Raising gas analysis to new levels

SERIES 4

WIRELESS

TABLET

GRAPHICAL USER INTERFACE (GUI)

OPERATING MANUAL

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DOCUMENT HISTORY

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1.01	First issue	29 June 2020
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Table 1 : Document history table

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⚠ Read This First ⚠

Signal Group Ltd designs, manufactures and tests its products to meet many national and international standards. Because these instruments are sophisticated technical products, you MUST properly install, use, and maintain them to ensure they continue to operate within their normal specifications. The following instructions MUST be adhered to and integrated into your safety program when installing, using and maintaining Signal Group Ltd products. Failure to follow the proper instructions may cause any one of the following situations to occur: Loss of life; personal injury; property damage; damage to this instrument; and warranty invalidation.

– Read all instructions prior to installing, operating, and servicing the product.

– If you do not understand any of the instructions, contact your Signal Group Ltd representative for clarification.

– Follow all warnings, cautions, and instructions marked on and supplied with the product.

– Inform and educate your personnel in the proper installation, operation, and maintenance of the product.

– Install your equipment as specified in the Installation Instructions of the appropriate Instruction Manual and per applicable local and national codes. Connect all products to the proper electrical and pressure sources.

– To ensure proper performance, use qualified personnel to install, operate, update, program, and maintain the product.

– When replacement parts are required, ensure that qualified people use replacement parts specified by Signal Group Ltd. Unauthorised parts and procedures can affect the product's performance, place the safe operation of your process at risk, and **VOID YOUR WARRANTY**. Substitutions may result in fire, electrical hazards, or improper operation.

– Ensure that all equipment doors are closed, and protective covers are in place, except when maintenance is being performed by qualified persons, to prevent electrical shock and personal injury.

1 Introduction

The S4 Wireless tablet with Graphical User interface (GUI) provides the perfect tool to operate our S4 range of gas analysers. This rugged tablet connects wirelessly to the gas analyser via an in-built 802.11 Wi-Fi. This provides the ability to view data, manage configurations, data log, view alarms and calibration of the analyser remotely from different locations.

2 What's in the box

– Series 4 Wireless Tablet

– Micro USB Lead

  - Software upgrade
  - Data files export

– Power adaptor – AC 100V~240V, 50Hz/60Hz output DC 5V/2.5A

– USB to micro USB lead for charger.

– Holding strap

Figure 1 : S4 Wireless tablet with accessories

3 Specifications

3.1 Product Features

- Type: Rugged tablet, IP 65 rated
- Dimension: 185mm x 93mm x 20.7mm
- Display: 5.9” (149mm) anti-scratch touch capacitive

Figure 2: S4 Wireless tablet - Front view

3.2 System hardware

- CPU: Intel cherry-trail Z8350
- CPU speed:1.44GHz-1.92GHz
- GPU: intel HD Graphics
- RAM capacity: 2GB
- ROM capacity: 326GB

Figure 3: S4 Wireless tablet - Top view

3.3 Network connections

- Wi-Fi: Wi-Fi 802.11 frequency 2.4G+5.9G dual band
- Bluetooth: BT 4.0

4 Switching on the device

After pressing and holding the ON/OFF button, located on top of the tablet (See Figure 3), the initialisation will start. When the login page appears, press the LOGIN button.

Figure 4 : Wireless tablet - Switching on the device

5 Connecting to the analyser

If the tablet does not connect automatically with the analyser, you will see this screen. Select your analyser from the list shown and the tablet will connect to it through the chosen connection method.

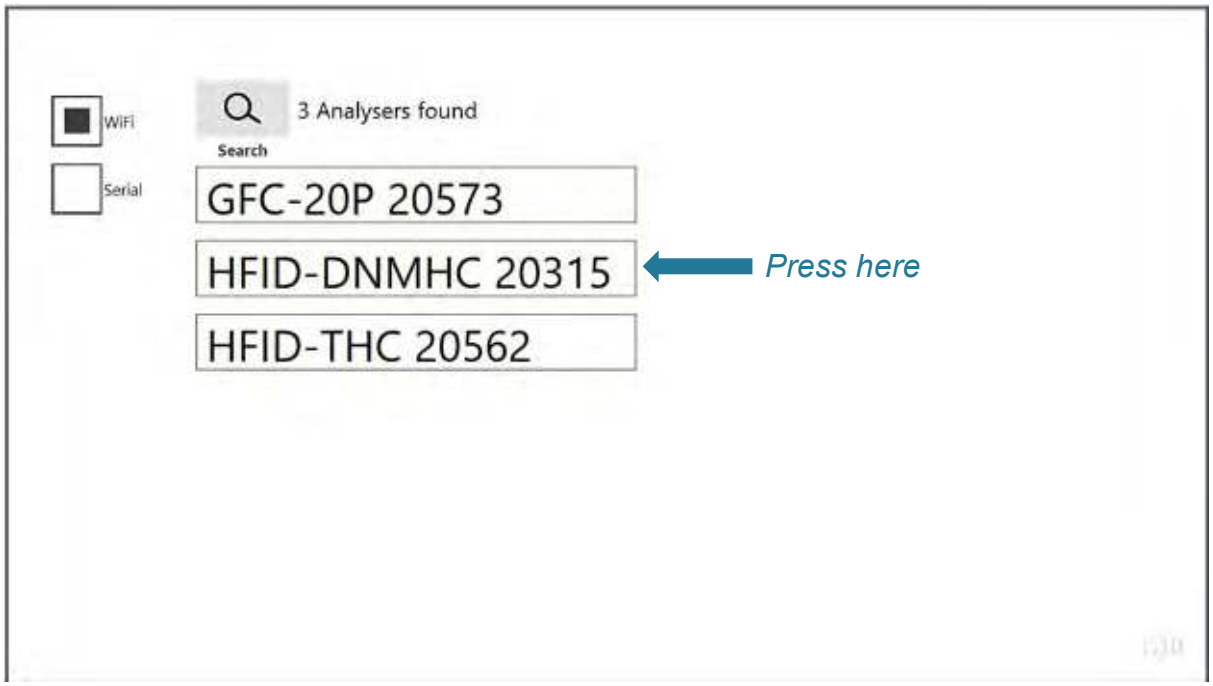

Figure 5 : Tablet GUI - Home screen

6 Home page

Once the tablet is connected to the analyser, you will see the Home page, which shows the main functions of the analyser:

