DallasDelta
Corporation Pty. Ltd.

4GS DOORSTATION

User Manual

SENTRY CST GUARD

Australian Made

Vandal Resistant

Weather Resistant

This user manual includes a step by quick start guide, Item checklist, diagrams and specifications.

CONTENTS

1. SAFETY AND CARE INFORMATION

Please read these instructions thoroughly before starting installation. This product must be installed and maintained only by competent personnel familiar with electrical and telephone installation.

IMPORTANT! This phone, like any wireless phone, operates using radio signals and the wireless network, which cannot guarantee connection in all conditions. Therefore, you should never rely solely upon any wireless phone for essential communications (e.g. medical emergencies).

Remember, to make or receive any calls, the phone must be switched on, appropriately configured and in an area with adequate cellular signal strength. Emergency calls may not be possible on all wireless phone networks, check availabliity with the cellular service provider.

1.1 Operating environment

Make sure that no special regulation is in force that imposes restrictions on the use of mobile phones. Restrictions to mobile phones would also apply to this telephone. Most modern electronic equipment is shielded from radio frequency (RF) interference. However, certain electronic equipment may not be shielded against the (RF) interference from your phone.

1.2 Mains power supply

If a mains power supply unit (PSU) is used as the power source for the telephone, it must be installed by a competent installer and must be provided with a 2-pole disconnect device in accordance with EN 62368-1 Annex L.

1.3 Pacemakers

Pacemaker manufacturers recommend that a minimum separation of 20 cm be maintained between a hand-held wireless phone and a pacemaker. The same restriction should apply to the external antenna of this phone, where fitted. If you have any reason to suspect that interference is taking place, switch off the phone immediately.

The phone's radio signals may interfere with some hearing aids. In such cases move the antenna as far away as possible or consult your hearing aid supplier.

1.4 Other medical devices

Operation of any radio transmitting equipment, including the phone, may interfere with the function of inadequately protected medical devices. Consult a Physician or the manufacturer of the medical device to determine if they are adequately shielded from external (RF) energys. Switch off the phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external (RF) energy.

1.5 Radio transmission equipment

Dallas Delta's GSM products are designed to conform to international standards regarding the acceptance of radio frequency (RF) interference and certain installation locations may interfere with their proper operation. We recommend that Dallas Delta GSM equipment is not installed in close proximity to any equipment that generates (RF) signals (for example, radio transmitters), and is located as far as possible away from it or in a separate room.

1.6 Potentially explosive atmospheres

Do not install the phone or the antenna in any area with a potentially explosive atmosphere, always obey all signs and instructions. Areas with a potentially explosive atmosphere are often but not always clearly marked. They include chemical transfer or storage facilities; vehicles using liquefied petroleum gas (such as propane or butane): areas where the air contains chemicals or particles, such as grain, dust or metal powders.

1.7 Ideal Phone Signal Strength

The ideal phone signal strength can vary depending on many factors. Generally, you should aim for a connection above -85dBm.

To confirm you signal strength use code Option 501 (check the Programming Summary/ Functions in Section 9.6 of this manual for details)

Below are the signal strength ranges and their associated strength quality.

- **-50** to **-64 dBm**: Very good signal
- **-65** to **-84 dBm**: Good signal
- **-85** to **-100 dBm**: Below average/Poor signal *
- Below **-100 dBm**: Close to no signal *

* If it's below **-100 dBm**, your phone will likely lose connection or have very poor service quality. You may require relocation of your antenna or additional equipment to boost your signal strength. Please reach out to our Service Department for advice on this.

If the phone reads out "**0**" dBm you are disconnected from the network.

WARNING

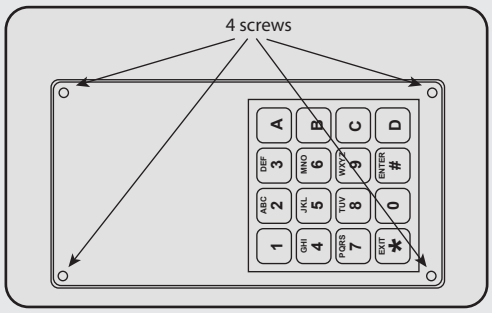
• Site survey to ensure there is adequate 4G mobile signal coverage on the selected network. If solar power is a requirement, ensure clear, unobstructed view of the sky.

• Obtain a suitable SIM card. The SIM card can have a SIM PIN on it and it will need to be programmed into the unit. If the unit detects a SIM PIN with no PIN configured, it will halt during initialization and wait for the PIN configuration. It is recommended to disable voicemail on the SIM.

• Chose a power source. If solar is used, a 5W to 15W panel is required if not supplied.

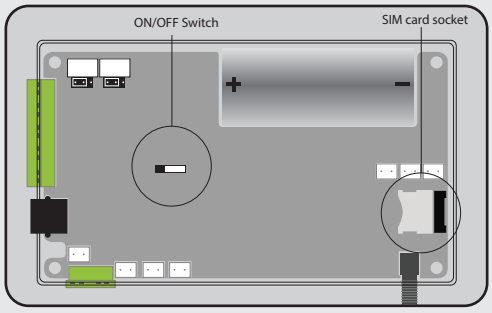
• Only qualified personnel may perform installation and maintenance.

2. QUICK START GUIDE



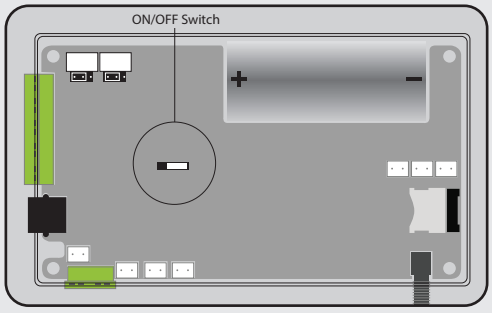
1. Open case

Undo all four screws on the lid of the plastic case located in each corner, to access the internal circuit board (PCB). Retain all screws,



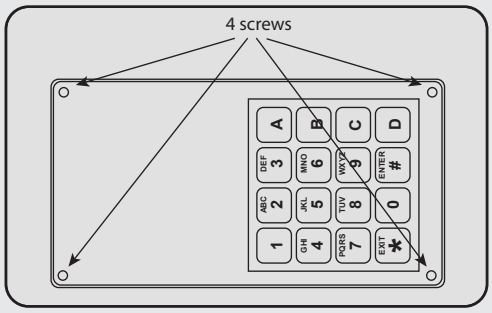
2. Insert SIM card

SIM must be VoLTE enabled (contact network provider)
1 - The small switch located in the centre of the PCB. If set to **ON,** Switch to **OFF** and open the SIM socket by sliding the top forward. **2** - Flip the top of the SIM card holder and Insert SIM card into socket. **3** - Flip the top of the SIM card holder down and slide to lock it.
Please Note: ***For more information reference section -*** *6.2 Installing SIM*



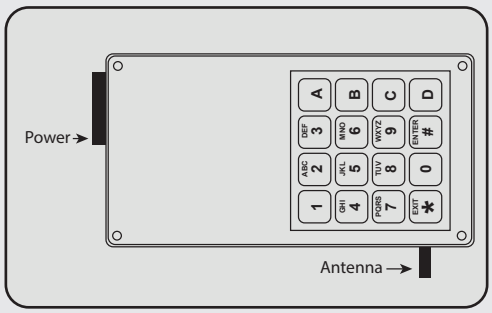
3. Switch on device

1 - located on the centre of the PCB, Switch it to **ON** device on the small switch. **2** - Close top. **3** - Slide top back into position



4. Replace enclosure lid

Carefully replace the plastic case lid and tighten the four screws into each corner.



