



# Emizon TCD

INSTRUCTION MANUAL

CONNECTED • SECURE • LIVE



FOR IP/GPRS GPRS/PSTN & IP/PSTN  
For alarm control panels using up to  
16 pins, RS232, RS485 and Dial Capture.

For compliance with EN alarm signalling  
Grade 2, 3, 4, BS 8418 for CCTV monitoring  
& Grade 4 Fire EN 54-21

[www.csldual.com](http://www.csldual.com)

**PLEASE READ THIS MANUAL BEFORE CONNECTING**

**PLEASE KEEP THIS GUIDE WITH THE TCD**

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## Welcome to Emizon

Emizon is the always on, Dual-path, Alarm and CCTV communications monitoring service for Broadband, GPRS and PSTN networks.

This guide contains a step-by-step guide to the installation and commissioning of the TCD, the gateway to the Emizon IP service.

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TCD, the gateway to the Emizon IP service.

### Key Features:

**Value:** Emizon Online Maintenance (OLM) Software including upload/download UDL and online access for site diagnostics. Request Emizon OLM Software on the link below: <https://www.emizon.com/products-and-services/emizon-online-maintenance/>

**Security:** Dual-path service;.

**Ease of Install:** No on-site configuration. Fits into existing panels. DHCP enabled. Roaming SIM as standard. One Product, no add on boards. On site diagnostics.

# IMPORTANT, BEFORE YOU START

## Power down the panel

As with the process for installing any type of alarm communications (Digi/STU) the panel must be on test and powered down.

## Make a note of the TCD Serial Number (found on the white lid)

You will need to give this number to your ARC during the commissioning process so that it can be matched with the customer details.

## Protect against static electricity

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

## Complete the Customer IT survey form

Download at: <https://emizon.com/wp-content/uploads/2015/06/Customer-IT-Form.pdf> The TCD comes with DHCP enabled and will automatically request an IP address. A Static IP address can be assigned via Emizon Online Maintenance. A static IP can also be assigned by calling the Emizon Helpdesk if the GPRS path is up. LED 202 indicates the GPRS path is up. We will require **IP, Subnet mask and Gateway** details.

## Check the Router / Port Connection

**The TCD uses 50 TCP Outbound Ports 18000 to 18049 inclusive.** The Ethernet port on the TCD connects to an Ethernet connection at the customer's premises using a standard unshielded Cat5 Ethernet cable. If required additional ports on a router can be made available by using an Ethernet hub, sourced from IT suppliers, who also supply Ethernet cable lengths. Instructions to make up a Cat5 patch cable can be found in the downloads section of the website <https://emizon.com/wp-content/uploads/2015/06/Emizon-Making-a-Cat-5-Patch-Lead-4.pdf>

## For PSTN

If connecting via PSTN check if the line uses a dial prefix, if so this can be assigned via Emizon Online Maintenance software. **If the GPRS path is available. A Dial prefix of 0 or 9 can be assigned via the Phone App / Emizon Online Maintenance or by calling the Emizon Helpdesk. Note, a primary IP or GPRS path is a prerequisite to the secondary PSTN path coming into contact.**

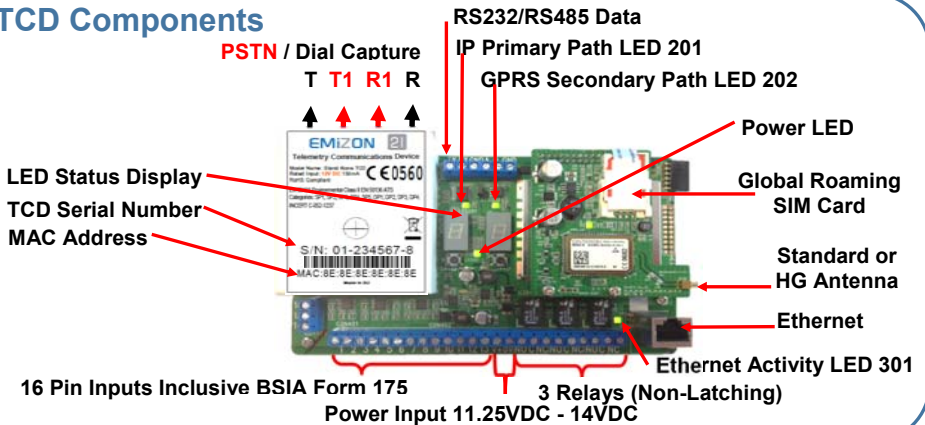
## Checking the GPRS signal strength

The GPRS module is enabled but will require sufficient signal strength to operate. **To check the GPRS signal strength tap SW402 once and observe the GS, GA and GR readings on the display. A reading of GS 12 is the minimum. Please be patient, the GPRS path can take a few minutes to activate LED 202 should be solid on indicating a GPRS path.** For a quick indication, place a mobile phone next to the panel, 2 bars or more is usually sufficient. High Gain Antennas can be fitted to boost the GPRS reception and are available from: [orders@emizon.com](mailto:orders@emizon.com) or online at <https://www.emizon.com/shop/>

## Emizon dual-path signalling

Emizon is a dual-path service - **The TCD must be commissioned with both paths fully activated & signalling to your ARC before leaving site.**

## TCD Components



### IMPORTANT NOTES:

**A Firmware update must be applied on every site visit or Maintenance visit.**

A firmware update is applied by pressing both buttons for 10 seconds or until **UF** is displayed. **UR** indicates Update Available. **UF** indicates Updating Firmware.

Triggering a physical firmware update via the TCD buttons is enabled by default. To disable the firmware update local button press on the TCD via Emizon Online Maintenance, go to Configuration -> Enable / Disable Local Firmware Updates. This would prevent an engineer with local physical access to the panel from initiating a firmware update. It would mean a firmware update could only be triggered by an authorised user with level 4 logical access, as defined in EN50136-2:2013, via Emizon Online Maintenance. If the installer presses both buttons for 10 seconds when the button press is disabled then the TCD will display **UD** - (Update Disabled). The TCD will still contact the Emizon platform to update the SIM details.