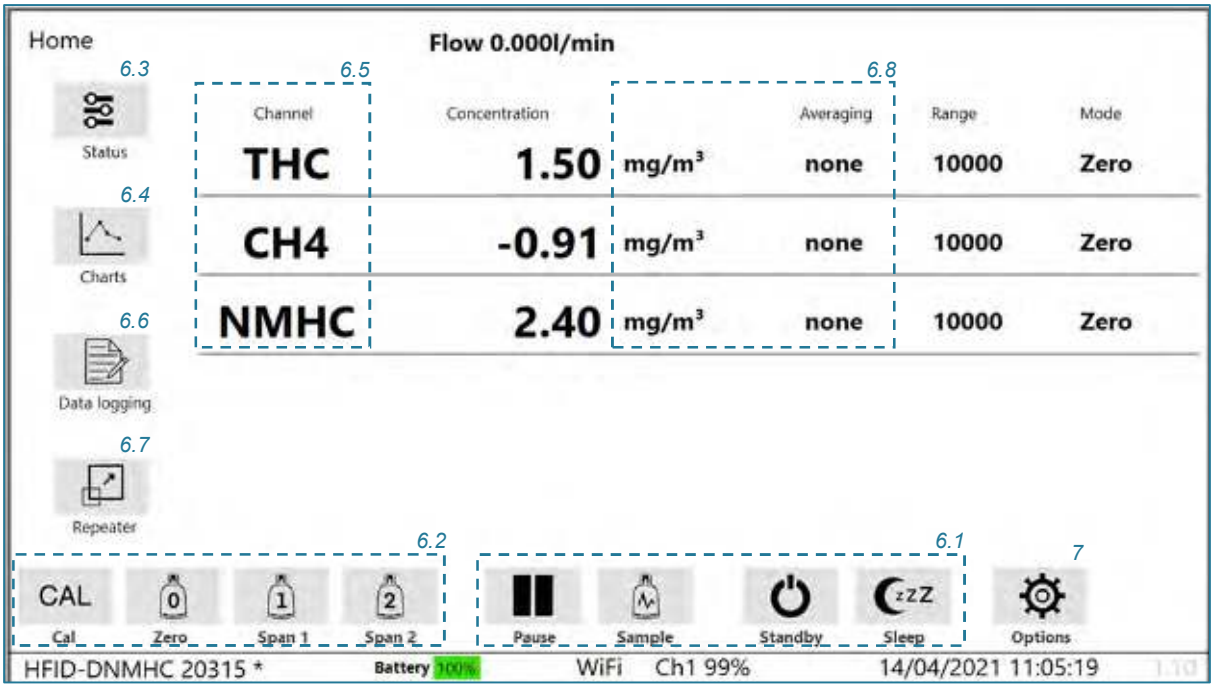

Figure 6 : Tablet GUI - Home screen

6.1 Modes of operation

The following options will initiate warm-up on the S4 SOLAR analysers. Modes may vary depending on your type of instrument. Use the analyser operation manual for more details.

– **Sleep:** the unit is powered but not heated. No gas valves will be open.

– **Standby:** the unit will be heated and ready for measurement. No gas valves will be open.

– **Sample:** the unit will automatically initiate ignition, and once the flame is lit, open the Sample valve to begin measuring Sample gas.

– **Pause:** Allows isolation from any measurement gas path by closing all valves whilst the unit remains lit.

6.2 Calibration

For optimal performance you need to calibrate your analyser. (It is recommended to do this daily) You can calibrate from the following modes by pressing the **CAL** button:

– **Zero:** calibration in this mode will adjust the zero offset only.

– **Span:** calibration in this mode will adjust the span coefficient only.

– **Sample:** calibration in this mode will adjust the zero offset, followed by the span coefficient.

NOTE – it is advisable to leave your instrument lit for at least an hour before first calibration.

6.3 Status

This page shows all the main parameters of the gas analyser. Different S4 analysers will display different information.

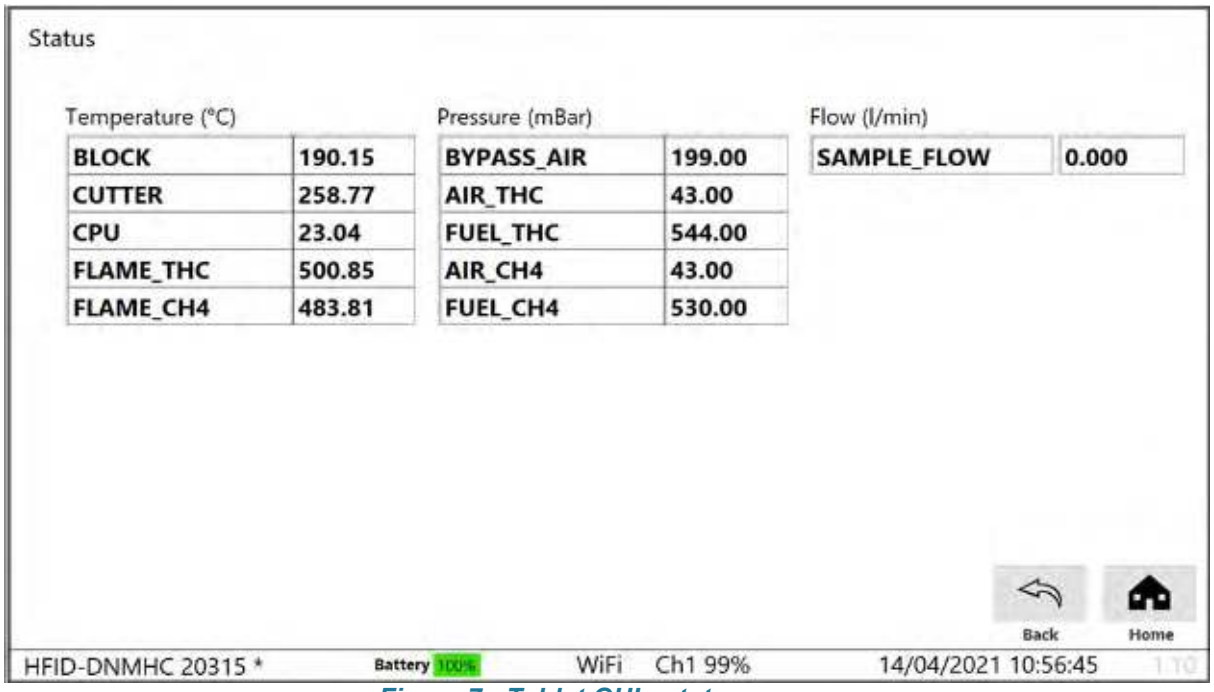

Figure 7 : Tablet GUI - status screen

6.4 Charts

In this page, the trends of the different channels are displayed graphically.

