

# CAM-GX5

## Cellular Activity Monitor

2G/3G/4G/5G Cellular & 2.4GHz/5GHz Bluetooth/WiFi

### Instruction Manual



## INTRODUCTION

The CAM-GX5 Cellular Activity Monitor is a handheld multi-band cellular signal detector ready for the latest generation of 5G devices (as well as existing 2G, 3G & 4G), plus the latest WiFi/Bluetooth devices.

The CAM-GX5 is designed to detect and locate transmissions from cellular mobile phone-based devices including mobile phones, smartphones, vehicle trackers, Wi-Fi Hotspots, GSM listening devices (bugs) and covert wireless 3G/4G/5G cameras.



## CHARGING THE BATTERY

The CAM-GX5 has an internal Lithium Polymer battery pack. Before use connect the supplied 5V (Micro USB) charger to the socket marked 'CHARGE 5V' on the side of the unit.

Only charge whilst the power is switched off and not in use. When charging the red charge LED will illuminate. When the charge is complete the green LED will illuminate. Depending on the condition of the battery the charge will take up to 4 hours. Use only the specified charger and cable provided with the unit.



## OPERATING THE CAM-GX5

### POWER ON/OFF

To switch on the CAM-GX5 press and hold the Power Symbol button for 1 second. The display will momentarily show the start-up screen and then the main live monitoring screen. To switch off the unit press the Power Symbol button for more than 2 seconds.

