EMiZON 21

Secure Managed Messaging for the 21st Century

Stand-alone TCD
Telemetry Communications Device

Installation Guide

For alarm control panels using up to 16 pins, RS232, RS 485 or dial capture.

www.emizon.com

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Introduction

Emizon 21 is the first secure, dual path, managed messaging service for IP networks. It mans that your customers can now embrace the benefits of the IP era while maintaining the high standards associated with traditional dual path managed signalling services.

This guide provides a simple check list and step by step guide to installation.

Key Features:

Secure
- Dual path service; broadband and GPRS
- Grade 4 signalling compliant
- Full audit trail on both paths

Easy to Install
- No on site configuration
- Plugs into existing panels

Cost effective
- No connection charge
- Avoids need for a dedicated line
- No call charges

Future Proofed
- Designed specifically for IP networks
- Ready for BT's 21CN deployment

21st Century Messaging

Unlike traditional analogue messaging services Emizon 21 is designed for **IP networks** and secures the end-to-end **message delivery** rather than the paths that the message travels over.

This is because unlike the fixed path PSTN network IP networks are connectionless and data on IP networks uses a system called packet-switching. In this system the data in a message is fragmented into small packages, each with a wrapper of information about the senders and receivers address. Each packet is then sent off to its destination via the best available route as determined by the network. The packet switching system gives IP networks two great advantages over traditional analogue fixed circuit system in that they can;

- Balance traffic loads second by second
- Route data round problems

What is IP?

IP or Internet Protocol is a transport and delivery method allowing data to be carried from source to destination across a vast, interconnected network. With IP becoming the universal protocol both public and private networks are opened up, providing the backbone of infrastructure to what is commonly called the Internet. The end result is that data from several applications can share the same broadband pipe - facilitating the convergence of data, voice and entertainment services.

What is a router?

The router at the customer premises is the gateway into the global IP network and the benefits that it brings. It is the router that enables the alarm panel to communicate with the Emizon platform and then onwards with the ARC.

Check List: Before you Start

1. Check the Router Port Connection

The IP module is connected into a spare port within the router in the customers' premises. Check that there is a spare port and that you have enough Ethernet cable to reach. Additional ports can be provided by using an Ethernet hub available from IT suppliers.

2. Check Wireless GPRS Signal Strength

Operating in the same way as any mobile device, the GPRS module requires sufficient signal strength to communicate. For an easy indication of signal strength place a Vodafone mobile next to the panel – 2 bars or more is usually sufficient. Extension antenna cables can extend the aerial positioning and thus provide signal strength away from the panel location and are available from suppliers listed on the Emizon website (www.emizon.com).

3. Power Down the Panel

As with the process for installing any type of alarm communications within a panel (Digi/STU) the panel must be:
- Out of commission; having notified your ARC
- Powered down, with the battery disconnected.

Note: TCD requires up to 400 milliamps from the panel power supply.

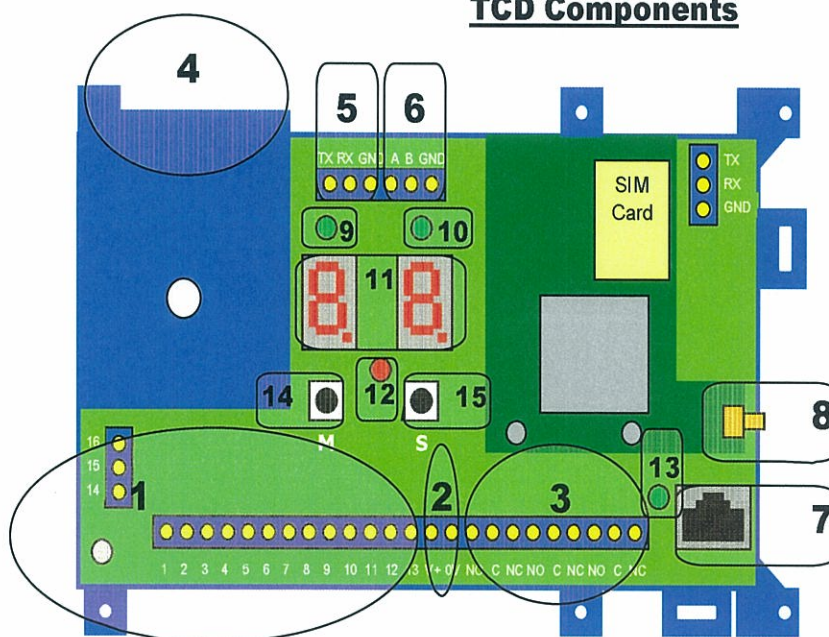### 4. Protect against Static electricity