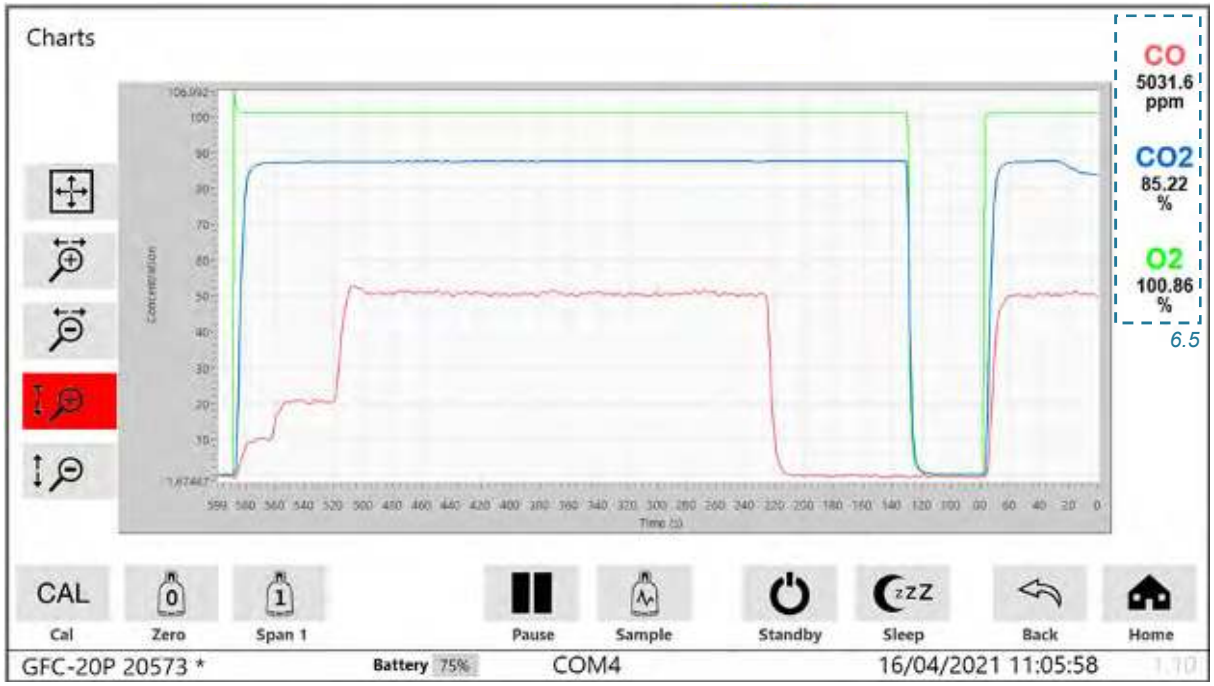

Figure 8 : Tablet GUI - Charts screen

6.5 Channels

By selecting each channel's name from either the Home or Charts screen, more information is available in the Channel page. From this page the operating range can be changed by selecting the appropriate Scale button.

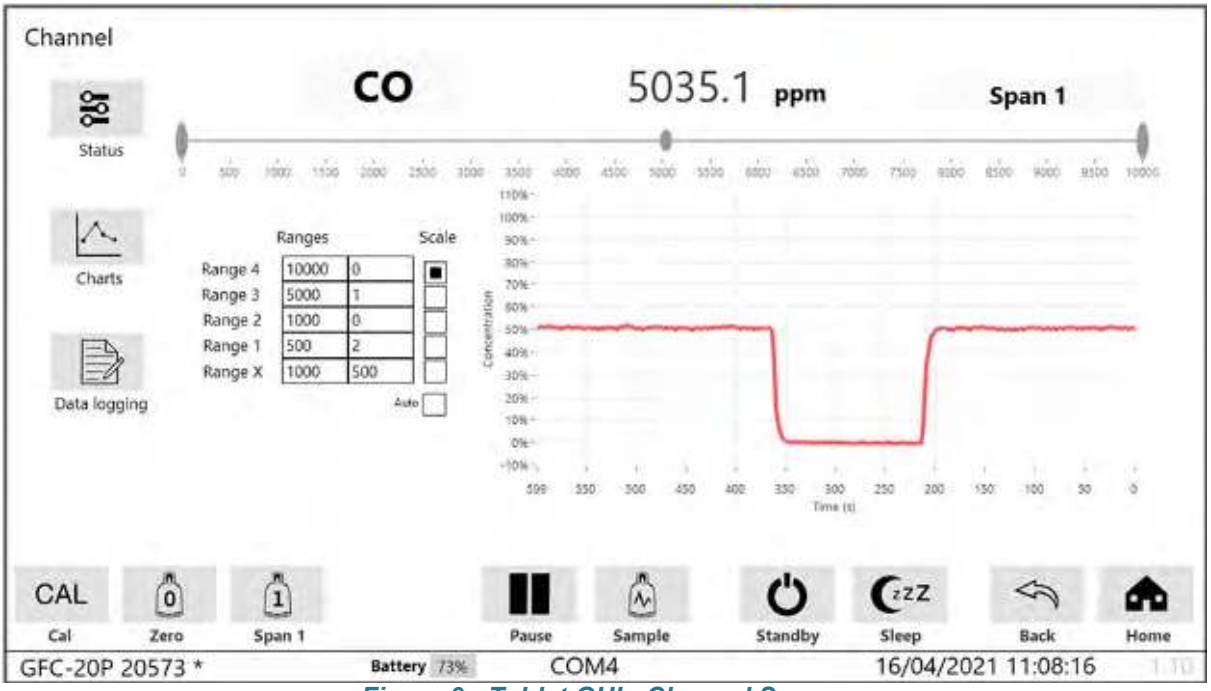

Figure 9 : Tablet GUI - Channel Screen

6.6 Data Logging

In this section, you can configure the logging rate and setup your file before starting your data logging. The Base file name is the name of the file when it's created and the description is the title on the page when the log is opened. When finished, you can export your data via the micro USB port.