5. Connect power & antenna

Connect power to green plug (check **diagram 6.1** for correct polarity) and antenna. Carefully restore weather seal and take measures to protect unit from the elements. Note: Incorrect polarity of the connections may result in permanent damage to unit.

2.1 Operational Quick Start Guide

NOTE: Programming and system checks can be completed via USB connection to a PC.

Check the USB key drive supplied with the 4GS phone for a copy of this utility.

The following are the minimum of steps that need to be performed to make the phone operate:

Step 1 - Enter program mode

Press and hold the "**D"** key for a few seconds. A message will read out via the speaker "**entering programming mode**"

Step 2 - Number programming (Push button units)

Program the desired autodial number into the button 1 location. "**1#1#PHONE NUMBER##**"

Note: If you have more than 1 button, use the above format to program the other buttons.

Eg. "**1#2#PHONE NUMBER##**"

Step 3 - Handset type units

The HOTLINE NUMBER will be dialled automatically when the handset is lifted.

This number can be programmed as "**2#PHONE NUMBER##**"

Note: Do not program the Hotline number if button autodial function is required.

Step 4 - Relay Codes

The default relay code is **123**. To change default code on relay 1, enter "**210#XXXX##**" and relay 2 "**211#XXXX##**" Defualt code for relay 2 is "**456**"

A minimum of 3 digits and maxium of 15 digits, is required for this code.

Step 5 - Testing Programming

Check the signal strength to see if there is adequate signal and no issue with the antenna installation or location.

"**501##**" Reads out signal strength.

Step 6 - Exiting Program mode Press "**D**" twice, a message will read "**Exiting programming mode**"

NOTE: Please test basic operation before proceeding with advanced configuration features.

3. PRODUCT DESCRIPTION

This manual describes the 4G LTE versions of our popular door stations and roadside emergency phones, powered by our 4GS PCB (herein referred to as the 4GS).

Being a 4G LTE cellular device gives you the ability to install a telephone anywhere the mobile network is available without the expensive costs of having to run cables to remote or difficult sites.

Door station variants come with auto-dial buttons for dialing from the phonebook, or with full numeric keypads for speed or manual dialing.

The roadside phone is well suited for highways, freeways, tollways as well as many business and commercial settings. All versions can be supplied in either handset or hands-free models.

All phones provide remote control to 2 relays (installed by default),

4. PRODUCT FEATURES

- Robust and weather resistant
- 4G LTE Telstra Certified Module

- Large phonebook
- Alternate phone numbers per phonebook entry
- Global alternate numbers
- Remotely programmable
- Handset or Hands-free operation
- SMS reporting, programming and diagnostics
- Internal battery, providing 6 hours talk time, 50 hours standby
- Internal solar charge regulator with MPPT (Maximum Power Point Tracking) technology
- Optional Hearing Aid Loop

5. INSTALLATION

5.1 Prior to installation

Please perform the following before beginning installation:

- Site survey to ensure there is adequate 4G mobile signal coverage on the selected network. If solar power is a requirement, ensure an clear & unobstructed view of the sky.
- Choose a power source. If solar is used, a 5W to 15W panel is required if not supplied.

5.2 SIM PIN Code

Before you insert the SIM into the 4GS Doorstation:

- Program the SIM PIN onto the SIM using a mobile phone.
- Ensure that you have a 4G service enabled SIM if you want optimum coverage utilising both the 3G and 4G networks. Many SIMS are plan-restricted to operation on the 3G service only.
- Retain the SIM PIN details for future reference.
- Insert the SIM card into the 4GS Doorstation
- Ensure the at the SIM PIN setting on the 4GS Doorstation matches the programmed setting.

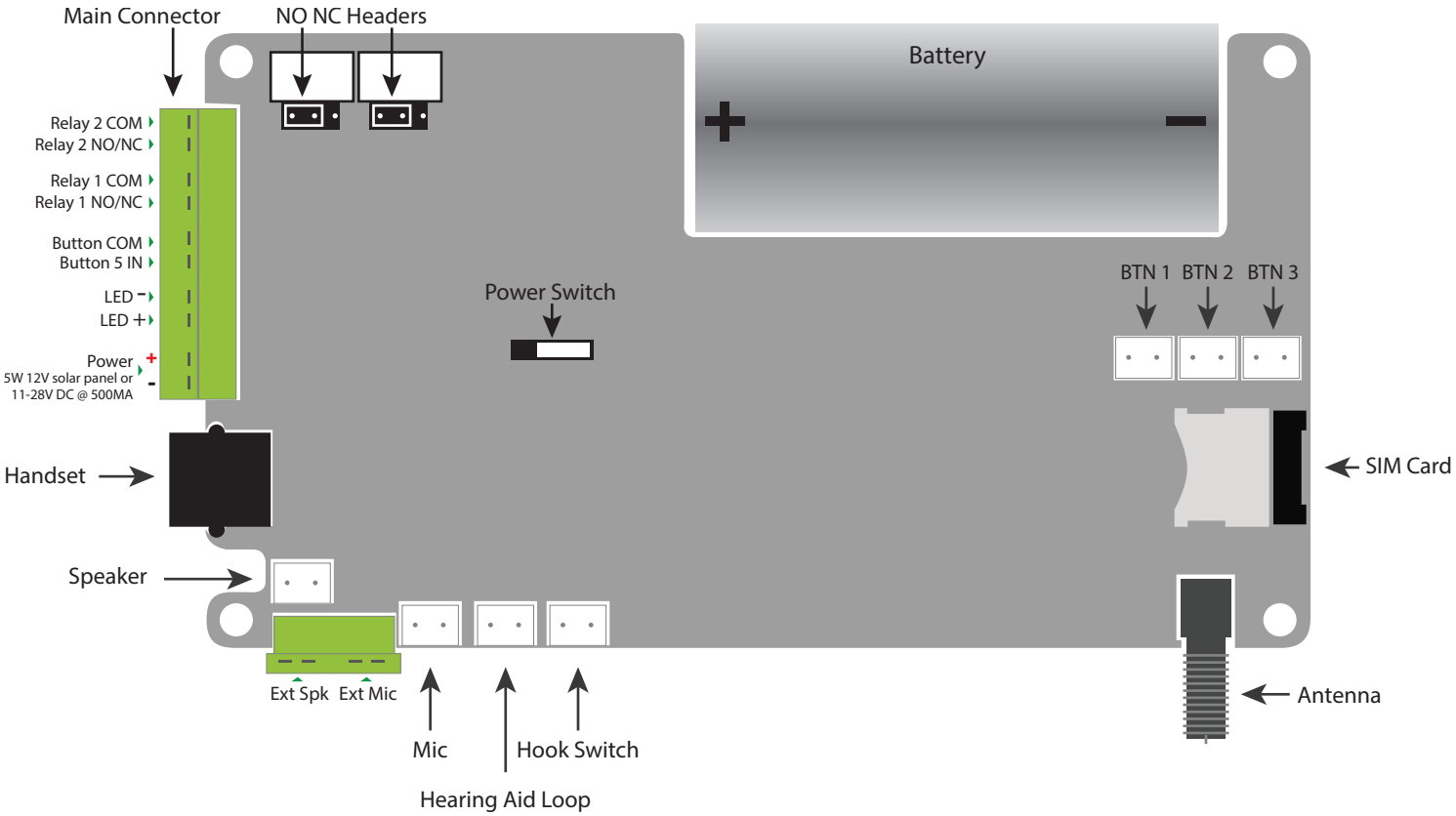
Note: The PIN cannot be changed within this 4GS Doorstation. Change or set a new SIM PIN for using your personal mobile phone.