To protect the electrical components of the TCD from static electricity we recommend that you are earthed when ever you handle the equipment using a wrist strap and a 1M resistor.

3. Note TCD Serial Number

During the commissioning process you will need to relay this number to your ARC so that this can be matched against the installation number. Make a note of the serial number before you start and have this number ready!

You may also want to check which IP protocol is used by your ARC - usually SIA Level 3 for RS232 or 485 panel connection.
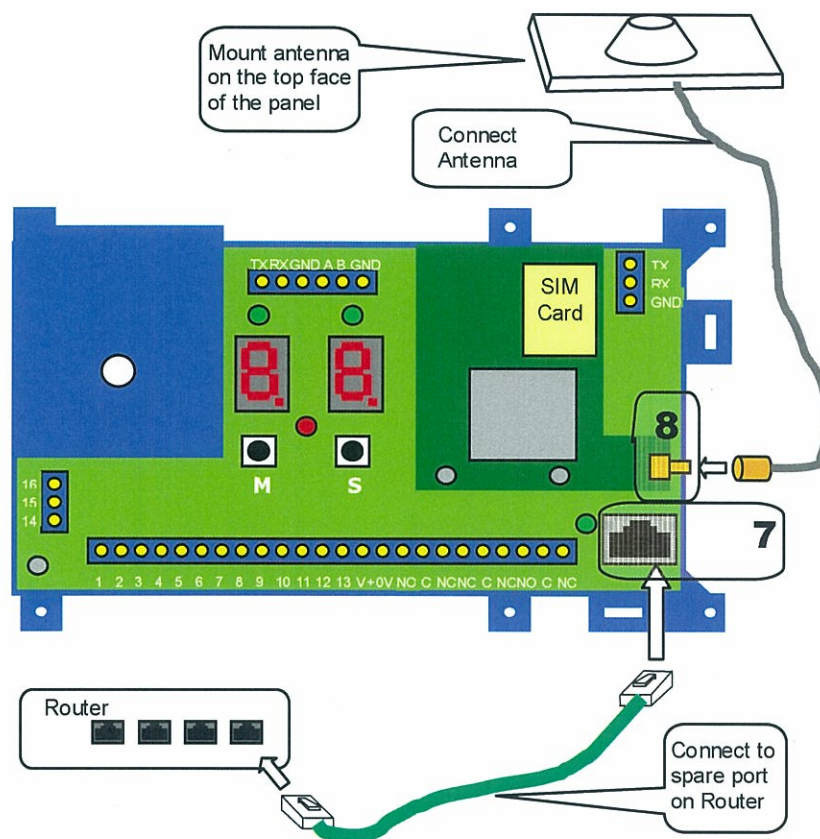
TCD Components