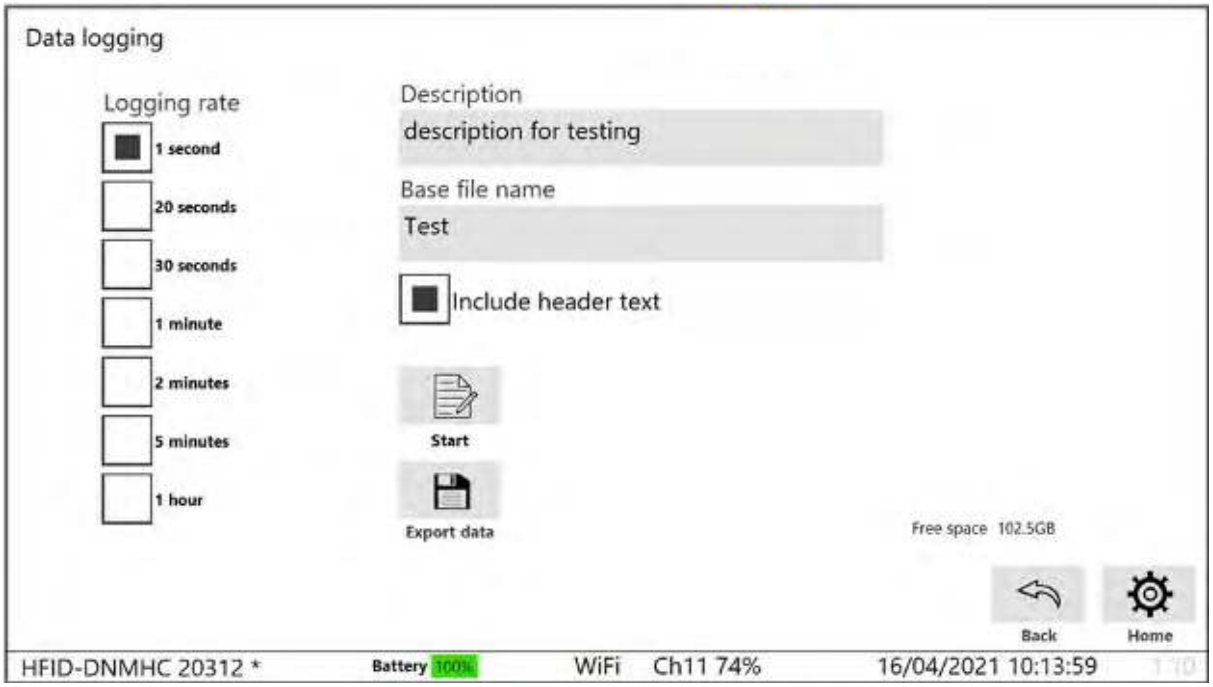

Figure 10 : Tablet GUI - Data logging screen

6.7 Repeater

The Repeater function allows you to magnify the display of the concentration readings.

Figure 11 : Tablet GUI - Repeater screen

6.8 Units and Averaging

The displayed units as well as the averaging applied to the concentration value can be changed by selecting them, this will cause a drop down menu to appear.

– Units available : mg/m^3, %, PPM, PPb, µmol/mol, µg/m^3

– Averaging available : None, 30 seconds, 1 minute, 5 minutes, 10 minutes

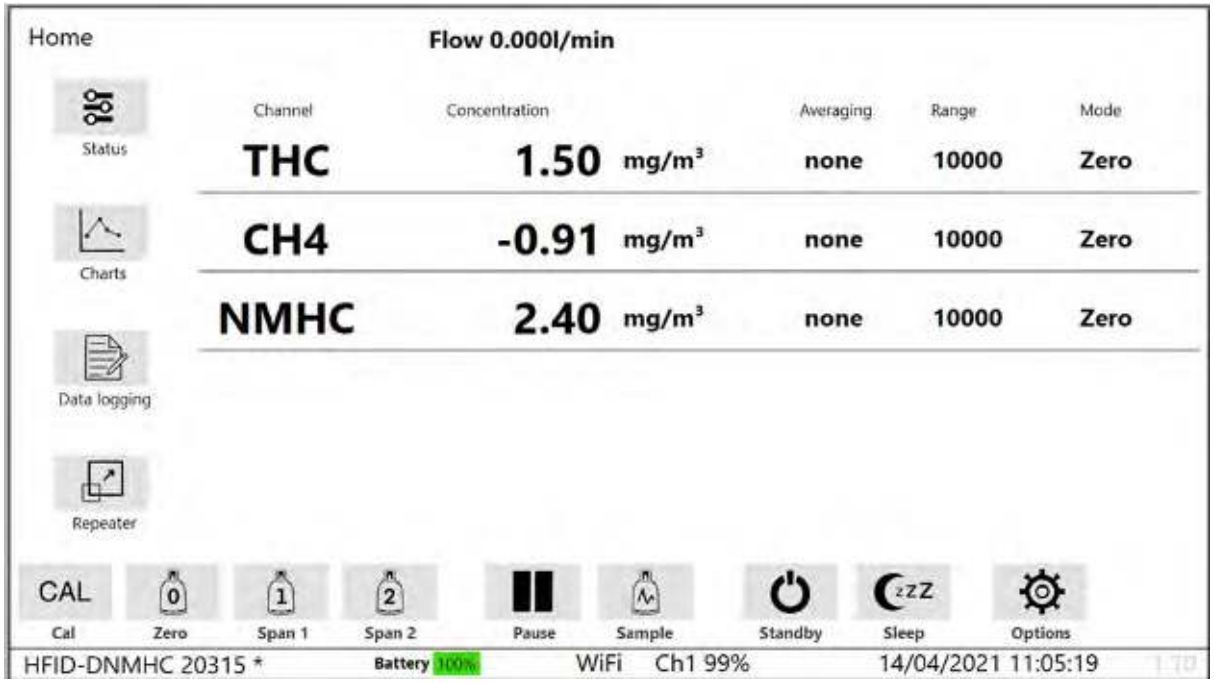

Figure 12 : Tablet GUI - Units and averaging

7 Options

7.1 Analyser configuration

Press the Options Icon to have access to main settings of the gas analyser.