5.3 Important Information

- Door station and roadside phones can be supplied with power supply options, which may require connection of the power supply to an AC mains supply.
- During testing and commissioning of the telephone it is recommended to use a laptop to connect to the internal USB port. Configuration can also be performed via the keypad fitted on the rear, or via SMS text messages.
- All possible measures must be taken to ensure water, fluid or dust does not contaminate the internal components of the telephone whilst unpacking, preparing and installing the telephone. Failure to do so may invalidate your warranty. Make sure the correct screws are refitted to ensure the integrity of any seals.
- Don’t overtighten the screws as that may damage the box and lid attachments.

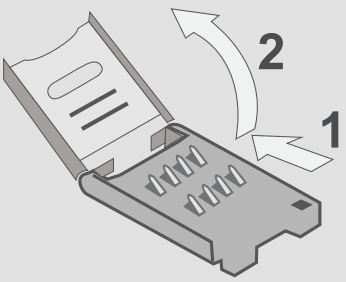
6. CONNECTIONS AND SETUP

6.1 Internal connections



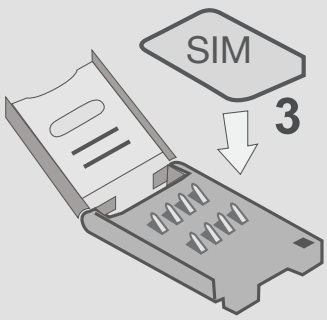
A

Step (1) Lift the lid.
Step (2) Swing lid open.



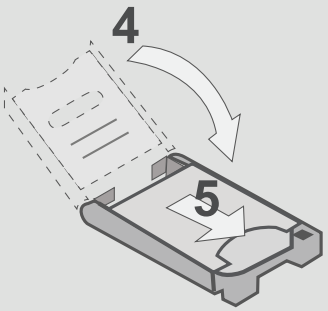
B

Step (3) Place SIM card with contacts facing downward.



C

Step (4) Close lid with SIM secured in place.
Step (5) Slide lid forward to lock possition.



6.2 Installing the SIM

Please Note: POWER switch (on the board) should be set to **OFF** during installation of the SIM card. Switch to **ON** once all connections have been made.

6.3 Battery

The internal battery is design to be permanently connected in circuit, much like a laptop or cell phone battery. If the battery is removed, please ensure it is re-fitted correctly paying special attention to the polarity of the battery and the markings on the PCB. Failure to do so could cause irreparable damage.

The battery chemistry is Lithium Iron Phosphate (LiFePo4) which is a long-life, stable and high-performance battery. It has an expected life span of over 10 years under normal use.

The battery is to be charged only with the built-in charger by connecting a DC power supply with a minimum input voltage of 11V. If Solar charging is enabled, a 12V solar panel with an OCV (Open Circut Voltage) of at least 20V is required, or a DC power supply operating at 12V DC.

At 15W, the battery will be fully charged in approximately 1 HR.

Batteries may be stored connected for up to 6 months with no loss in battery capacity or performance. It is recommended to monitor and recharge the batteries at least once every 6 months while the 4GS is not in use. If the battery voltage falls below 1.5V, it may not recover.

If storage for longer than 6 months is required, it is recommended to remove the battery from the product.

6.4 Connecting the power supply

The 4GS requires an external DC power source and a suitable antenna.

The antenna cable screws onto the SMA connector as shown.

Connect the DC power source to the connector as shown. Do not connect the power supply if the battery has been removed.

Power requirements are **11 - 28V DC @ 2W - 15W (5W recommended)**.

If a solar panel is used, ensure that **option 306** is programmed to enable the MPPT(maximum Power Point Tracking) f eature.

This feature monitors the input voltage and adjusts charge current to maintain the voltage at the maximum point in the IV curve for solar panels.

6.5 LED indications

On the front of the product is a single RGB LED that is used to provide useful status information.

LED Indication	Meaning
Off	Phone switched off - Slide power switch to ON
Yellow triple pulse	Initialising / Searching for SIM & Network Registration
Green double pulse	Standby - ready for use (Audio circuitry active)
Green pulse slowly	Standby - ready for use
Purple double pulse	Keypad entered programming mode
Cyan pulse	Call incoming
Cyan pulse slowly	Call in progress

6.6 Powering up

Step 1 Once the SIM card has been fitted and the DC power supply connected, move the POWER switch on the PCB to the ON position. The LED will begin to show three short yellow pulses to indicate it is initializing. If the LED does not light up, check the power supply is connected, or the solar panel is getting enough sunlight.

Step 2 A start-up tune will be played. Start-up takes about 30 seconds to 1 minute to completely register to the cellular network.

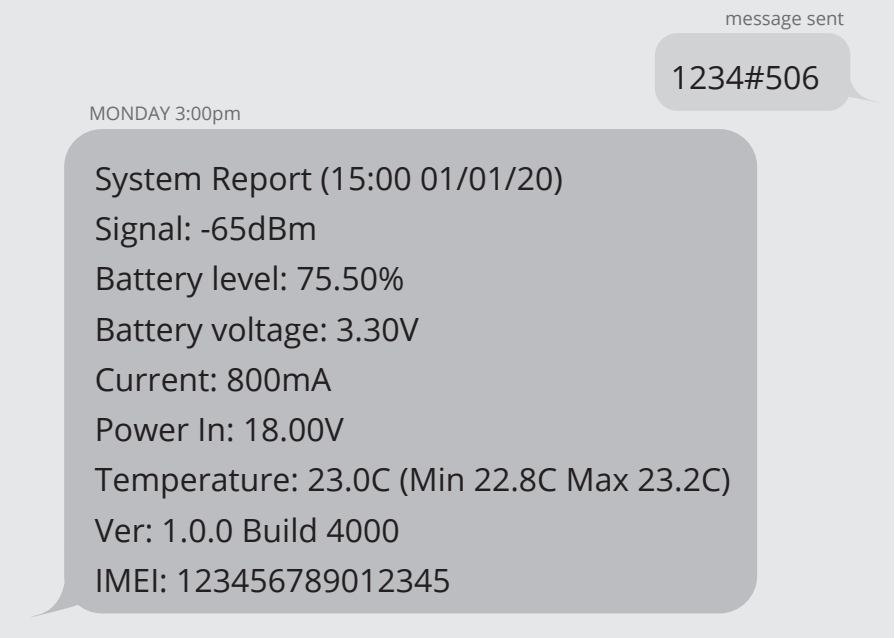
Step 3 Note that pressing any button on the keypad during start-up will cancel the audio tune being played. This is normal. You can begin programming the unit at any point during start up. If you need to enter a SIM PIN now is a good time to do so.

Step 4 When registered on the cellular network, “System Ready” will be played from the hands-free speaker and the LED will change to flashing green pulses.

Step 5 Using a cellular phone, send an SMS command to verify the status. Use the following format for your outgoing message: **1234#506**

The default SMS access code: **1234** should be changed as soon as possible with **Option 201**

The reply on your phone should look similar to the following:



Step 6 Connect a laptop using the external USB cable connected to the 4GS doorstation. Or proceed to section 8 for details on other methods of programming the unit using the keypad.

Step 7 Install and run the “Dallas Delta Configurator” software on the USB stick supplied. Refer to 8.1

Step 8 If everything looks correct in the status report, re-fit the rear panel and complete installation.

Step 9 Make a test call to the phone to ensure the hands-free operation works.

7 OPERATING

7.1 Hands free

4GS Doorstation can operate in hands-free mode. To make a call either press one of the buttons on the front. To end a call, press any of the buttons on the front.

7.2 Handset

To make a call, begin by lifting the handset. Depending on configuration, the phone can auto-dial or accept a speed-dial entry via the keypad. If speed dial is disabled, you can begin dialing to any phone number after lifting the handset and press # to call.

8 PROGRAMING

The 4GS phone can be programmed via multiple methods. The easiest way to perform initial configuration is done by USB, using the “Dallas Delta Configurator” software. This software can be downloaded from dallasdelta.com or delivered upon request.