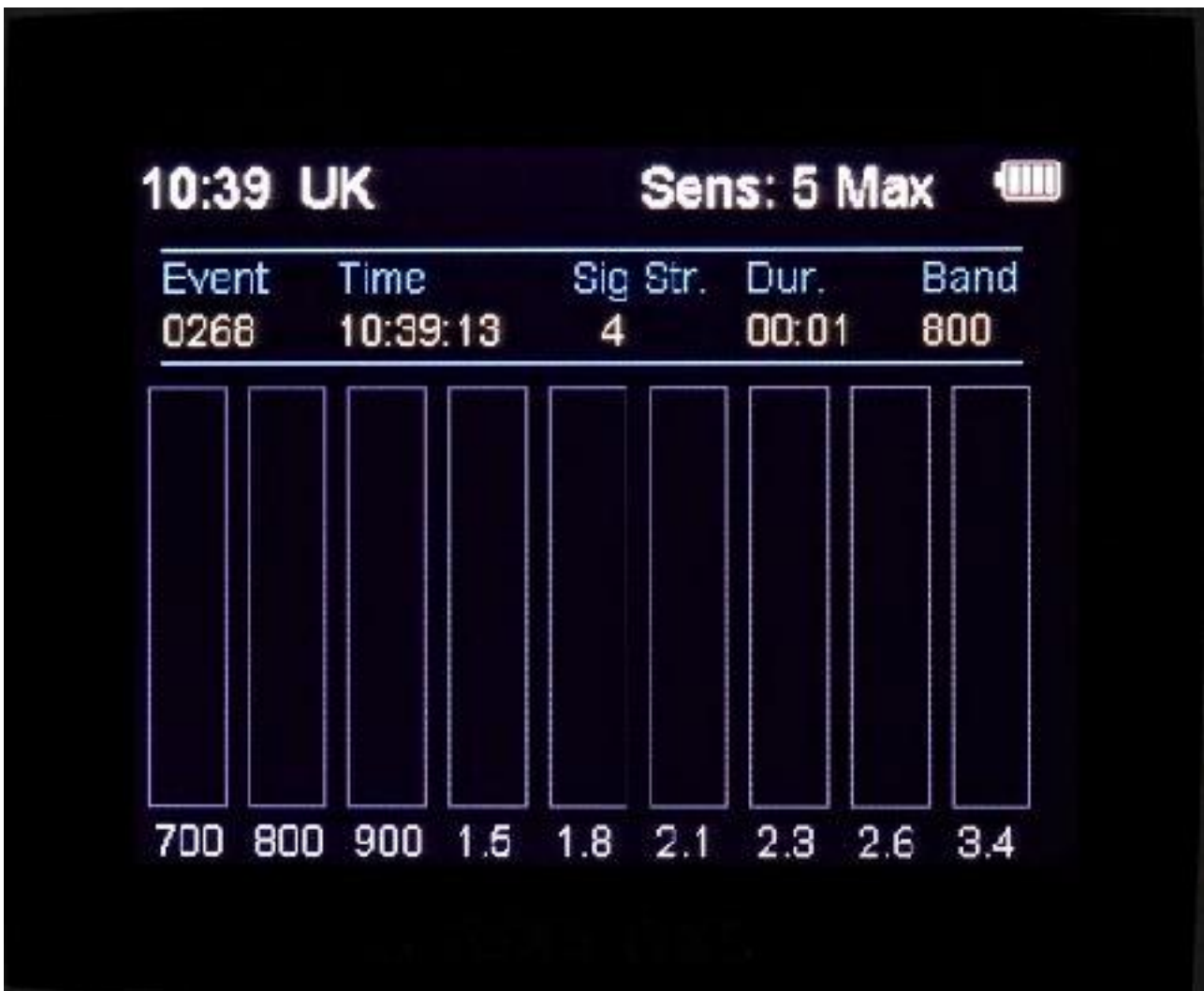
### SETTING TIME & DATE

Before use set the Time & Date by pressing the SETTINGS button. Then scroll DOWN to the Time & Date option and press OK. Use the UP/DOWN buttons to select the correct date and time values pressing OK after each parameter is set. Use the date format DD / MM / YY and time in 24 Hour format HH / MM. When complete confirm by pressing the SETTINGS button.

## REGION SELECTION

The CAM-GX5 can be used worldwide. Before use select the region of use. Press SETTINGS and scroll down to Location. Then keep pressing OK until the required Location region is selected. Once selected press SETTINGS to confirm and return to the main screen.