**Each TCD has a unique Serial Number** located on the white lid - you will need this number during the ARC commissioning process. The Serial number or the EM number will also be required when contacting the Emizon Helpdesk.

## Step by Step Commissioning

Step 1: Fit the TCD in the alarm Control panel.

The TCD can be connected using Pin inputs, RS 232/485 or Dial Capture.

### Using Pin Inputs

Carefully observing the correct polarity, connect the TCD pin inputs to the panel. The default is +Ve removed.

Connect the Power supply to the TCD V+ and 0V power supply input

#### Using the RS232/485 Connection

- For RS232 connect TX, RX & GND
- For RS485 connect A, B & GND

**RS232**  
3 Wires for connection to Panel 232

**RS485**  
3 Wires for connection to Panel Bus



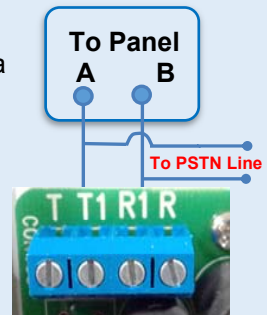
#### Using Dial Capture

- Unscrew and remove the Dial Capture Lid.
- Connect T and T1 on TCD to A on the Panel.
- Connect R and R1 on TCD to B on the Panel.
- Screw the Dial Capture lid back on.
- For Dial Capture the TCD is used as the input.



#### Using UDL with PSTN

- Wiring for TCD Connection to the PSTN line for alarms and upload and download from Panel via GPRS. **NOTE: Dial capture of alarms is not possible with a PSTN connection.**
- Unscrew and remove the Dial Capture Lid.
- Connect T1 on TCD to A on the Panel.
- Connect T1 on TCD to A on the PSTN.
- Connect R1 on TCD to B on the Panel.
- Connect R1 on TCD to B on the PSTN.
- Screw the Dial Capture lid back on.



## Step 2: Connecting TCD Signalling Paths.

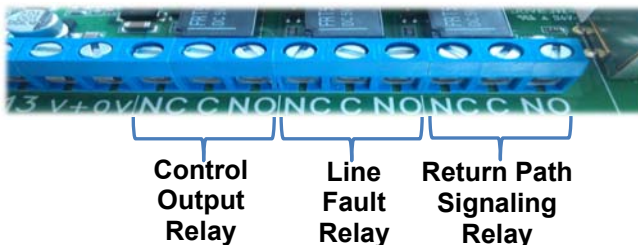
- **For IP (Broadband)** For **IP/GPRS** connections, connect the Ethernet Port to the network connection Router in the customer's premises using Cat5 or higher "unshielded Cable. Connect the GPRS antenna.
- **For GPRS/PSTN** Connect the GPRS antenna or the High Gain Antenna. For a PSTN connection remove the Dial Capture lid and connect the PSTN line to **Terminals T1 and R1. NO OTHER COMBINATION WILL WORK! Check for voltage across T1 and R1 (should read approximately 50V)**



## Step 3: Connect and Check Relays

The three changeover relays are rated at 30 Volts DC @ 1A. All 3 relays are Non- Latching. The line fault relay will be in the N/O position when there is no line fault and fall back the N/C position when there is a line fault or other fault which would prevent the TCD from operating normally. The Line Fault relay can therefore be used as a fault output, signalling N/C to indicate a fault condition. Note: The Relays can be configured in a number of combinations via Online Maintenance Software.

- **Control Output** – Controlled by the ARC and used for various purposes such as re-setting the alarm panel following an event.
- **Line Fault** – N/C when the TCD is in line fault. This relay is defaulted to operate in BSIA Form 175 mode to report a path failure on either path. This relay can also be used to indicate a fault condition for the TCD.
- **Return Path Signalling (RPS)** – activates when an alarm is sent and acknowledged by the ARC.



**Future-Proof:** Designed specifically for IP networks. Compatible with fibre and Next Generation-Networks EN Signalling Grade 2, 3, 4 and Grade 4 Fire EN 54-21.

## Pin Configuration.

The default Pin Configuration is set to the following:

- **Pin 1,2,3,5,6,7,8,9,10,11,12,13** Positive Removed
- **Pin 4** Set / Unset Positive Applied.
- **Pin 14 & 15** Disabled Reserved for Primary & Secondary Path Test.
- **Pin 16** is set for BSIA Form 175 (Positive Removed)

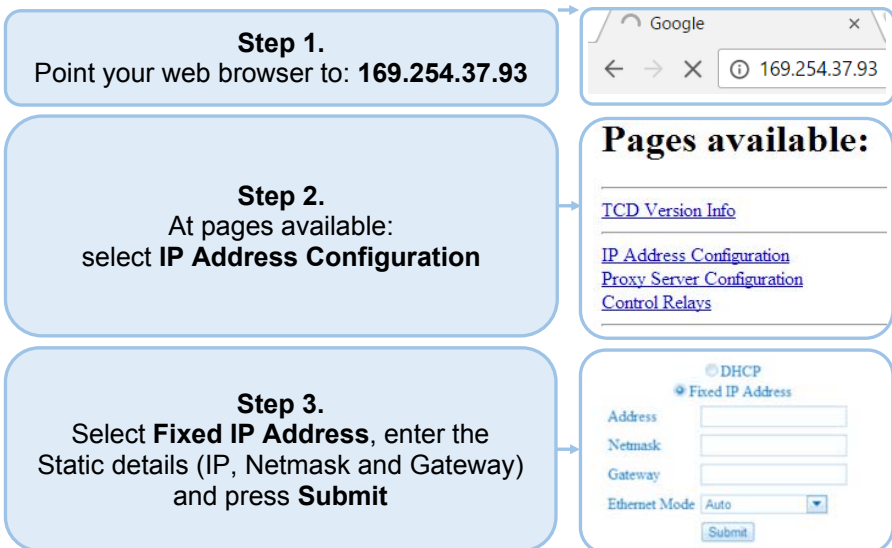
Pins 1 to 16 can be set to the following options via Online Maintenance Software, Emizon Phone App or by calling the Emizon Helpdesk.

