLM (yellow)	
5 Sec ON, 5 Sec OFF	Telephone Line Monitor - Indicates line is being tested.

DIAL (yellow)	
ON	Dialer is actively dialing in intercept mode (via modem).
OFF	No dial is being intercepted.
FLASHING (alternates with FLT LED)	Dialer error – dialer off hook; no report sent or dialed report failed
PULSING (FLT LED is off)	Dialer is pulse dialing a phone number.

HOOK (yellow)	Note: Only works in Fallback Mode (good phone line)
ON	Dialer or a house phone is off-hook (in use).
OFF	Phone line is idle.

Table 3: Received Signal Strength Indication (RSSI) using TX and RX LEDs

TX	RX	Note: RSSI is tested approx. every 60S when enabled
Off	Off	Signal too weak to determine (modem reads 255) – unusable site!
On	Off	Signal between -100 to -110 dBm (not recommended)
On	On	Signal between -85 to -99 dBm (good)
Off	On	Signal >= -84 dBm (best)

3.3 System Power-up

The Interface Module powers up in "Network Fail" mode, as indicated by the rapidly flashing RX and TX LEDs. The Interface Module will not attempt to intercept a dial report until the wireless CDMA modem logs into the network. Once network communications have been established, the Uplink 2540 system will transmit a message containing RSSI and DC status to the Uplink backend server, and optionally, to your account's email recipient(s). The Interface Module RX and TX LEDs will revert to their normal indications, depending on the setting of mini-jumper JP1: DIS = predominately off, with occasional short blinks during data packets. EN = RSSI display, as described in **Table 3**.

If the modem fails to communicate for more than 30 seconds or if network service fails, the Interface Module will rapidly flash the TX and RX LEDs as an indication of no communication. The COMM output will switch off (float) to locally indicate COMM trouble (see Section 3.6, *Interface Module Outputs*).

3.4 Fallback Mode

When the Interface Module is connected to a working phone line, the system will enter Fallback Mode and the green TELCO LED will be illuminated. In Fallback Mode, the telephone line is connected to the control panel and house phones (assuming the control panel dialer is not active). With AC connected, All green LED indicators should be on except for INCPT (SYS should be blinking and RX should blink every 5 seconds or so, if JP1 is set to DIS).

3.5 Intercept Mode

If the Interface Module does not detect a phone line, the system will attempt to enter Intercept Mode. The red FLT LED will be illuminated as an indication of the TELCO line fault. If the wireless network is operational and system power is normal, the Interface Module will capture the dialer's phone connections and illuminate the green INCPT LED. If the INCPT LED is off, the unit is not in Intercept Mode and no dial reports will be intercepted. During Intercept Mode, the control panel is connected to the Interface Module phone simulator circuitry and the house phones are connected to the "dead" incoming phone line. The Interface Module will supply 12V DC to the control panel dialer's Tip and Ring lines. This voltage should satisfy the panel's telephone line monitor so its dialer will continue to send reports. When the dialer seizes the phone line, the Interface Module will generate a pseudo-dial tone and wait for the dialer to begin dialing a phone number, either through DTMF tones or pulse (rotary) dialing. When the phone number dialing ceases, the Interface Module will connect to the Uplink backend server and then send a Contact ID handshake sequence to the dialer. Any Contact ID dialer reports transmitted by the panel will then be intercepted and transmitted to the server in real time. The Uplink backend system server forwards the dialer data to the central station.

To use the Uplink 2540 as the primary means of communication, simply leave J1 disconnected from the incoming telephone line. Connect the control panel dialer to the Interface Module as normal via J2 or terminal block TB2.

3.6 Interface Module Outputs

The Interface Module has several optional outputs available on terminal block TB3. These outputs may be used for local enunciation of system events, as follows:

AC – AC power is present
DC – DC level is above 11.2V
TELCO – The telephone line is normal
COMM – The communications link with the modem and CDMA network is normal

These outputs are open-collector type and are active-low when conditions are *normal*, making them suitable as fail-safe relay triggers. Active-low means the outputs create a connection to ground when AC is present, DC is good, TELCO line is good, or COMM link is good. When the conditions are *faulted* (no AC, low DC level, bad TELCO, or no COMM), the connection to ground is switched off.

These outputs may be used to trigger a relay module, light a remote LED, or even trigger a control panel zone. Please note that these outputs are for low current devices only (100mA or less). Also note that the 12V AUX terminal should not be used to power any devices over 100mA.

To trigger a 12V relay, connect the relay "+" terminal to the Interface Module's 12V AUX terminal. Connect the relay "-" terminal to the selected output terminal (TELCO, COMM, DC, or AC).

To trigger a powered (sensitive) relay module, connect the relay module's power to the 12V AUX and GND terminals. Connect the relay trigger to the selected output terminal. Be sure to configure the relay module for a negative trigger.