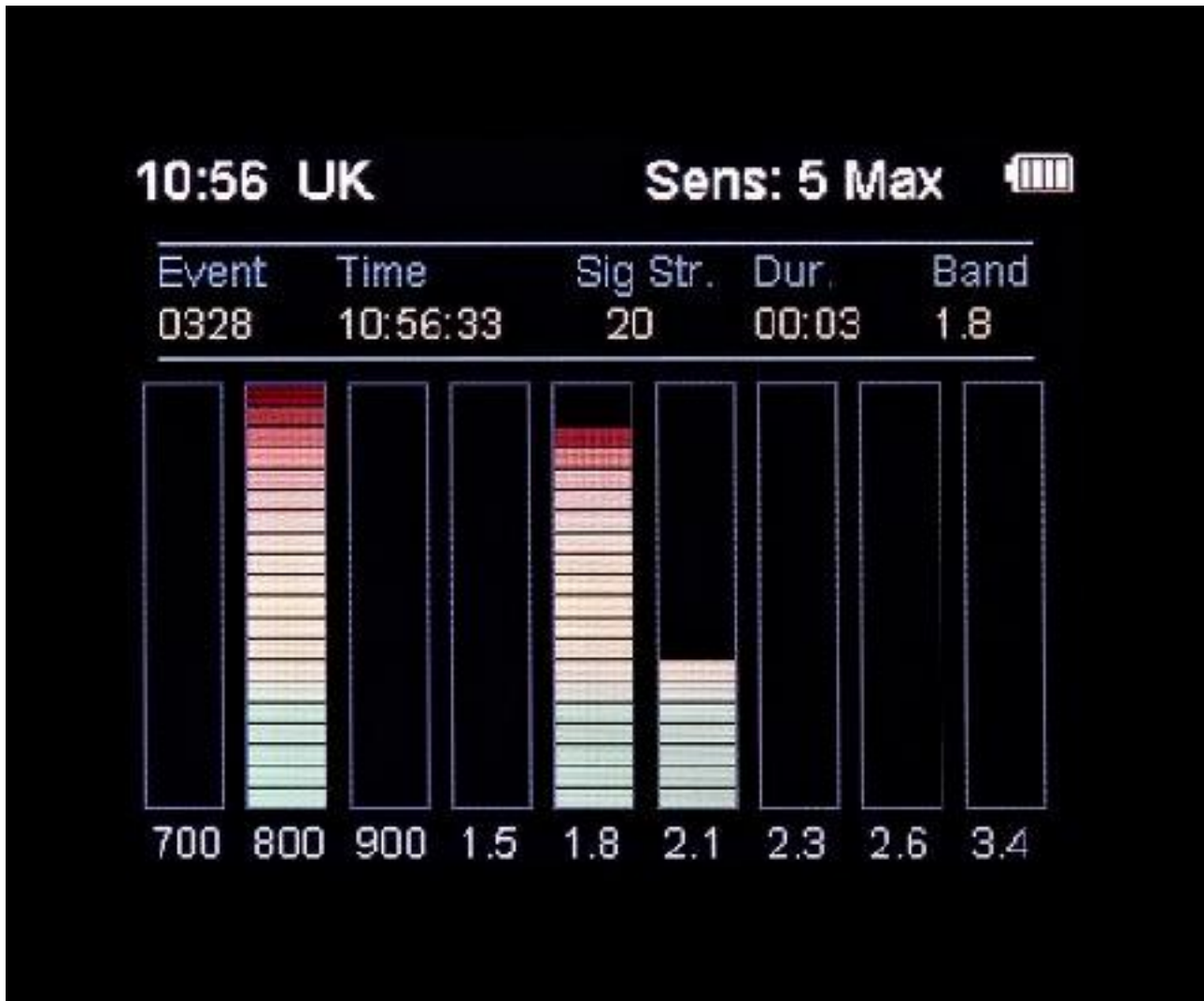
## MAIN SCREEN



Main screen of the CAM-GX5 with no detected signals

The main CAM-GX5 screen shows the detected cellular bands as individual vertical bars spread across the screen. Up to 10 bands can be displayed depending on the Location setting selected. Each band has a 20 element bar-graph running vertically. The stronger the detected signal

the more bars will illuminate. This will help locate the precise source of any detected signal. Above the signal bars, the latest detected event is displayed. The Event number, Time, Maximum Signal Strength (detected during that event), Duration and Band are all shown. To the top left of the screen the current time and Location Region is displayed. To the top right of the screen the battery level indicator is shown.