- Positive Applied
- Positive Removed
- Set/Unset (Positive Applied)
- Set/Unset (Positive Removed)
- Disabled

## Assigning a Static IP Address (when no other Path is available)

To assign a static IP address, a Laptop is required. A network connection is not required. The minimum firmware must be 1.5.4.

**Note, the TCD must be De-activated either by the ARC or by Emizon prior to assigning a Static IP address.** The TCD is set to DHCP by default. If a static IP is required, using an Ethernet cable, connect directly from a laptop to the TCD Ethernet port and follow the steps below.





## Step 4: Boot Up and Signalling Check

- Turn on the power supply to the panel, wait for approximately 30 seconds
- The power status Green LED 101 will illuminate.
- Upon boot up the following sequence is displayed.



- Check Ethernet activity LED 301 is lit, it flickers if data present.
- If this is the first time this TCD is being installed, wait for **tL** on the display then press and hold the **Set and Mode** buttons together for 10 seconds or until the display shows **UF** . The TCD will make contact with the Emizon Service Platform and download the latest firmware.  
**UF** indicates the update has taken place, **Uc** indicates the TCD already has the latest software.
- The TCD will automatically **REBOOT** after 20 seconds.
- Allow the TCD to boot up (30 seconds) and go to **tL** state.

## Step 5: Commissioning with your ARC (Unbundled)

- Call the ARC with the TCD serial number. The ARC will then ‘associate’ or link the TCD to the customer details on their system and ‘activate’ the TCD.
- Press the ‘Set’ (RH) button for 5 seconds.
- The display will then alternate between **t L O I** and then display **CA** (Completely Activated) indicating a successful activation.  
**The IP LED 201 and GPRS LED 202 will change to solid green to indicate that both paths are communicating with the Emizon Service Platform.**
- For added security there is a time out period, usually 20mins, to press the set button following ARC activation.
- The following codes are shown on the display:



**Note: If the TCD is re powered at any time you will need to repeat the ARC commission process**

## Step 6: System Test and affix Antenna

Following successful activation, test all alarms on both signalling paths. (First send a set of alarms, then disconnect the Ethernet cable, forcing alarms over the GPRS path. NB: The Ethernet LED will start flashing to indicate failure mode).

Remember to reconnect Ethernet connection when testing complete.

Testing complete, affix the antenna in place on top of the panel.

For Reporting times please refer to the Emizon website:

<https://emizon.com/wp-content/uploads/2015/06/Emizon-Reporting-Times-Issue-7.pdf>

**NB:** Emizon is a dual-path service - The TCD must be commissioned with both paths fully activated before leaving site. The minimum recommended GPRS signal strength is 12, the maximum is 31. To send a test signal to the ARC on both paths, press the set button SW401 for 5 seconds.

### Improving a low GPRS signal strength

A High Gain Antenna which has a 5M lead & fitted connector (see page 13) is available from the Emizon installer shop. Emizon can also supply 5M Extension leads: <https://www.emizon.com/shop/>

### Technical Data

- 16 Pin alarm inputs:
- Logic low -0.5V to +0.8V Logic high 3.6V to +30V
- 3 Relays Non-Latching - Contact rating is: 1A@30V DC resistive (non-inductive) load
- Operating Temperature -10 Deg C to +50 Deg C
- Relative Humidity up to 93%

### Power Supply Requirements

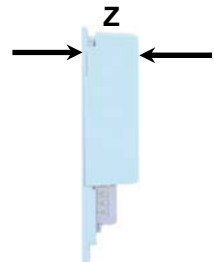
- 11.25v DC to 14v DC
- **Note** -The EN54 version of TCD will accept 24V. Please check the TCD product label for input voltage details.
- Low battery threshold 10.8V +/- 0.2v DC

### TCD Dimensions

X: 123 mm

X

Y: 180 mm



## Diagnostics and Fault Finding

### To take a signal strength tap the Mode button once (SW402)

The display will show a code for the parameter on the display for example **CS** is for signal strength together with the associated value.

The display will remain in a diagnostic mode for 1 minute.

### GPRS Signal Strength **CS**

Signal strength value ranges from 0 (zero strength) to 31 (maximum strength).

A value of **12** or more is normally acceptable. **CS99** indicates that the GPRS modem cannot properly detect the signal strength. **Please be patient, the GPRS path (LED 202) can take a few minutes to find a good signal strength.**

### GPRS Registration Status **GA** and **GR**

The display will then show the GPRS registration status.

**GAOS** indicates successful GPRS Registration.

**GAOS** indicates successful GSM Registration.

**GA** and **GR** readings must display **OS**

**Any other value will not allow a GPRS connection.**

<b>CS</b>	<b>21</b>
Signal	Example
<b>GA</b>	<b>OS</b>
GPRS	Example
<b>GR</b>	<b>OS</b>
GPRS	Example

### To send a test signal to the ARC and Emizon.

Press SW401 for 5 seconds. A test signal will be sent over any paths that are available.

## Emizon Online Maintenance (OLM)

**Site Diagnostics.** Allows you to communicate securely with TCD's across all your installations. Use OLM to check the alarm status, change the pin configuration, check the signal strength, enter static IP addresses, apply F/W updates, set the panel type or set and unset relays connected to CCTV systems.