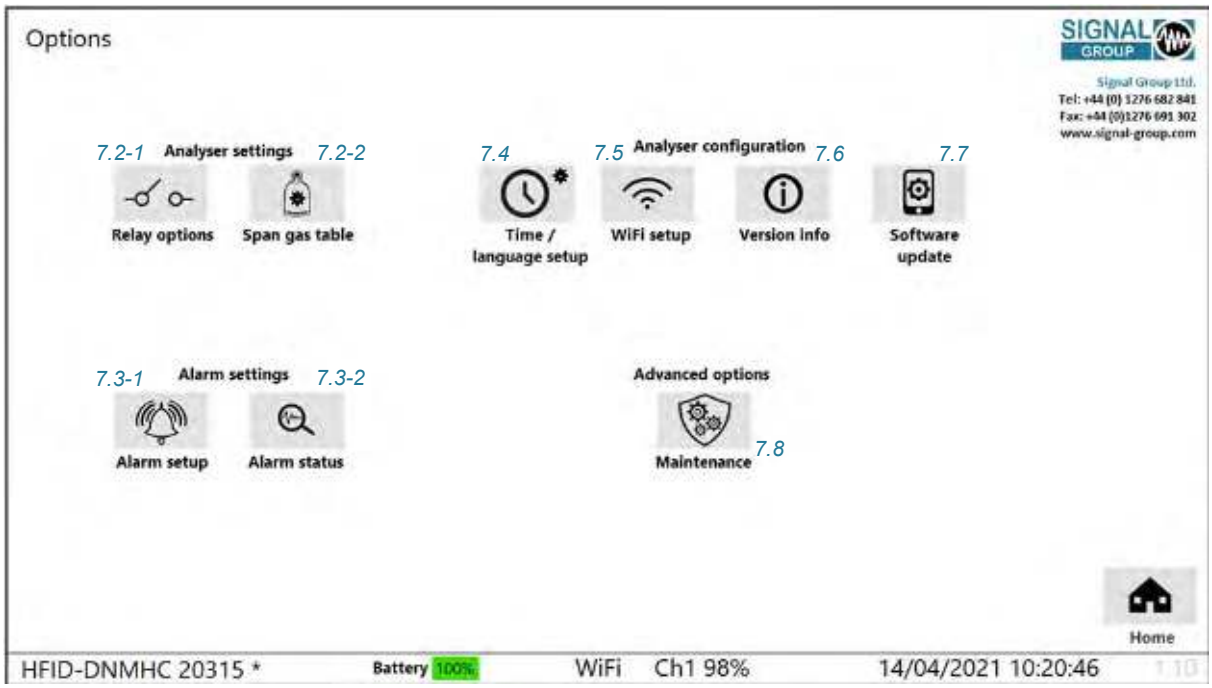

Figure 13 : Tablet GUI - Options screen

7.2 Analyser settings

7.2-1 Relay options

The active relays and solenoid valves are highlighted.

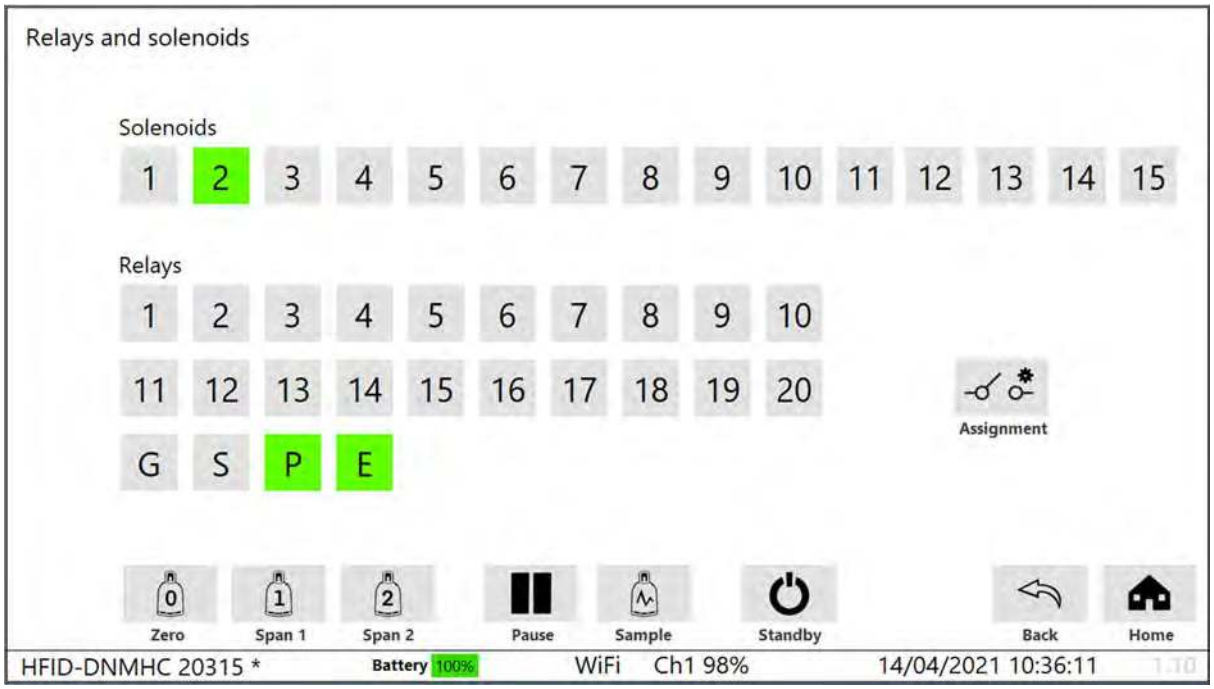

Figure 14 : Tablet GUI - Relay options screen

7.2-2 Span gas table

All span gases can be set using this table. If required, you can apply Calibration to all the ranges. The Refresh button gets the information from the analyser.

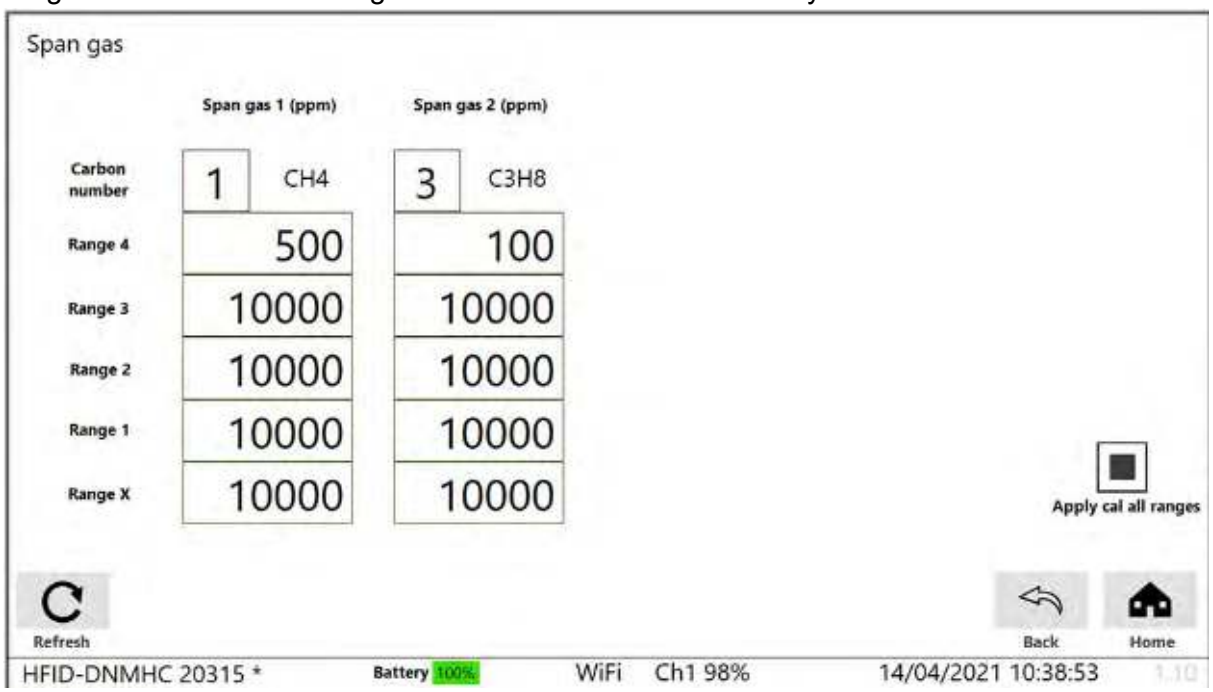

Figure 15 : Tablet GUI - Span Gas table screen

7.3 Alarm settings

In this section, the setup of the alarms can be carried out and access to the alarms/warnings.