To trigger a zone on a control panel, **connect a common ground wire** between one of the panel's ground terminals and the Interface Module's GND terminal. Connect the selected Interface Module output terminal to the appropriate control panel zone terminal. Since these are active-low, normally-on outputs, you may want to use the output as the zone's negative terminal (for a Normally-Closed loop). Connect one end of the zone's end-of-line resistor to the zone input and solder a wire to the other end of the resistor. Connect that wire to the Interface Module output. When the output switches off, the NC zone will be opened.

The Interface Module output **IN2** is pre-wired at the factory to the modem's reset line. Do not remove this wire since the Interface Module uses this line to "hard reset" the modem in the event it becomes non-responsive.

4.0 Support Information

Technical issues with the 2540 CDMA Wireless Alarm Communicator or Uplink account should be directed to:

Uplink Technical Support
1600 Parkwood Circle, Suite 500
Atlanta, GA 30339
Fax: 770-693-3501

For Customer Support, call **888-987-5465**, or visit www.Uplink.com.

5.0 Warranty & Compliance Information

5.1 Limited Warranty – Numerex Devices

Uplink warrants, to parties purchasing Uplink equipment directly from Uplink, i.e., to its authorized distributors and to no other parties, that for 12 months following the date of purchase, Uplink equipment will be free of defects in materials and workmanship when installed, operated, maintained, and serviced in strict accordance with Uplink's and, if applicable, the manufacturer's requirements. If Uplink equipment fails because of a defect in materials or workmanship within the warranty period, Uplink will, at its sole option and at no charge, repair or replace it. Uplink's agreement to repair (using new or reconditioned parts) or replace (with a comparable new or reconditioned Uplink unit) is

the exclusive remedy with respect to Uplink Equipment found to be defective in materials or workmanship; this remedy will not be deemed to have failed of its essential purpose so long as Uplink is willing and able to repair or replace the defective unit as provided above or, at Uplink's sole option, to refund the purchase price paid. Parties purchasing Uplink equipment from a distributor are referred to the distributor with respect to any product claims they may have.

THE FOREGOING WARRANTY IS LIMITED AND IS THE ONLY WARRANTY OFFERED HEREUNDER. UPLINK MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, AND NON-OBSOLESCENCE. THE FOREGOING WARRANTY FURTHERMORE DOES NOT COVER UPLINK DEVICES THAT (A) HAVE BEEN IMPROPERLY INSTALLED, MAINTAINED, OR SERVICED; (B) HAVE BEEN TAMPERED WITH OR DEFACED; OR (C) HAVE BEEN SUBJECTED TO ABUSE OR A HOSTILE OPERATING ENVIRONMENT.

5.2 No Warranty – Services

ALL SERVICES ASSOCIATED WITH UPLINK DEVICES INCLUDING, WITHOUT LIMITATION, NETWORK CONNECTIONS ENABLED BY UPLINK, ARE PROVIDED STRICTLY AS-IS, WITHOUT WARRANTY OF ANY KIND INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, NON-OBSOLESCENCE, NON-INTERRUPTION, AND FREEDOM FROM ERROR.

Other terms and conditions and limitations of liability apply as set forth in the applicable contractual agreement with Uplink.

5.3 FCC & Industry Canada Regulatory Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is

encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

FCC RF Exposure Information
Caution: Maintain a separation distance of at least 20 cm (8 inches) is normally maintained between the transmitter's antenna and the body of the user or nearby persons. The Modem is not designed for or intended to be used in portable applications within 20 cm. (8 inches) of the body of the user.

5.4 RF Interference Issues

It is important to follow any special regulations regarding the use of radio equipment due in particular to the possibility of radio frequency, RF, interference. Please follow the safety advice given below carefully.

- Switch OFF your Wireless MultiModem when around gasoline or diesel-fuel pumps.
- Switch OFF your Wireless MultiModem in hospitals and any other place where medical equipment may be in use.
- Respect restrictions on the use of radio equipment in fuel depots, chemical plants or where blasting operations are in progress.
- There may be a hazard associated with the operation of your Wireless MultiModem close to inadequately protected personal medical devices such as hearing aids and pacemakers. Consult the manufacturers of the medical device to determine if it is adequately protected.
- Operation of your Wireless MultiModem close to other electronic equipment may also cause interference if the equipment is inadequately protected. Observe any warning signs and manufacturers' recommendations.

5.5 Installation Instructions for Hazardous Locations

1. The modems are open devices intended for installation in an ultimate enclosure suitable for the intended application.
2. THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, AND D OR NONHAZARDOUS LOCATIONS ONLY.
3. "WARNING – Explosion Hazard – Substitution of Components may Impair Suitability for Class I, Division 2".
4. "WARNING – Explosion Hazard – Do not Disconnect Equipment Unless Power has been switched off or the area is known to be Non-hazardous".

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Dated 05/20/2009

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