**Upload Download (UDL)** For panel maintenance - a secure connection from the TCD to the panel, using RS232, RS485 or dial capture.

**Please note:** Before you can add a site to OLM, the TCD must be associated firstly by your Alarm Receiving Centre (ARC).

**Adding a site to OLM:** To add a site to OLM you will require the EM number and the Serial number of the TCD.

### Register for Emizon Online Maintenance at the link below:

<https://www.emizon.com/emizon-online-maintenance-signup-application/>

## Fault Codes & GPRS Diagnostic

Error and fault conditions are shown on the display . The display may show a number code to indicate the nature of the problem. The most common codes together with the potential reasons and solutions are shown on the table

Code	Possible Reason and Solution
E1	<b>Error Code 0:</b> IP Path not connected. Check Ethernet cable from TCD to Router/ Network connection electrically OK.
E2	<b>Error Code 1:</b> TCD has No IP address
E2	<b>GPRS Registration State</b> not 1 or 5. If this persists, it indicates poor GPRS coverage or an antenna location problem.
E3	<b>GPRS Connection not available.</b> If this persists it indicates the TCD is unable to connect to the GPRS IP Network.
E5	<b>No ARP Response.</b> Cannot detect local gateway/router. Indicates no response from router. Most likely causes; TCD plugged into wrong network, router not online or has different IP address.
E7	<b>Cannot detect Emizon Service Platform.</b> Most likely causes; customers internet connection is down or firewall is blocking internet access on the desired port range <b>Outbound Ports TCP 18000 – 18049 Inclusive)</b>
Code	Firmware Update Codes
UA	<b>UA Firmware Update Available.</b> Apply a Firmware update by pressing both buttons for 10 Seconds or until <b>UF</b> is displayed.
UF	<b>UF</b> Followed by a value of between 00 and 99 or displays hexadecimal characters indicates that the firmware update is in progress.
FE	<b>FE</b> followed by a value indicates an error in firmware update process. Repeat process, if the result is the same check network connection.
rr	rr TCD is rebooting followed by <b>6U, 6C, E1, 01</b>
Uc	<b>Firmware Update Complete.</b> followed by t1, 01 indicates the firmware update is complete and awaiting signalling both paths.
Code	For GPRS signal strength tap the left hand button once (SW402)
CS	<b>Signal strength.</b> 12 is the minimum, 31 is the Maximum. Recommended minimum usable signal is 12. 99 indicates no signal.
GR	GPRS Registration state which must read <b>05</b>
GP	GSM Registration state must read <b>05</b>
Gd	Grade type <b>L3, L4</b>
AG	Age of GPRS reading (values in shown in seconds)
OP	Operating mode <b>I G, GP, I P, G-1 -</b>

Troubleshooting Guide for IP/GPRS, GPRS/PSTN & Bi-Path IP/PSTN		
For IP Failure	For GPRS Failure	For PSTN Failure
<b>IP LED 201 indicates the IP path is up.</b>	<b>GPRS LED 202 indicates the path is up if IP/GPRS. If GPRS/PSTN the GPRS is LED 201</b>	<b>PSTN LED 202 indicates the PSTN path is up.</b>
Has the Quick Start Guide been followed? Has the TCD been <b>Associated and Activated</b> by the ARC?	Has the Quick Start Guide been followed? Has the TCD been <b>Associated and Activated</b> by the ARC?	Has the quick Start Guide been followed? Has the TCD been <b>Associated and Activated</b> by the ARC?
Is the RJ45 physically connected to the TCD and the Router/Switch?	Is the Emizon antenna physically connected to the TCD and positioned correctly?	<b>Is the PSTN wired to T1 and R1 terminals?</b> Unscrew White SLIC cover to check the wiring.
Is LED 301 next to the RJ45 Cable flashing? LED 301 only indicates data is passing. LED 201 indicates the IP path is signalling.	<b>Take a signal strength on the TCD</b> by pressing SW402 once, then <b>Observe the GS reading, Minimum is 12, maximum is 31.</b> The GA and GR reading must read 05. E.g. <b>GS 27, GA 05, GR 05.</b>	With a Multi-meter check if there is approximately 50V present on PSTN connections <b>between T1 and R1.</b>
Has the RJ45 cable been tested for data? e.g. Can you connect to the Internet? Try rebooting the router for two minutes. Try a speed test on a laptop.	If a standard Antenna (matchbox sized white) is currently fitted and the signal is below 12, try installing an Emizon High Gain Antenna Internally or externally to improve the signal strength. A 5M Extension is also available from Emizon.	Press SW401 for 5 seconds to force a poll and wait 5 minutes, observe LED 202. LED 202 should flash then go solid on to indicate the PSTN path is up.
Does the TCD require a Static IP Address? The TCD is DHCP enabled by default. To apply a Static IP Address, Subnet mask and Gateway, use Emizon Online Maintenance / Phone app or call Emizon.	If the GPRS signal is still low, relocate the High Gain Antenna externally to improve signal strength to 12 or above. The minimum recommended signal is 12 and the maximum is 31. The higher the GS reading the better the signal. GS 99 indicates no signal.	Can an outside call be made with a Butt phone tester?
Have ports <b>18000 – 18049 inclusive TCP outbound</b> been opened on the Firewall by the person who is responsible for the network?	LED 101 located on the GPRS Daughter board should indicate a double flash once every 3 seconds.	Does an external call require a <b>Dial Prefix e.g. 9 or 0?</b> If so, use Emizon Online Maintenance / Phone app or call Emizon to apply a Dial prefix.
The IT department may require our Destination IP addressees? If so, ask the IT department to request the Destination IP Addresses via email to: <a href="mailto:helpdesk@emizon.com">helpdesk@emizon.com</a> referencing the Serial number of the TCD or the EM number. We will send the Destination IP Addresses via email on request	To identify if both paths are signalling  <b>For IP/GPRS:</b> <b>LED 201 is IP &amp; LED 202 is GPRS</b>  <b>For GPRS/PSTN:</b> <b>LED 201 is GPRS &amp; LED 202 is PSTN</b>  <b>For IP/PSTN:</b> <b>LED 201 is IP &amp; LED 202 is PSTN</b>	Does the Phone line require a PSTN filter? Investigate the line further or get the phone line checked by the phone provider.