7.3-1 Alarm setup

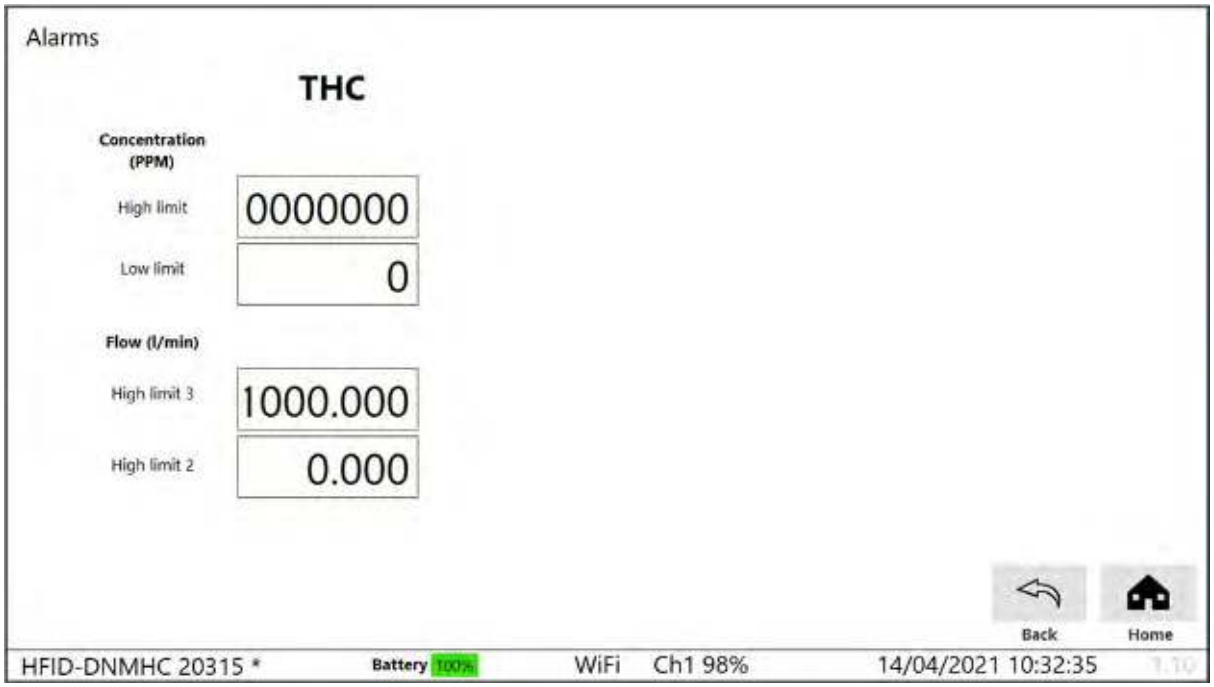

Figure 16 : Tablet GUI - Alarm setup screen

7.3-2 Alarm status

This section shows any alarms or warnings and will allow you to acknowledge (Ack) them. You can also clear the list when the information is no longer required.

Figure 17 : Tablet GUI - Alarm status screen

Any Alarms that occur on the analyser will be displayed on the home screen, highlighted by the blue box shown below. There are two types of alarms, indicated by their colours; yellow ‘warnings’ and red ‘alarms’ which are more serious.

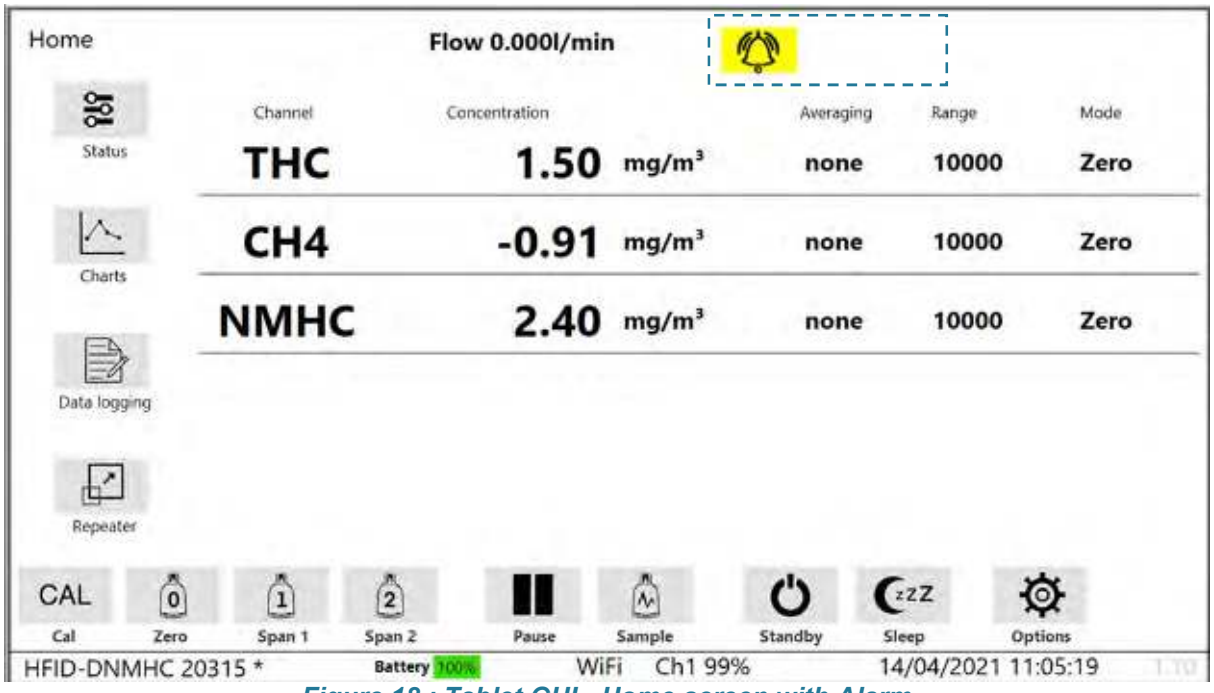

Figure 18 : Tablet GUI - Home screen with Alarm

The flashing alarm icon can be selected in order to navigate directly to the alarms page, If a Calibration fail alarm occurs, this will remain until a successful calibration is completed, it is not dismissible .