You can also program the phone via SMS, Keypad entry or by establishing a phone call to the phone and using DTMF.

To program via USB, simply connect a USB Mini cable to the USB socket. Then using the “DDC Configurator” connect to the unit. Help is available for the software online.

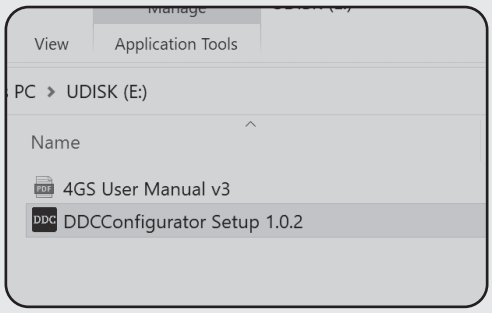
The rest of this section will explain the multitude of parameters that can be configured by the other methods.

SMS, Keypad and DTMF programming all use the same parameters, reference **8.6 SMS Programing (page 16)**

8.1 Programming using Dallas Delta Configurator

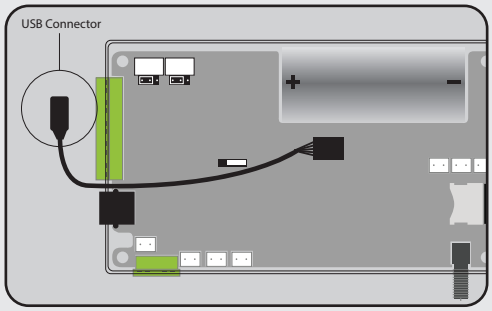
The **4GS DOORSTATION** can be configured using the **Dallas Delta Configurator** software. The configuration software is the quickest and most efficient method for setting up one or multiple units. Settings can be exported and saved on a PC, and uploaded to multiple units.

Please follow the below step by step guide to configure your unit.



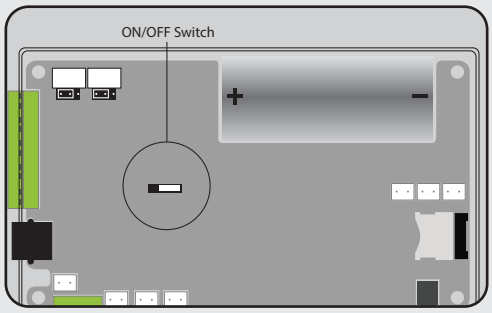
1. Install Software

Using the supplied USB stick, open and Install **Dallas Delta Configurator** software on a PC. The software is compatible with Windows 7 and 10. Double click on the **DDC Configurator Setup** application icon.



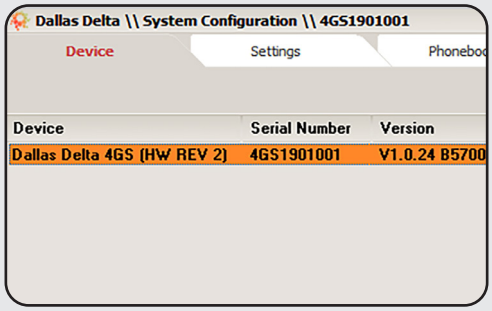
2. Open case & Connect USB

Connect the USB cable from the unit to the PC.



3. Switch on device

Switch on the device with the small switch located on the center of the board

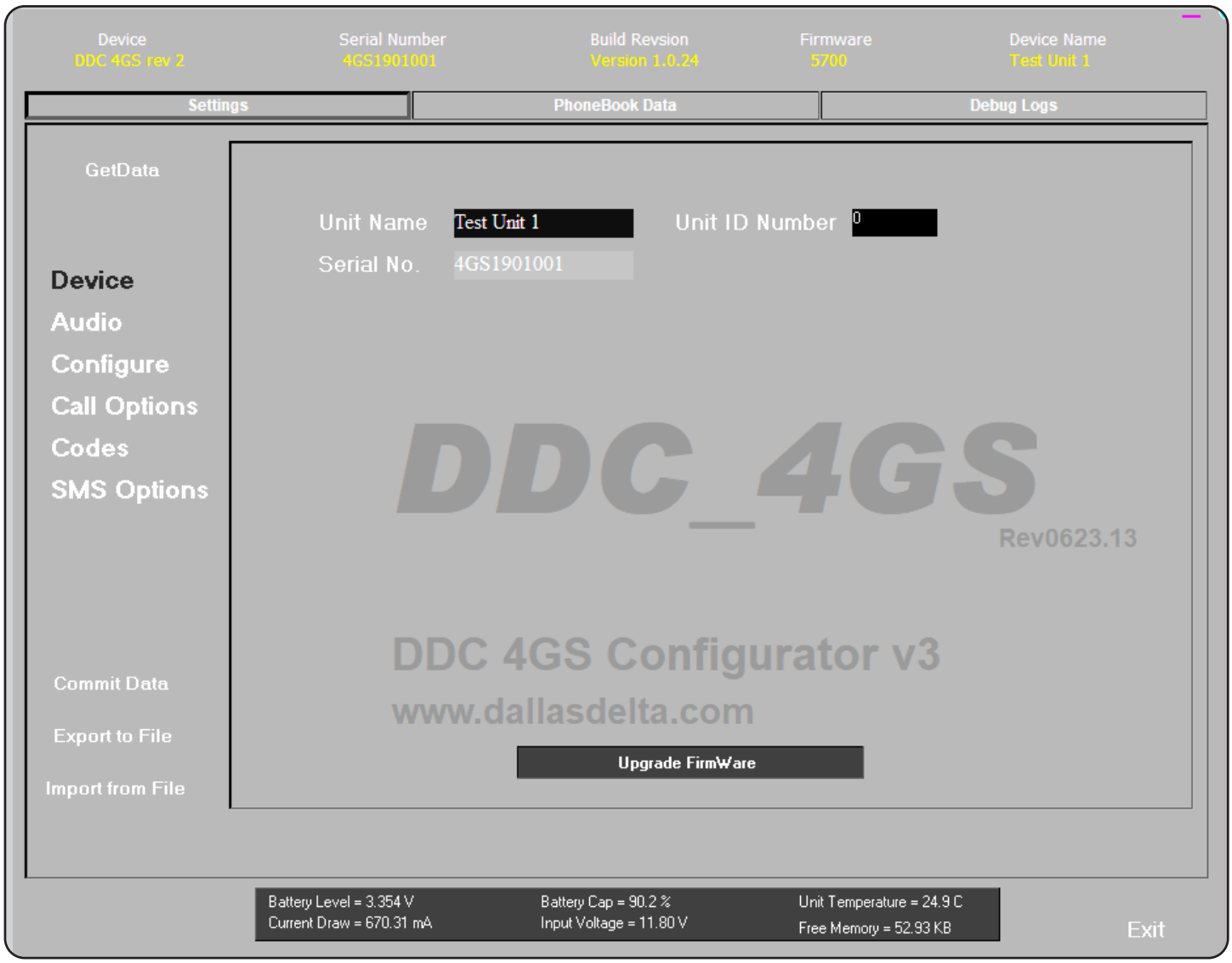


4. Powering up

The 4GS unit will take a minute to power up. Once complete the “Click to configure” screen will appear.
Note: This page displays Temperature, Battery level and current.

8.2 Settings - using Dallas Delta Configurator

The **Dallas Delta Configurator** software user interface displays all the configuration options in the “settings” tab.