## Alarm Panel Compatibility

If connecting your alarm panel to signal via the TCD you will require a panel connection guide.

For the latest list of compatible panels we refer you to our global and/or regional websites. At this moment the following panels are compatible and documented. Emizon Panel Connection Guides provide instructions for programming and wiring to your Alarm panel. Please ensure you are using the latest version. Download Panel Connection Guides at the link below or scan the

Supported Panels	
Make	Model
<b>Bosch</b>	Easy Series, Solution Series 16.64
<b>Castle</b>	Euro
<b>Cooper Menvier</b>	Scantronic 95EN, Menvier M series (not T900), ION Range / Menvier 30, 40, 100 & 300, Menvier M series (not T900), ION Range / Menvier 30, 40, 100 & 300
<b>GE</b>	ATS 200X/300X/400X, Aritech CD, ATS 200X/300X/400X Dial Capture, ATS 200X/300X/400X Dial Capture, ATS Advance Dial Capture
<b>Guardall</b>	All with RS232 Serial Port
<b>Honeywell</b>	Galaxy G2, Galaxy G3/Dimension, Galaxy (Dial Capture), Galaxy Flex 3 (Dial Capture), Galaxy G500, G512 and Flex 1 & 2, Galaxy Flex 3 RS485
<b>DSC</b>	All
<b>Risco</b>	Prosys, Agility Lightsys
<b>Gardtec</b>	595 Series
<b>Siemens</b>	SPC Ethernet
<b>Texecom</b>	Texecom Premier, Premier Elite
<b>HKC</b>	SecureWave Range
<b>Caddx</b>	Nx,4,8,16 Dial-Capture, Via NX585/Serial Interface
<b>GE Interlogic</b>	Tecom System Challenger Version 8
<b>Inner Range</b>	Concept 3000/4000
<b>Paradox</b>	SP/MG (Dial Capture)
<b>Satel</b>	Integra (Dial Capture), Satel (Integra SIA over IP)
<b>NOX (SIA over IP)</b>	DC09 SIA over IP
<b>Kentec Fire</b>	Syncro / Solo
<b>Advanced Fire</b>	Mx
<b>Orisec</b>	CP Range

<https://www.csldual.com/getfile/7648/>

# Emizon High Gain Antenna Install Guide (HGA) (Suitable for indoor and outdoor use)

Not included, available from Emizon. Code 5060386680024

## Introduction

The Emizon High Gain Antenna is supplied and fitted with a 5M lead and an MMCX male connector that connects to the Emizon TCD. The HGA is designed to be installed at sites where the received signal at the alarm panel is not strong enough for a reliable GPRS signalling path.

## Positioning the HGA

The HGA must not be fitted right next to the alarm panel, likewise the 5M of cable must not be coiled up and placed inside the panel as this will not improve the signal strength. Instead utilize the 5M of cable by placing the HGA in a higher position than the alarm panel (loft space) to maximise the chance of a better signal strength. It is also advised to fit the HGA away from any Conduit, Electrical cable etc.

If fitting the HGA inside a roof space, be aware that in modern buildings the insulation bats may have foil fitted. Where the site has a metal clad roof it is advisable to fit the HGA externally and high as possible and away from the Panel and in free space. When securing the HGA to a wall please ensure you use the bracket provided. This ensures that the HGA is at the required distance from the wall.

## Connecting the HGA

Prior to connecting the HGA to the TCD the power must be removed from the TCD. Connect the MMCX male connector to the TCD and apply power to the TCD. On the power up wait for **T1 01** on the display. LED 101 on the small GPRS PCB should flash every 2 seconds.

## Taking a signal strength on the TCD

Check the signal strength with a signal tap of the left hand button **SW402**, then read the **GS, GA and GR** values on the display. The values will be display for 1 minute.

The minimum signal strength is **GS 12** and the maximum signal strength is **GS 31**.

Do not press the left

**SW402** repeatedly.

An example of a strength reading is

**05 - GR 05**



**LED 202** indicates a valid GPRS path if on an IP/GPRS Grade.

**LED 201** indicates a valid GPRS path if on a GPRS/PTSTN Grade.

## NOTES:

- **The GS value must read 12 or above.** The **GS** and **GA** value must read **05** for GSM/GPRS Registration.
- If the signal strength is still low the signal may be improved by relocating the HGA.
- Emizon can supply a 5M Extension Cable for areas where distance is a problem. EAN Code 5060386680093.

## Emizon RS232 Converter for the Texecom range

The Texecom RS232 Converter supplied by Emizon should be used for connection between the TCD RS232 terminals and a Texecom TTL COM port.

This has a 5 way Molex connector on one end for connecting to the panel and 3 trailing wires on the other for connection to the TCD RS232 terminals.

The Black wire should be connected to the TCD RS232 GND terminal. The Yellow wire connects to the TCD TX terminal and the Blue wire connects to the RX terminal. The Molex connector on the other end of the PC-Com adaptor should be connected to COM1 or COM2 on the alarm panel.

**Black - TCD RS232 GND Terminal**

**Yellow - TCD RS232 TX Terminal**

**Blue - TCD RS232 RX Terminal**

**Molex Connector - Panel COM1 or COM 2**



For Texecom panel programming and wiring details please visit:

<https://www.csl dual.com/getfile/7648/>



## TCD Internally Generated Alarms

Alarms and restores are shown together. Some events do not have an associated restore.