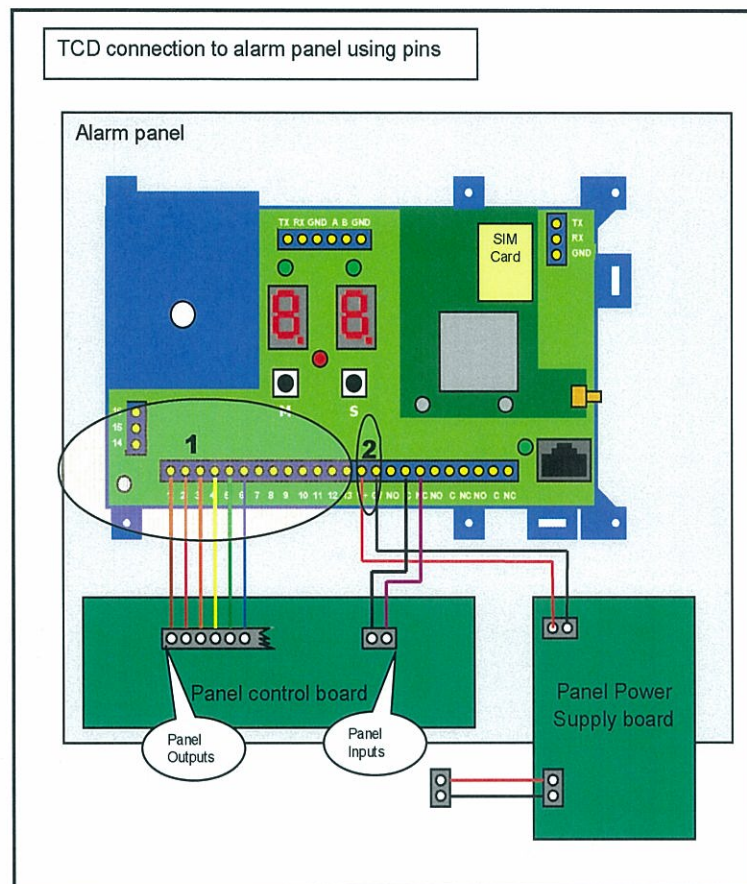| Number	Description
1	Pin Inputs 1-16, connection to Alarm panel.
2	Power Supply Input (12VDC Nom, Range:11-14VDC, Current < 400mA).
3	Relay Outputs. Contact rating 30VDC, 1A.
4	PSTN Port connection to Alarm panel.
5	RS232 Port connection to Alarm panel.
6	RS485 connection to Alarm panel.
7	Ethernet connection to router.
8	GPRS antenna connection.
9	Ethernet transmission path status LED.
10	GPRS transmission path status LED.
11	User Interface display.
12	Power LED.
13	Ethernet activity LED.
14	User Interface "Mode" button.
15	User Interface "Set" button.

Step by Step by Guide

Step 1: Fit the TCD in the Alarm Control Panel

- Position the TCD in the panel and fix in place using either the sticky pads supplied or your own screws.
- Mount the aerial on top of the alarm panel box and run connector wire down the back of the panel and connect on the antennae connector. (8)
- Connect the Ethernet port (7) to the router in the customer's premises.

Step 2: Connect TCD to the Panel

- Connect the TCD pin connections (1) to the panel as appropriate
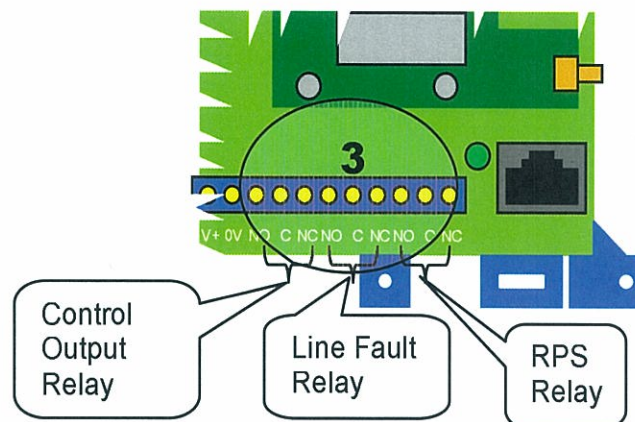- Connect the power supply to the TCD power terminals (2), carefully observing the correct polarity.

TCD connection to alarm panel using pins

Step 3: Connect and Check Relays

The TCD has three relays:

Control Output – Controlled by the ARC and used for various purposes such as resetting the alarm panel following an event

Line Fault – Activated when the TCD is unable to transmit a message. This relay can also be programmed to operate the Form 175 function.

RPS – Return Path Signalling – Activated when an alarm designated for Open/Close operation has been triggered and deactivated once it has been acknowledged.