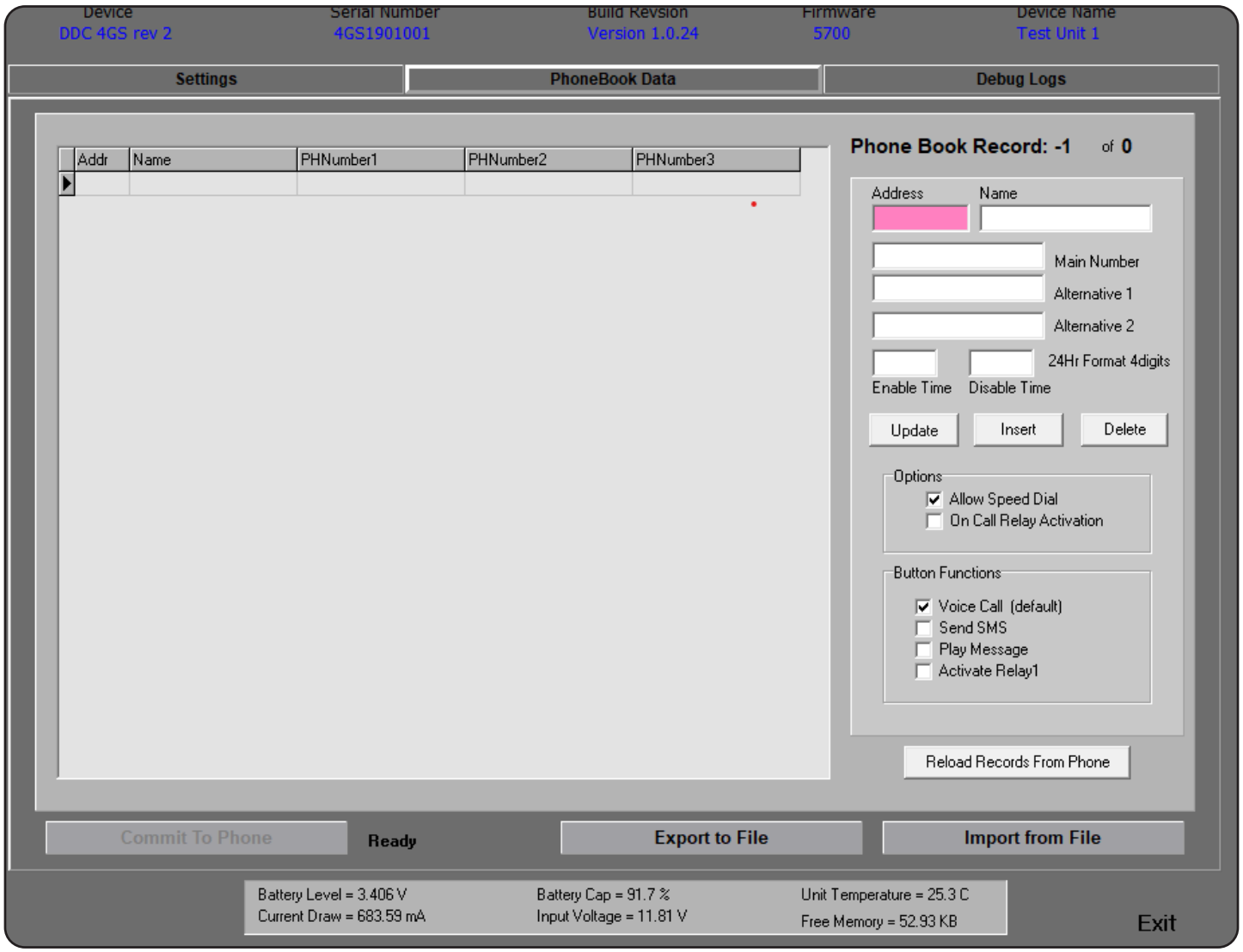


Within the **Settings tab** there are the 6 catagories “Device”, “Audio”, “Configure”, “Call Options”, “Codes” and “SMS Options”. Each Catagories has settings and parameters about the phone’s behaviour that can be programmed. After making all changes that are required press the “Commit Data” button to save changes.

Settings data can be retrieved from the phone and saverd to your computer by pressing the “Export to File” button. The saved file can be uploaded back to the phone, or any other phone to make multiple phones that have the same settings.

8.3 Phone Book - using Dallas Delta Configurator

The **Phone book** tab is for adding in phone numbers into the phonebook. To add a new entry fill in all the fields associated with the entry such as address, and Main Number and click “Insert”. To delete an entry select it and click “Delete”.



Each entry has entry options that can be selected on the right side of the windows; including options to enalbe speed dialing, and activiation of relays on call. After creating all phonebook entries click the “Commit To Phone” button to save the new phonebook into the phone.

The exisiting phonebook can be saved to a your computer with the export to file button. This phonebook can then be imported back into the phone in the future or loaded into other phones to create multiple units with the same phonebook.

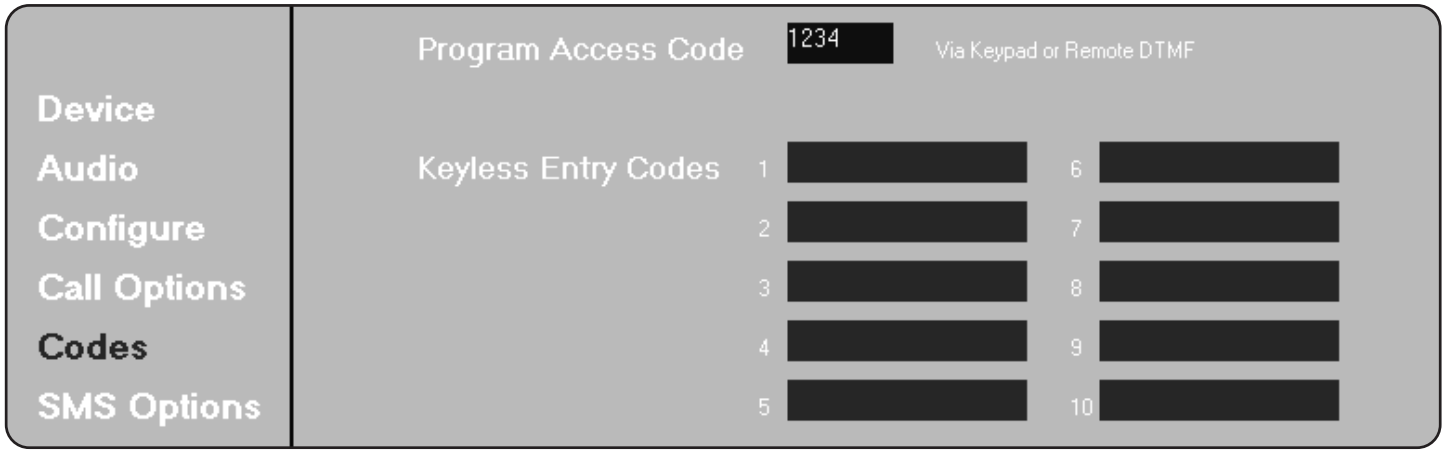
8.4 Phone logs - using Dallas Delta Configurator

There are several tabs for observing the phone's behaviour and updating the firmware.