### Internal Alarms Contact Id

E350 00 315 R350 00 315 - **External Panel Connection Failure**  
E306 00 830 - **Configuration changed (whilst activated)**  
E305 00 831 - **System Restarted (UP\_WAS\_RESET)**  
E354 00 832 R354 00 832 - **Previous Alarm was discarded due to timeout**  
E302 00 833 R302 00 833 - **Low Battery**  
E307 00 834 - **Self Test Fail (probably flash CRC fail)**  
E351 00 840 R351 00 840 - **Primary Path Local Fault**  
E352 00 841 R352 00 841 - **Secondary Path Local Fault**  
E411 00 835 - **UDL session start**  
E412 00 835 - **UDL session end**  
E306 00 836 - **FW Updated**  
E602 00 837 - **Periodic Test Alarm**  
E354 00 838 - **ACKED bad panel data to prevent panel getting stuck in a loop**  
E354 00 839 - **Alarm data was lost e.g. no zero block at end of SIA events**

### SIA Alarms

#### External Panel Connection Failure

[#XXXXXXX|Nti00:00:00|YS315|ATCD PANEL FAULT]  
[#XXXXXXX|Nti00:00:00|YK315|ATCD PANEL RESTORED]

#### Config change (whilst activated)

[#XXXXXXX|Nti00:00:00|YG830|ATCD CONFIG CHANGED]

#### System Restarted (UP\_WAS\_RESET)

[#XXXXXXX|Nti00:00:00|YW831|ATCD RESTARTED]

#### Previous Alarm discarded

[#XXXXXXX|Nti00:00:00|YS832|ATCD EVENT DELIVERY FAIL]  
[#XXXXXXX|Nti00:00:00|YK832|ATCD EVENT DELIVERY RESTORED]

#### Low Battery fault

[#XXXXXXX|Nti00:00:00|YT833|ATCD PSU VOLTAGE LOW]  
[#XXXXXXX|Nti00:00:00|YR833|ATCD VOLTAGE RESTORED]

#### Self Test Fail (flash CRC fail)

[#XXXXXXX|Nti00:00:00|YF834|ATCD SELF TEST FAIL]

## TCD Internally Generated Alarms (Continued)

### SIA Alarms (Continued)

#### Primary Path Local Fault

[#XXXXXX|Nti00:00:00/NT840|ATCD PRI IFACE FAIL]

[#XXXXXX|Nti00:00:00/NR840|ATCD PRI IFACE RESTORE]

#### Secondary Path Local Fault

[#XXXXXX|Nti00:00:00/NT841|ATCD SEC IFACE FAIL]

[#XXXXXX|Nti00:00:00/NR841|ATCD SEC IFACE RESTORE]

#### Upload / download session

[#XXXXXX|Nti00:00:00/RB835|ATCD UDL START]

[#XXXXXX|Nti00:00:00/RS835|ATCD UDL END]

#### Firmware Updated (whilst activated)

[#XXXXXX|Nti00:00:00/YG836|ATCD FIRMWARE UPDATED]

#### Periodic Test Alarm

[#XXXXXX|Nti00:00:00/RP837|ATCD PERIODIC TEST]

#### ACK bad panel data to prevent panel getting stuck in a loop

[#XXXXXX|Nti00:00:00/YS838|ATCD BAD PANEL DATA ACKED]

#### Alarm data was lost e.g. no zero block at end of SIA events

[#XXXXXX|Nti00:00:00/RT839|ATCD DATA LOST]

#### Path Tests Contact Id

E601 01 801 - **Ethernet Primary**

E601 02 801 - **Ethernet Secondary**

E601 01 802 - **GSM Primary**

E601 02 802 - **GSM Secondary**

E601 01 803 - **PSTN Primary**

E601 02 803 - **PSTN Secondary**

#### SIA

[#XXXXXX|Nti00:00:00/pi001/TX801|ATCD IP PRI TEST] - **Ethernet Primary**

[#XXXXXX|Nti00:00:00/pi002/TX801|ATCD IP SEC TEST]- **Ethernet Secondary**

[#XXXXXX|Nti00:00:00/pi001/TX802|ATCD GPRS PRI TEST]- **GSM Primary**

[#XXXXXX|Nti00:00:00/pi002/TX802|ATCD GPRS SEC TEST]- **GSM Secondary**

[#XXXXXX|Nti00:00:00/pi001/TX803|ATCD PSTN PRI TEST]- **PSTN Primary**

[#XXXXXX|Nti00:00:00/pi002/TX803|ATCD PSTN SEC TEST - **PSTN Secondary**

## EN-Compliant Installations

To achieve EN-Compliant installation, additional and/or specific requirements may be applicable.