7.4 Setting-up time and language

Select the Time / language setup icon. You can setup the date and time of the analyser and the tablet by selecting the 'Tablet time' box, adjusting it to suit then pressing the 'set time' button. Once the tablet time is adjusted, press the 'Synchronise time' button in order to synchronise the analyser with the tablet's time, this is important to do to ensure that any data logging files will output the correct date and time.

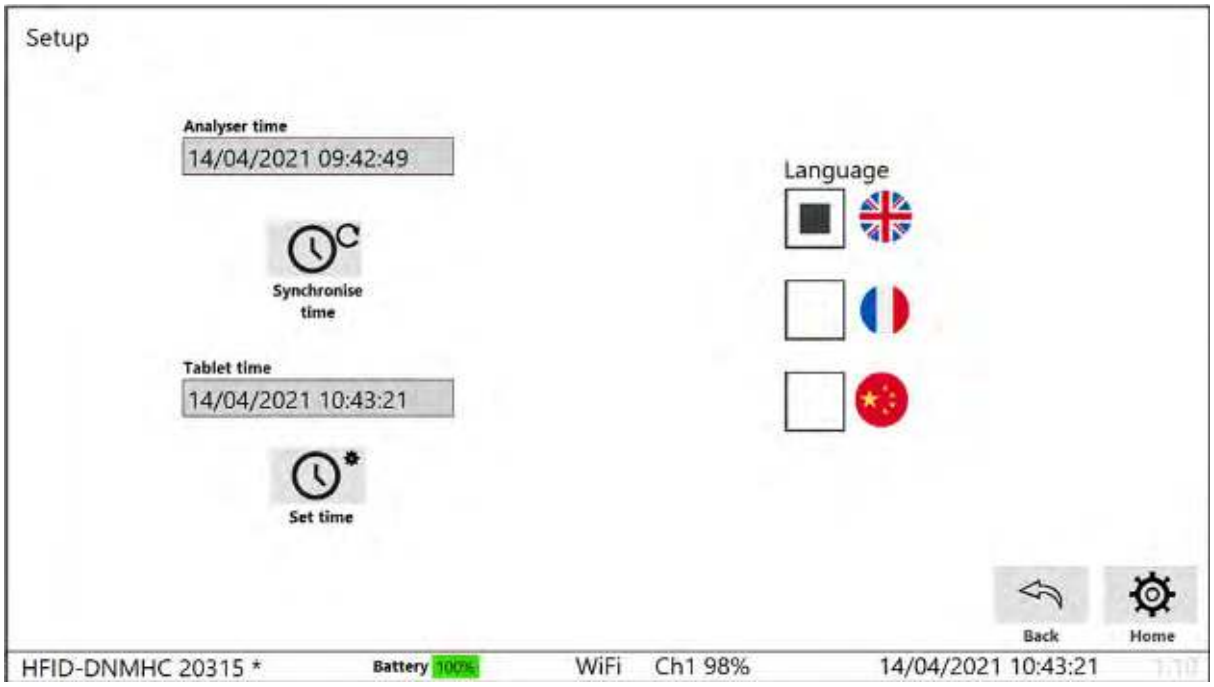

Figure 19 : Tablet GUI - Time/language setup screen

You can also change the language of the tablet, if your desired language is not available, please contact Signal.

7.5 WIFI setup

Select the WIFI setup Icon, choose the WIFI option, the tablet will look for available analysers to connect to. Select your analyser of choice and the tablet will begin connecting to it.

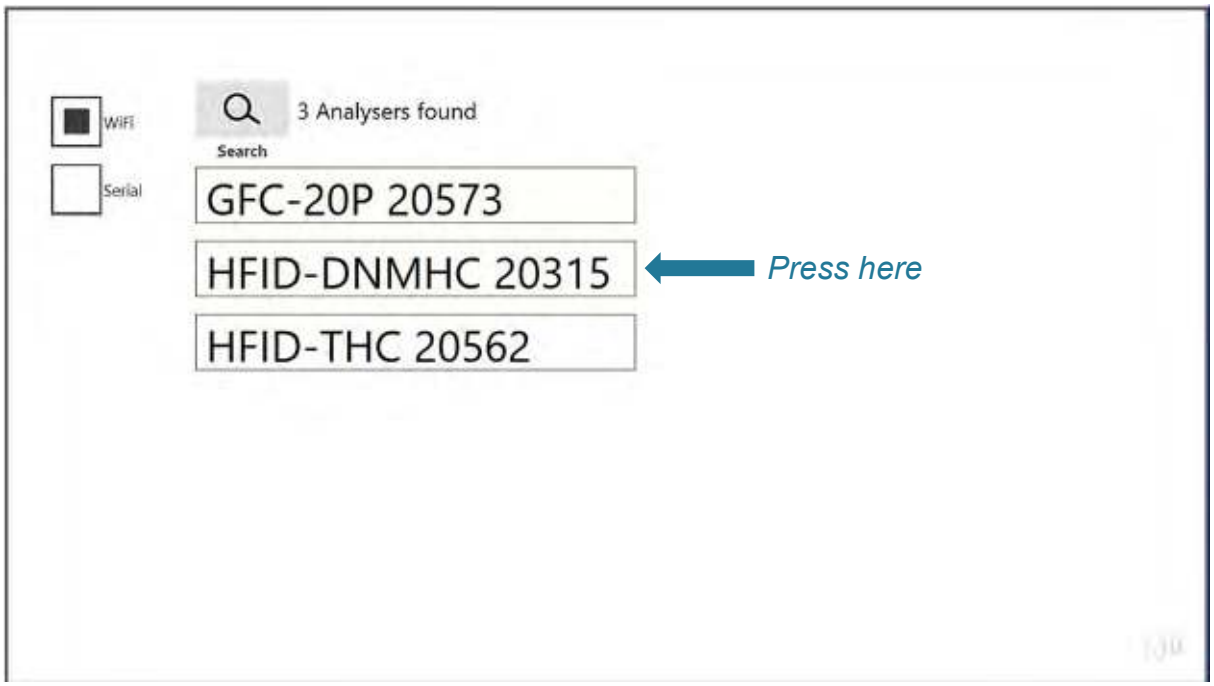

Figure 20 : Tablet GUI - WIFI setup screen

This page below confirms that the connection to the analyser was successful.