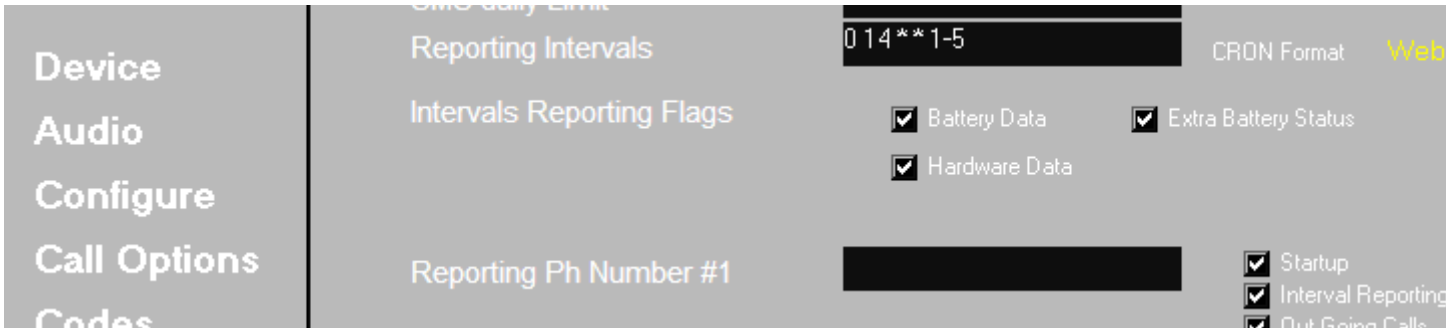
- The **Logs** tab provided a history of tasks performed by the 4GS Doorstation.

8.5 Notes - using Dallas Delta Configurator

The **Keyless entry codes** are only applicable to units with a front keypad.



The **Reporting Intervals** in SMS Options are specified using the CHRON format. Please refer to section 8.13 for examples.



8.6 SMS Programming

Before beginning SMS programming, **OPTION 201** has to be set. Once the code has been set, it must be set as the first command in the SMS programming.

Example: **1234(sms code)#(option)#(new value)##**

Note: Once the SMS code has been sent in the first SMS, which also contains an option, the code remains active for 20 minutes thereafter and further programming SMS commands can be sent without the code. The code is cancelled once you exit programming mode.

SMS programming messages have the following format:

<SMS ACCESS CODE>#<OPTION>(#<CONFIGURATION>)

<CONFIGURATION> is optional and if missing the current programmed value will be read back.

Example: **1234#2** (This will read the Hotline number)

Note: A space can be used in palce of # as a delimiter.

8.7 Keypad Programming

Keypad programming can be entered by holding down the '**D**' key on the rear keypad for two seconds. On variants with front keypad, programming mode is entered by pressing ***#*#** followed by the programming code (default **1234**). Once entered, the LED will change to purple

and a voice prompt will be heard. Use **#** as a delimiter and **##** to commit the entry. For example, to adjust the hands-free microphone gain to the value of 5, you would enter: **100#5##**
Programming mode will time out after 1 minute. Every 10 seconds a beep tone will be emitted to indicate that the phone is still in programming mode.

To exit programming mode, press '**D D**' on the rear keypad, or '**# # #**' on the front keypad.

8.8 DTMF Programming

To start DTMF programming first establish a call to the phone. You will then need to enter the DTMF programming code (Default 1234), upon which you will hear a voice prompt. Programming is now done as per the Keypad method, using # as a delimiter and ## to commit the entry.

It is highly recommended to change the DTMF and SMS programming codes; options 200 and 201 respectively.

Programming options are configured into sections. Phone and phonebook, Audio parameters, Codes, Options, SMS Settings and Functions.
To exit programming mode, dial '*** ***'.

8.9 Phone & Phonebook Parameters

OPTION 1 – Phonebook Entry

The phonebook is used for speed dial operations, CLI (Calling Line Identity) feature setup and button configuration. It is recommended that USB programming method as it easiest of the available methods.

Each phonebook entry has an ID that relates to buttons and is used for speed dial. An ID can be up to 6 digits (see OPTION 5 for more information on setting the speed dial length). Entry ID is also mapped to a physical button. Button 1 is ID 1, button 2 is ID 2 and so on.

The phonebook grows in size as entries are added. The hardware on the 4GS has enough storage space for a large number of entries.

The CLI feature enables a matching incoming caller identity to activate a relay.

Button configuration sets the operation that is to be performed when a button is pressed.

A phonebook entry is made up of a number of fields. You can enter in only what is required for the entry or program by field. The fields are as follows:

Field 1: **<Phone number>** The main phone number for the entry and CLI detection

Field 2: **<Alternate number 1>** The first alternate number

Field 3: **<Alternate number 2>** The second alternate number

Field 4: **<Button operation>** Binary encoded value describing the operations performed on a button press for this entry (1 to make a call)

Field 5: **<CLI operation>** 0 to disable or the relay number that should be activated on an incoming call from **<Phone number>**

Field 6: **<CLI start time>** Time of day, in 24 hour format HHMM in which to allow the relay to be activated

Field 7: **<CLI end time>** The last time of day in which to allow the relay to be activated

Programming Phonebook Example

Here are some examples of programming a phonebook entry using the Keypad & DTMF method:

Syntax	ID	Description
1#1#<phone no.>##	**1**	Program the phone number into entry ID 1, which is also mapped to button 1. The default button operation is to make a call, so this will effectively assign a call function to button 1. Note: Set number to 0 to erase.
1#10#<phone no.>#0#0#1#1##	**10**	This will program the phone number into ID 10. The next two fields after the phone number are set to 0, as no alternate numbers are required. The Button operation field is set to 1, to set the call bit and the CLI feature is enabled. As no start or end time were entered, it is permanently enabled.
1#10#1#<phone no.>##	**10**	This is an example of field programming to achieve the same thing as above. The first entry programs the phone number into ID 10, field 1.
1#10#5#1##	**10**	The second entry enables the CLI feature by programming a 1 into field 5. On an incoming call from this phone number, relay 1 will be activated.

OPTION 2 – Hotline Number

This feature is only used for phones with a handset fitted. The phone will immediately dial the phone number stored in this option as soon as the handset is taken off-hook. To disable this feature, program a value of 0.

OPTIONS 3 & 4 – Global Alternate Numbers

Alternate numbers are called at the expiration of the "No Answer" timer (OPTION 12). If a phonebook entry has alternate numbers, those will be tried first. After those numbers are attempted (if any exist) the global alternate numbers are tried. Thus, there can be up to 5 call attempts, in the following order: <Phone number> <Alternate 1> <Alternate 2>< Global alternate 1> < Global alternate 2>

OPTION 5 – Speed Dial Length

On phones with a keypad fitted, the keypad can be used to enter a speed-dial number. To enable this feature, program the required length into this option.

The phone will wait for either the full length to be entered, or the dial timer to expire (5 seconds). If an entry ID is found in the phonebook that matches the number entered, the phone will begin dialing that number.

OPTION 10 – Auto Answer Time

If required the phone can automatically answer incoming calls. OPTION 10 specifies the length of time to wait before answering the call, in seconds. The default is 2 seconds. To disable this feature program a 0. The range is from 1 to 60 seconds. Also see OPTION 11 for instant auto-answer.

OPTION 11 – Instant Auto Answer

Programming a 1 into this option will enable the instant auto-answer feature. The phone will immediately pick up the call and route audio. This typically happens in around 200 milliseconds.

OPTION 12 – No Answer Timeout

In seconds, how long to wait before moving on to attempt the alternate numbers. Set to 0 to disable this feature. If disabled however, no attempts will be made to dial alternate numbers. The range is from 5 to 99 seconds.

8.10 Audio Parameters

OPTION 100 – Hands-free Microphone Gain

Microphone gain in 1.5dB steps, from 0 to 15 (0 to 22.5dB gain). The default is 2 and provides a 3dB gain.

OPTION 101 – Hands-free Volume

Master volume level of the hands-free speaker, as a percentage of maximum. Default is 55%.

OPTION 102 – Handset Microphone Gain

Microphone gain in 1.5dB steps, from 0 to 15 (0 to 22.5dB gain). The default is 10 and provides a 15dB gain.

OPTION 103 – Handset Volume

Volume level of the handset speaker, as a percentage of maximum. Default is 75%.

OPTION 104 – Hearing Aid Loop Volume

Volume level of the heading aid loop, if fitted, in percentage of maximum. Default is 50%.

OPTION 105 – Ring Volume

Ringer volume, as a percentage of maximum. Default is 60%.