1. The Emizon TCD should be placed in EN-compliant /installation/housing, related to the grade/security levels.
2. In order to use the Emizon service and obtain support services, an authorized person with level 2 access as defined in EN50136-1:2012 should grant Emizon access at level 4.
3. The compliance with EN50136-1:2012 defines the Emizon service as a dual path system and customers should note that a single path system, where the alternate path is either not configured or not working at the point of installation may not comply with the desired standards.
4. EN50136-1:2012 requires that a failure of the ATS communications path is signaled to the alarm system. The Emizon TCD is designed to signal a communications path fault to the alarm system using relay output 2 on the TCD, when the relay configuration is set to the default normal mode. In order to maintain compliance, installers should ensure that the appropriately configured relay output 2 is connected to an input on the alarm system for notification of an ATS path fault.
5. EN50136-1:2012 defines a new requirement for signaling to the alarm system from the communicating device (Emizon TCD) where the Emizon TCD must indicate to the alarm system if an alarm is not delivered within the performance requirements maximum delivery time in the standard. The Emizon TCD can be configured to use relay output 3 to indicate this condition. In order to maintain compliance, installers should ensure that the appropriately configured relay output 3 is connected to an input on the alarm system for notification of a failure to deliver performance event.
6. Availability as defined in EN50136-1:2012 is calculated on per path, per ATS and by ATSN as required. However, it is now possible for the Emizon TCD (or any SPT) to define what caused each failure. For accurate calculations it is advisable to record all causes of downtime such that calculations of relevant ATS downtime can be made more accurately.
7. When the TCD is NOT placed in the AS System housing and therefore the parallel interface interconnect cable is not protected by this system housing special configuration is needed to achieve tamper detection. In such case installer needs to connect two wires within the interconnect cable, each to a parallel input. One input should be configured as Pos-applied and the other Pos-removed. Corresponding input alarms should be defined at the ARC as Interconnect Tamper between Alarm system and TCD.
8. Installer has to verify and arrange the ATS in such manner that in situations transmission links are shared with other alarm and/or non-alarm applications this will not prevent the ATS to meet its performance, operation and maintenance requirements of the European Standards applicable.
9. The installer should record in the site log where alternative facilities are provided such that accurate availability can be determined, as it is impossibility for an ATS to detect this situation, and the ATS will therefore treat record and define any outage of the ATS as unavailable. The installer needs to verify the performance of the ATS according table 2 and 3 of the EN50136-1:2012 at commissioning of the ATS and following any changes (ATE and/or transmission network)
10. Logical access at level 4 is defined in EN50136-2:2013.

## EN54-21 Connection to a fire panel

For an EN54-21 Type 1 compliant fire installation Fire Type1 EN54-21 (IP/GPRS) product should be chosen.

### Alarm priority

The hard-wired pin inputs of the TCD should be used for signalling. To comply with EN54-21 clause 7.4.1 TCD pin 1 should be used for a **fire alarm** and pin 2 should be used as **fire fault**. This will ensure that a fire alarm will be transmitted before any other event.

It is recommended to configure the pins as positive removed. The pins should therefore be wired to the alarm panel output relay such that a voltage is applied continuously to the TCD input when the alarm panel is in its normal, non-alarm state. Wire a DC supply to the panel relay **common** and wire the panel **N/C** terminal to the TCD input pin. Logic low (alarm condition) is -0.5v DC to +0.8v DC. Logic high (no alarm condition) ranges from 3.6v DC to 30v DC. The TCD should be configured as either **Original** or **Hybrid** internal alarm format to ensure that the pin input events are transmitted as **Fast Format**.

Ensure that the ARC is informed that the pin labelled as **1** is used as fire alarm and that the pin labelled **2** indicates a **fire fault**.

Other pin inputs may be used for other non EN54-21 purposes by arrangement with the ARC.

The output relay terminals are labelled **NO C NC** and are numbered left to right 1, 2 and 3. Relay 1 is the control relay and can be used for non-EN54-21 purposes. Relay 2 is the fault relay. When there is no fault, the relay is held in the activated **NO** position. A fault condition will cause the relay to deactivate into the **NC** position. A fault is triggered on this relay when: there is a communication network fault, there is a line fault, there is a hardware or software failure, there is a power failure or the ARC acknowledgment was not received within 100 s (Type 1). Relay 2 should be wired to the alarm panel fault input or to a separate light emitting indicator as required by EN54-21 5.3.b. Relay 3 is the RPS relay and should be used to indicate the successful receipt of an ARC acknowledgement either at the fire alarm panel or by a separate light emitting indicator, as required by EN54-21 5.3.a.

### **Mounting in an EN54-4 compliant power supply**

To comply with EN54-21, the TCD must be mounted within the fire alarm panel enclosure or within an EN54-4 compliant power supply housing. This housing must be of a robust, metal construction to a minimum of IP30 of EN 60529:1991. The TCD should be fixed securely within the enclosure using the two 90mm x 15mm tapes provided. These should be affixed to the TCD's rear plastic base and the enclosure as per picture below.

The power supply should be capable of supplying 150mA (typical) and 350mA (peak) at 12V DC. To comply with EN54-21, a power supply shall conform at the minimum to the same availability level as the power supply for the fire alarm panel in accordance with EN54-4.

Please affix the enclosed EN54-21 label supplied with the TCD to the outside of the TCD enclosure.



## EN54-21 Connection to a fire panel Continued


### EN54-21 Transmission path performance - EN50136-1:2012 ATS DP4

Path	Transmission time. Required 10s	Max transmission time. Required 20s	Reporting time	Availability. Required A4 = 99.8%	Security substitution. Required S0	Information security. Required I0
LAN	<10s	<20s	90s	>A4 99.98%	S2 (highest)	I3 (highest)
GPRS	<10s	<20s	90s	>A4 99.98%	S2 (highest)	I3 (highest)

The Emizon transmission path performance exceeds the EN54-21 requirements.

### EN54-21 Labelling

When the TCD is configured as an EN54-21 compliant fire alarm transmission system the additional enclosed EN54-21 label shall be fixed to the outside of the housing in which the TCD is fitted.

 <b>0560</b>
<b>Emizon Networks Ltd</b>  17  <b>0560-CPR-162190024 / 00</b>
<b>EN 54-21:2006 TYPE 1</b>  <b>Fire and Security Alarm Transceiver</b>  <b>TCD</b>  <b>Technical data: see TCD Installation Guide</b>
<a href="https://www.csldual.com/getfile/7687.pdf">https://www.csldual.com/getfile/7687.pdf</a>
<b>Provided options and other product information is available in the Installation and User Instructions of the Supervised Premises Transceiver and ATSP / ATSN</b>

## 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 Directive (1995/5/EC). EN55022 Emissions Class B. EN50130-4 Immunity. And 89/336 Electro Magnetic Compatibility Directive) as amended by 92/31/EEC.