Figure 21 : Tablet GUI - WIFI confirmation screen

By selecting the Serial mode, you can connect the tablet or computer to the analyser by using the RS232 port located on the back of the analyser.

If you cannot connect via WIFI, contact Signal Group for help selecting an alternative WIFI channel.

7.6 Version information

This page allows you to view current Firmware details and the analyser serial number. The customer Identification field (Customer ident) can be used to rename the analyser if desired.

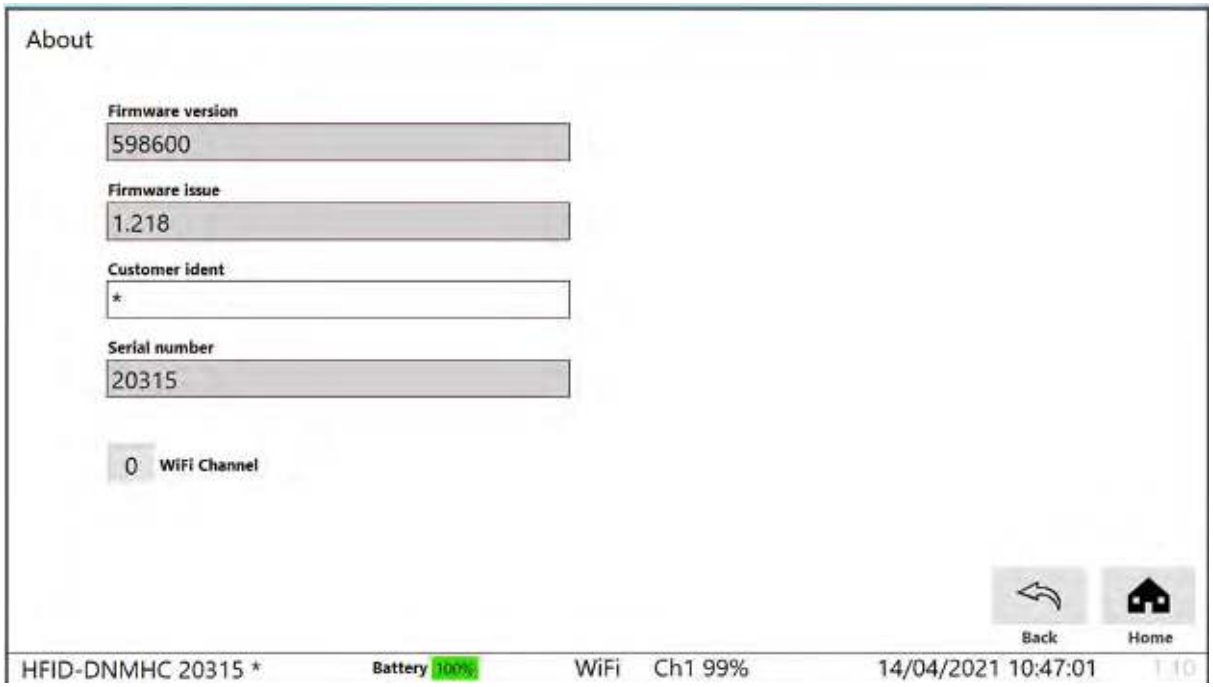

Figure 22 : Tablet GUI - Version information screen

7.7 Software upgrade

This function allows to upgrade the Graphical User Interface (GUI) and will be covered in the Upgrade section of this manual (see section 8).

7.8 Advanced Options

This is reserved for maintenance, contact Signal Group for more information.

8 Upgrading the software

The software of the tablet can easily be upgraded using the micro USB port. In the option page, select the Software upgrade icon and accept the request to update.

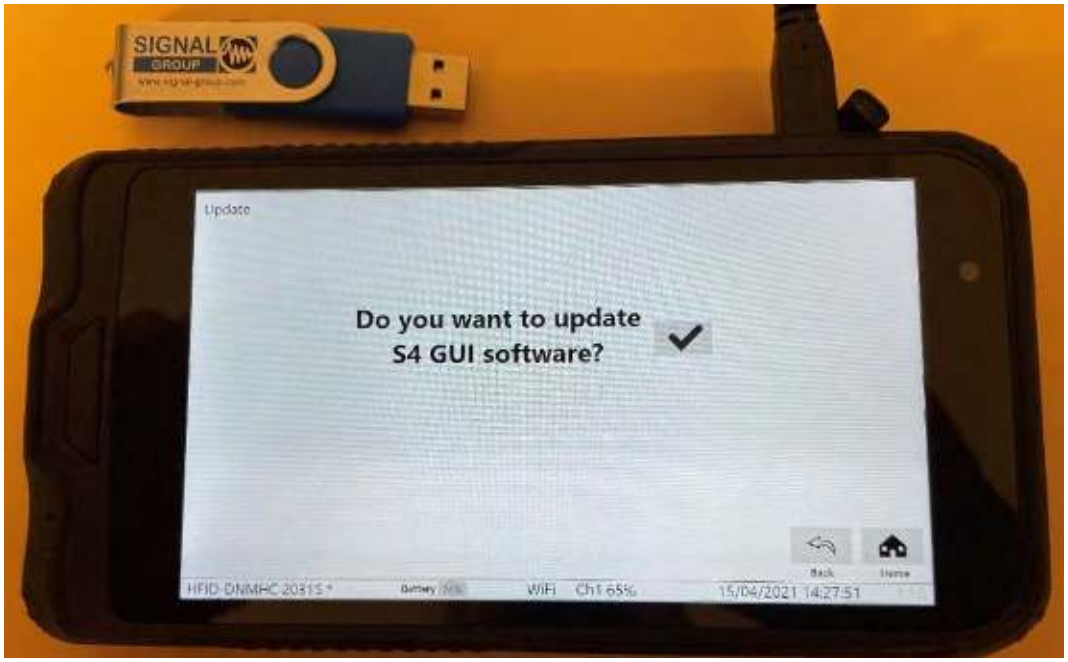

Figure 23: S4 GUI software updater – Update request

Then, when prompted on the following page, insert the USB flash drive, and select the latest version available.

Figure 24: S4 software updater – Software version selection

When prompted for a confirmation of the Update software request, accept.

Figure 25: S4 GUI software updater - Update confirmation

This page shows that the current version (indicated in the blue box) of the tablet has been updated.

Figure 26: S4 GUI software updater - update completed.

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