8.11 Codes

OPTION 200 – Keypad & DTMF programming code

This code has two purposes. It can be used for DTMF programming or to allow programming of a phone from the front keypad (if fitted).

Enter this code during a phone call to enter remote programming mode.

OPTION 201 – SMS Unlock Code

The SMS unlock code must precede the option and programming parameters. The default is 1234.

OPTION 202 – SIM PIN Code

If the SIM card requires a PIN code, set it here. The phone will use this code to attempt to unlock a SIM. (Please refer to section 5.1 on page 7)

OPTION 203 – SIM PUK Code

This code can be used to unlock a SIM card if it has been PUK locked.

OPTION 210 to 213 – Relay Activation Codes

Sending these codes via SMS, or entering them in during a call via DTMF will activate a relay. Option 210 is assigned to Relay 1, 211 to Relay 2 and so on.

Note: Must have a minium 3 and maxium of 15 digits in code.

OPTION 220 to 229 – Keyless Entry Codes

Keyless entry codes allows a phone with a front keypad to activate a relay. The phone supports up to 10 entry codes. To use an entry code, press <*> followed by the code.

When programming the entry codes, you can specify a relay to activate. The default is relay 1. If you would like to activate a different relay, simply add the relay number as another field after the code. For example, to set the code in the first entry to '1234' and have it activate relay 2, the syntax would be 220#1234#2.

8.12 Function Options

OPTION 300 – Unit ID Number

The unit ID is a number that can be assigned to a phone for identification purposes. It's range is from 1 to 9999. It can be read out when a call is answered by the phone. See OPTION 301 for more information.

OPTION 301 – Read ID On Answer

Setting this to 1 will cause the phone to read out aloud the Unit ID Number (OPTION 300) when a call is answered.

OPTION 302 – Play Start-up Tune

On by default as an indication that the audio hardware is working correctly. It plays for approximately 30 seconds during system initialization and setup.

OPTION 303 – Button Press Timeout

The length of time a button is required to be held down for it to be detected as valid. The values are multiples of 100ms and the default is 3 (300ms).

OPTION 304 – Handset Connected

Enables handset operation.

OPTION 305 – Handset Hook Polarity

The polarity of the handset hook switch. Active low if 0 or active high if 1.

OPTION 306 – Solar Powered

Set this to enable MPPT (Maximum Power Point Tracking) mode on the battery charger. MTTP is a technique commonly used with solar systems to maximize power extraction under all conditions. Enable this if a solar panel is the main power source.

OPTION 307 – Relay Activation Timer

The default relay time is 4 seconds. Relay time duration can be set in seconds.

OPTION 308 – Mute Initial Audio

This will silence all of the audio prompts during start-up and initialization. This is useful for installations inside or in quiet areas where a reboot of the device and subsequent audio prompts could be a disturbance.

8.13 SMS Reporting Settings

Warning: Dallas Delta advises users to use the DDC Configurator application to program SMS reporting settings.

OPTION 400 – Daily SMS Limit

Maximum number of SMS to send per day

OPTION 401 to 403 – Reporting Phone Numbers

Up to three reporting numbers can be stored in the phone. These numbers are used by the phone to send various status reports and events.

OPTION 404 to 406 – Reporting Events

Per each reporting phone number, enable the events that are to be reported on by setting this bit field value. Each bit in the field has a different value from 1 to 32. The value entered to the option is the sum of the values of all the bits selected.

Bit 0 (Value = 1) – System Start-up
Bit 1 (Value = 2) – System Report
Bit 2 (Value = 4) – Outgoing Call
Bit 3 (Value = 8) – Call Statistics
Bit 4 (Value = 16) – Battery Charge Complete
Bit 5 (Value = 32) – Battery Low

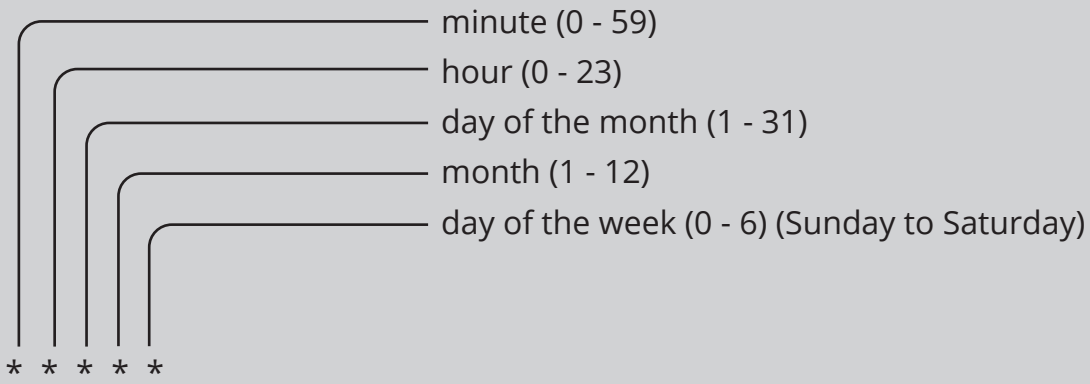
Examples

- To enable only System Start-up notifications to reporting number 1 the sequence entered would be 404#1##.
- To enable only System Startup and Battery Low notifications on reporting number 2 the value to be entered would be (1 + 32) = 33. The sequence entered would be 405#33##.
- To enable all notifications except for Outgoing Calls to reporing number 3 the value to be entered would be (1 + 2 + 8 + 16 + 32) = 59. The sequence entered would be 406#59##.

OPTION 407 – System Report Interval

Note: DTMF programming is not available for this option!

The system report interval allows you to define when you would like to receive the System Report. Its format is specified using the **Unix CRON format**, which has 5 time and date fields, as shown below:



This allows for a highly configurable interval to be set. When programming via USB (with the DDC Configurator program) or SMS you can use the three characters { **/ - ,** } to specify intervals, ranges or list. However, when using keypad programming you will need to substitute { **A** for **/** } , { **B** for **-** } and { **C** for **,** }.

Here are some examples:

Description	USB or SMS	Keypad
At the 15th minute of every hour	15 * * * *	15#*#*#*#*##
At 15 minute intervals	*/15 * * * *	*A15#*#*#*#*##
At the 20th and 40 minute of every hour	20,40 * * * *	20C40#*#*#*#*##
Hourly	0 */1 * * *	0#A1#*#*#*##
Every 2 hours	0 */2 * * *	0#*A2#*#*#*##
At 9am every day	0 9 * * *	0#9#*#*#*##
At 9am, 1pm, and 5pm on weekdays	0 9,13,17 * * 1-5	0#9C13C17C#*#*#1B5##
At 8am on the weekdays	0 8 * * 1-5	0#8#*#*#1B5##
Every 2 hours (8am-10pm Mon-Fri)	0 8-22/2 * * 1-5	0#8B22A2#*#*#1B5##
On the first day of the month at 10am	0 10 1 * *	0#10#1#*#*##
On the first Mon, once per month at 10am	0 10 1-7 * 1	0#10#1B7#*#1##
At 10am and again at 4pm, Mon, Wed & Fri	0 10,16 * * 1,3,5	0#10C16#*#*#1C3C5##

OPTION 408 – System Report Flags

A bit field value to select what gets sent in a System Report. Each bit in the field has a different value from 1 to 32. The value entered to the option is the sum of the values of all the bits selected.

Bit 0 (Value = 1) – Basic Battery Information

Bit 1 (Value = 2) – Extended battery & power information

Bit 2 (Value = 4) – Hardware information and system temperatures

Bit 3 (Value = 8) – Call information

Examples

- To enable only Basic Battery Information the sequence entered would be 408#1##.
- To enable all notifications except for Call Information the value to be entered would be (1 + 2 + 4) = 7. The sequence entered would be 408#7##.