### Compliance and EN-Characterises:

Emizon TCD is suitable for installation in systems complying with EN 50131-1 and is available to comply with EN Grades 2, 3 and 4. Emizon is tested and certified for EN50136-1:2012, EN50136-2:2013, 50130-4/2011 and 50130-5/2011. As a transmission system it is certified to EN50136-1:2012 for ATS Categories SP1, SP2, SP3, SP4, SP5, over Ethernet only, and DP1, DP2, DP3, DP4, EN54-21:2006 Type 1 where EN-installation instructions in this manual apply. It only meets the EN 50131-10:2014 requirements when it is installed in an EN 50131-3:2009 or EN 50131-6:2008 compliant housing.

### Environmental Compliance:

**EN50130-5** Environmental Class II (-10 to +55)

EN50136-2:2013 -Signalling operation: Pass-thru

EN50136-2:2013 Acknowledgment operation: By RCT (end-to-end)

### Restrictions/instruction for EN-installation:

Placement in EN-certified housing to be provided separately.

**Maximum cable length installation:** PSTN=Max 30mtrs, Serial BUS no restrictions, specifications panel manufacturer apply, Parallel inputs=Max 3 mtr.

### Network Interface Monitoring operation EN50136-2:2013

Encrypted polls to the service-platform with timed acknowledgements and timed intervals so SPT, Platform and RCT monitors operation.

**Information security:** All connections between SPT, Service-platform and RCT are at least AES128 encrypted.

**Substitution Security:** The TCD is supplied without a key and that key is generated during commissioning of the installation. The key will be a minimum of a 128 bit AES key. Once the key has been produced there is no other method of gaining direct access to the TCD without using the existing authorised connection. As the TCD initiates the access there is no way that an unauthorised party can attempt to gain access directly to the TCD.

## Emizon Warranty and Returns Procedure UK Only

Emizon will refurbish or replace, at our discretion, any Stand-Alone TCD developing a fault within 5 Years. All returns must be accompanied with an Emizon Returns Number, this can be obtained by calling the Emizon Helpdesk as detailed in the procedure below.

### Returns Procedure UK only

The installer reports the fault to the Emizon Helpdesk on **0330 880 4422** quoting the Serial Number and the description of the fault. Please ensure the TCD is powered up with the IP cable and GPRS antenna connected as we may be able to rectify the problem remotely. If the TCD is found to be faulty, the Helpdesk will provide a Returns Number to the installer.

We then require your delivery details via an e-mail sent to [helpdesk@emizon.com](mailto:helpdesk@emizon.com) Including the Returns Number, Unit Serial Number, Contact Name, Telephone Number, Delivery address & Billing address.

Once the Helpdesk has received your email with the details above, we will dispatch the Advanced Replacement TCD via UPS (UK Only) to the delivery address supplied. Upon dispatch of the Advance Replacement TCD, the installer is billed initially at the cost of a new TCD. Once we are in receipt of the faulty TCD, we will issue a prompt credit to the installer. We advise that the faulty TCD is to be returned within 30 days of the Advance Replacement being fitted. Please note, a credit will only be applied if the faulty TCD has no visible signs of physical damage or missing components.

The Advance Replacement TCD is fitted by the installer and the faulty unit is then returned to the address below. Costs for returning the faulty TCD is covered by the Installer. To prevent any damage in transit, please ensure the TCD is returned in anti-static packaging and preferably in an Emizon cardboard box. Please ensure that the standard white Antenna is not returned.

**Emizon Networks Ltd.  
Returns Department,  
1, Allerton Road, Central Park,  
Rugby, Warwickshire, CV23 0PA.**

**NOTE: Please ensure the faulty TCD is in a De-associated State with**



### 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 the device, please dispose of the product as per your local authority's recycling processes. For more information please contact your local authority.

## Open Source Licensing

Details of open source software used within the Emizon service, and the license conditions associated are available within the document entitled "Emizon Open Source Licensing" available from the Emizon website.

The document details open source licensed code used within the Emizon TCD 1.X hardware environment. Details of licensed source code which is modified or linked to by Emizon applications are included. Details of licensed code which is not modified or linked to, and used only as part of Linux command line operations are not detailed here, code, configuration and license details can be found in the Emizon Open Source Package.

### Open Source Software Access

A copy of the Emizon open source software package, which contains all the information, source code, build environment setups and configuration data to build the current Emizon open source platform environment are available. To obtain access, please send a large stamped self addressed envelope to the Emizon main office address, including details of the Emizon TCD device (serial number and purchase details). Emizon will then return a copy of the Emizon Open Source Package relevant to the device in which it was distributed.

The works on 10/100 Ethernet switches and routers







**THIS GUIDE MUST BE READ BEFORE CALLING THE HELPDESK.**

**UK & Ireland Contact Details**

Main UK Telephone: +44 (0)1858 575 754

24/7 UK Helpdesk: 0330 880 4422

Website: [www.csldual.com](http://www.csldual.com)

Latest Downloads: [www.csldual.com/uk/installer-zone/](http://www.csldual.com/uk/installer-zone/)

E-mail: [helpdesk@emizon.com](mailto:helpdesk@emizon.com)

**Netherlands Contact Details**

NL Helpdesk 088-4747777

Website: [www.emizon.nl](http://www.emizon.nl)

Latest Downloads: [www.emizon.nl/downloads/](http://www.emizon.nl/downloads/)

E-mail: [helpdesk@emizon.nl](mailto:helpdesk@emizon.nl)

**For global support please contact your regional office.**

**UK Returns Address**

Emizon Networks Limited (UK)

1 Allerton Road

Central Park Rugby

Warwickshire CV23 0PA.

Emizon Networks Limited (UK) reserves the right to adjust specifications of this system, at any time and without notice, in the interests of product improvements.