These should be connected as required and are located on the bottom right hand corner of the TCD next to the Ethernet connector as shown in the diagram below:

Each relay is a changeover type with a common, Normally Open and Normally closed terminal. The contacts are rated at 30VDC @ 1A.

Step 4: Check Signalling on both Paths

Turn on the power supply to the panel and wait
15 seconds and check for:

1. A green steady light on the GPRS module - (10)
2. A green steady light on the IP/Ethernet module - (9)

Step 5: Commission with your ARC

- Call your ARC and provide the TCD serial number printed on the label on the front cover. The ARC will then' associate' or link this TCD to this specific installation on their system.
- When you see 'S1' on display, press the Set button (This is only required once when first installed)
- The TCD will then attempt to contact the Emizon platform
- Wait for the 'I am connected' message 'SA' confirmation on display.

Commissioning Operation

The User Interface display will show one of the following 5 states:

5 1 — **Initial State** Displayed when first commissioned and the cue for the installer to press the Set button. This triggers the TCD to contact the Emizon Configuration Server. The TCD will then enter the Registered state.

5 P — **rePowered State**: The TCD has just started up and will automatically connect to the Emizon Service Platform.

5 ⌐ — **Registered State**: The TCD has acquired the necessary information from the configuration server and will automatically connect to the Emizon Service Platform. When successful it will enter the Active state.

5 d — **Decommissioned State**: The TCD has been decommissioned by the Emizon Service Platform. No further communication will be attempted.

5 A — **Active State**: The TCD has established secure communications with the Emizon Service Platform and is fully operational. After 30 seconds, the display will change to a moving pattern indicating that the device is fully operational. This will only change if an error event occurs or the M button is pressed to enter diagnostic mode.

Moving between states requires communication with the Emizon Service Platform. Whenever this is being attempted, the decimal point on the right hand digit display will light for 0.5 seconds.

Step 6: System Test

Test all alarms as per usual on both signalling paths ensuring that your ARC has received the full activation status for Emizon 21.

TCD = Telemetry Communications Device

Compliance

The TCD complies with the requirements of the European EMC Directive (89/336/EC), the Low Voltage Directive (72/23/EC and 93/68/EC) & from (1/1/2006) the "Reduction of Hazardous Substances Directive (2002/95/EC).

Appropriate components also comply with the requirements of the R&TTE (1995/5/EC). EN55022 Emissions Class B. EN50130-4 Immunity. 89/336
Elector Magnetic Compatibility Directive) as amended by92/31/EEC.

Signalling Compliance
Emizon 21 is suitable for installation in systems complying with EN 50131-1 at: Security Grade 4.

Environmental Compliance
Environmental Class 2

Warranty
Emizon will repair or replace, at our secretion, any stand alone TCD developing a fault within 18 months, free of charge. Products for repair should be returned to Emizon suitable packed to prevent damage (including any damage from electrostatic discharges), and b accompanied by full details of the fault and the full return address.

Disposal

The symbol shown here and on the product, means that the product is classed as Electrical or Electronic Equipment and should not be disposed of with other household or commercial waste at the end of its working life. The Waste Electrical and Electronic Equipment (WEEE) Directive. (2002/96/EC) has been put in place to recycle products using the best available recovery and recycling techniques to minimise the impact on the environment, treat any
hazardous substances and avoid the increasing landfill. Product disposal instructions for residential users:When you have no further use for it, please dispose of the product as per your local authority's recycling processes. For more information please contact your local authority or retailer where the product was purchased.

EMiZON 21

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Notice

OEM integrators and installers are instructed that the phrase. This device contains transmitter FCC ID: VXMSTANDALONETCD must be placed on the outside of the host.

	Warning: Exposure to Radio Frequency Radiation The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact during normal operation is minimized. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna should not be less than 20cm during normal operation. The gain of the antenna for Cellular band must not exceed -0.76 dBi. The gain of the antenna for PCS band must not exceed -1.25 dBi.

FCC Compliance Information

This device complies with Part 15 of 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.

Information to User

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 radio/ tv technician for help.