8.14 Functions

OPTION 500 – Factory Default

- 500#0 loads factory default configuration data.
- 500#1 clears all saved telephone numbers.
- 500#2 performs a software reset.

OPTION 501 – Read RSSI

OPTION 502 – Read Battery Data

OPTION 503 – Read Firmware Version

OPTION 504 – Read System Uptime

OPTION 505 – Activate Relay

Activate a specified relay for the preprogrammed period. You can specify a second parameter to activate a relay for a specific amount of time.

Examples:

2#20 - Activate relay 2 for 20 seconds

1 – Activate relay 1 for its preprogrammed period.

OPTION 510 – System Reboot

9.0 PROGRAMMING SUMMARY / QUICK REFERENCE GUIDE

9.1 PHONE

Option	Sample Syntax	Value / Range	Default Value	Description
1	1#<Loc>#<Field># <Phone no.>	See section on phonebook programming	-	Phonebook Entry
2	2#< Phone Number >	0 to clear, 3 - 16 digits	-	Hotline Number
3 - 4	3#< Phone Number >	0 to clear, 3 - 16 digits	-	Global Alternate Numbers
5	5#2	0 to disable, 1 - 6	0	Speed dial enable and length
10	10#2	0 to disable timer, 1 - 60	2	Auto Answer Time (Seconds)
11	11#0	0 / 1	Off	Instant Auto Answer
12	12#15	0 - 99	0	No Answer Timeout (Seconds)

9.2 AUDIO

Option	Sample Syntax	Value / Range	Default Value	Description
100	100#2	0 - 15	2	Hands-free microphone gain
101	101#55	40 - 100	55	Hands-free volume
102	102#2	0 - 15	8	Handset microphone gain
103	103#75	10 - 100	75	Handset volume
104	104#50	10 - 100	50	Hearing aid loop volume
105	105#60	10 - 100	60	Ring volume
106	106#75	20 - 200	75	Speech volume
107	107#25	20 - 200	25	Tones volume
108	108#25	20 - 200	25	Tunes volume
109	109#160	10 - 300	160	AGC multiplier (/10)
110	110#100	0 - 100	100	TX ducking (percent)
111	111#100	0 - 1000	100	RX detect debounce (ms)

9.3 CODES

Option	Sample Syntax	Value / Range	Default Value	Description
200	200#< Code >	A numerical code up to 15 digits	1234	Front Keypad & DTMF programming code (via keypad only)
201	201#< Code >	A numerical code up to 8 digits	1234	SMS unlock code (via keypad only)
202	202# (SIM PIN code)	The SIM Access code must be 4 digits		SIM PIN code
203	203#12345678	The SIM PUK must be 8 digits		SIM PUK code
210 - 213	210#< Code >	A numerical minimum 3 max 15 digits		Relay 1 & 2 activation codes
220 - 229	220#< Code >#[Relay]	A numerical code up to 15 digits		Keyless entry codes

9.4 OPTIONS

Option	Sample Syntax	Value / Range	Default Value	Description
300	300#0	0 to clear, 1 - 9999		Unit ID number
301	301#0	0 / 1	Off	Read ID on answer
302	302#1	0 / 1	On	Play startup tune
303	303#3	1 - 30	3	Button press timeout (x100ms)
304	304#0	0 / 1	No	Handset connected (0 = yes , 1 = no)
305	305#0	0 / 1	Low	Handset hook polarity
306	306#1	0 / 1	Yes	Powered by solar panel. Option enables MPPT (via keypad only)
307	307#4	1 - 86400 (24 Hr)	4	Relay activation timer (seconds)
308	308#1	0 / 1	Off	Mute initial audio
309	309#1	0 / 4	Off	Relay On Call (Specify relay number to activate)
310	310#5	1 - 99	3	Maximum call length in minutes

9.5 SMS Reporting settings

Option	Sample Syntax	Value / Range	Default Value	Description
400	400#100	> 0	100	Daily SMS Limit
401 - 403	401#< Phone Number>	0 to clear, 3 - 16 digits		Reporting Phone Numbers
404 - 406	404#3	1 - 63	3	Reporting Events
407	407#0#14#*#*#1B5		0 14 * * 1-5	System Report Cron
408	408#9	1 - 15	9	System Report Flags

9.6 FUNCTIONS

Option	Sample Syntax	Value / Range	Default Value	Description
501	501	* = dBm , ** = %	dBm	Read RSSI
502	502	-	-	Read Battery Data
503	503	-	-	Read Firmware Version
504	504	-	-	Read System Uptime (via SMS only)
505	505#1[#4]	Relay & optionally on time in seconds	-	Activate Relay
506	506	-	-	Get status (via SMS only)
510	510	-	-	System Reboot

10. TECHNICAL SPECIFICATIONS

OPERATIONAL REQUIREMENTS

GSM SYSTEM	4G LTE, Cat 1, 4
	VoLTE with digital audio
	3G Bands:
	• 850MHz (B5)
	• 900MHz (B8)
	• 2100MHz (B1)
	4G Bands:
	• 700MHz (B28)
	• 850MHz (B5)
	• 900MHz (B8)
	• 1800MHz (B3)
	• 2100MHz (B1)
POWER SUPPLY	• 11 – 28V DC
	• Suitable for supply directly from a 12V solar panel. 2 – 15W (5W recommended).

PRODUCT FEATURES

CURRENT CONSUMPTION @ 12V SUPPLY	• Idle with battery fully charged – 35mA
	• Idle, charging battery at maximum charge current – 1.25A
	• In call, max transmit power, battery fully charged – 90mA
	• Recommend >=500mA 12V power supply
BATTERIES	Dallas Delta LiFePO4 3.2V 1.8Ah (Standard) or
	Dallas Delta LiFePO4 3.2V 3.8Ah (Optional upon request)
	Talk time and standby time, if power supply is disconnected:
	• 12 hours talk time, 100 hours standby (3.8Ah battery)
	• 6 hours talk time, 50 hours standby (1.8Ah battery)
SPEAKER LOUDNESS	**>78dBa @ 1 metre**
MONITORED FAULTS / SENSORS	• Audio self-test
	• Stuck buttons
	• Battery state of charge and health
	• Supply voltage
	• PCB temperature
MONITORING METHOD	• Remote interrogation by SMS
	• Automated interval reporting

CUSTOM

We have forty years experience in development of innovative custom communications equipment.

We meet the customers requirements and custom build the units to any size, material & button configuration.

COMMUNICATION

Our communications products cover a broad range of applications from entry control to emergency communication networks.

Using technologies that include: VoIP, GSM, Fibre and Analogue.

SOLUTIONS

If there is a product you require and it does not exist, we will design and manufacture it for you.

We will work with our clients to ensure that the correct product is made to the requirements & standard.

MANUFACTURING COMMUNICATIONS PRODUCTS

Remote Gate Access
Apartment Intercom
Rugged environments
Roadside Emergency
Emergency Services
Industrial
Clean Room
Police Stations
High Voltage Line Isolators
Prisons
High Security
Control Centres

CERTIFICATIONS AND COMPLIANCE

AS/NZS 60950.1:2011
AS/CA S042.1:2011
AS/ACIF S042.3:2005
AS/CA S042.4:2011
RSS-132 Issue 2, RSS-133 Issue 5

GCF-CC (v3.40.2), NAPRD03 (v5.6)
FCC OET 65
FCC CFR Title 47 Part 2, TIA/EIA 603-C
FCC Part 22 Subpart H,
FCC Part 24 Subpart E

FCC Part 22.917(b),
FCC Part 24.238(b)
FCC Part 15 Subpart B: 2008 Class B
ANSI C63.4:2009
SGS Report No: EG/2013/80025

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