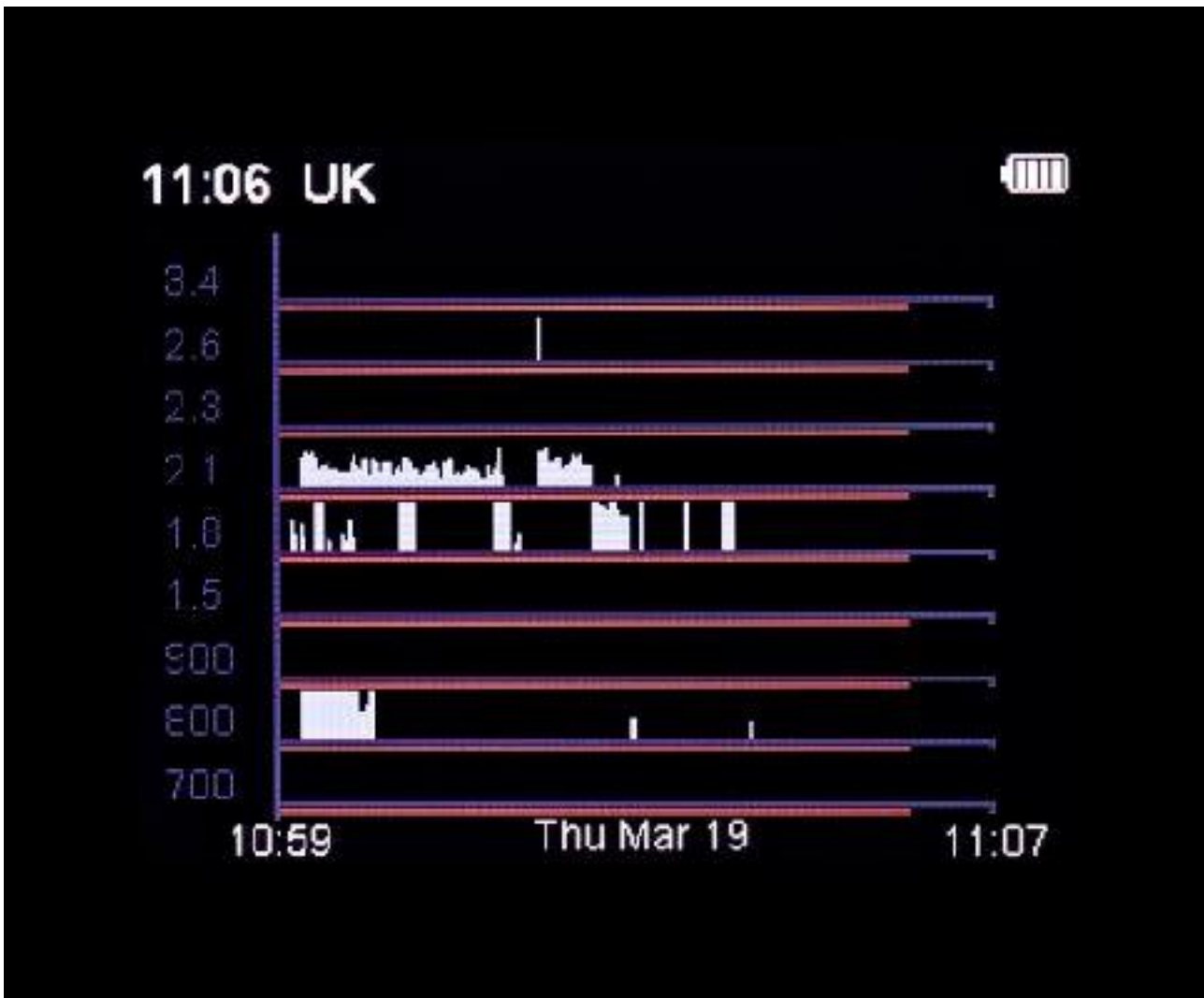


Main screen of the CAM-GX5 with three detected signals

## SENSITIVITY ADJUSTMENT

The CAM-GX5 has five sensitivity levels that can be adjusted to suit the range of detection required. From the main screen press the SENSITIVITY button. The sensitivity setting (displayed at the top of main screen) will momentarily change colour to red. Use the UP/DOWN buttons to adjust the sensitivity. Please note: at sensitivity 4 or 5 (Max) in very close proximity to a strong detected signal it is possible co-channel interference may occur and a signal be shown on another adjacent band or harmonic.

## LIVE CELLULAR GRAPH MODE



Live Cellular Graph Mode showing various detected signals

From the main screen press the GRAPH button to enter the live graph mode. The display will show a graph of all detected cellular bands on the vertical axis and 8 minutes of detected signal strength on the horizontal axis. Detected signals are shown as vertical lines on the graph, the height representing the signal strength. The start time, end time and date of the graph are shown at the bottom of the display. As the time elapses a bold white line runs from left to right to show the time elapsed. This line will change colour to red as the 8 minutes is nearly elapsed to warn the user that the graph is nearly complete. The graph will stop plotting after 8 minutes. To repeat, press GRAPH to exit and GRAPH again to restart.

## VIEWING THE CELLULAR LOG

Event	Date	Time	Sig Str.	Dur.	Band
0298	19/03/20	10:47:14	16	00:06	1.8
0297	19/03/20	10:46:59	16	00:04	1.8
0296	19/03/20	10:46:14	17	00:28	1.8
0295	19/03/20	10:46:09	3	00:05	2.1
0294	19/03/20	10:46:03	13	00:02	800
0293	19/03/20	10:46:03	3	00:02	2.1
0292	19/03/20	10:45:59	16	00:05	1.8
0291	19/03/20	10:45:45	6	00:08	1.8

Cellular Log Event List

The CAM-GX5 has a built in 4000 Event memory for cellular bands. This is particularly useful if the user wishes to leave the unit in situ and return later

to monitor detected signals. To view the cellular event log graphically in one hour segments, from the MAIN SCREEN press the LOG button. The message 'Press Up/Down to scroll through events. Press GRAPH to view events on a graph' will be displayed.

By pressing the UP/DOWN buttons the user can manually scroll through logged events. Up to eight events are displayed per screen, the latest event shown first. The Event number, Time, Duration, Maximum Signal Strength and Band are all shown. To scroll quickly press and hold the UP/DOWN buttons.

To view in graph format from the LOG list screen press GRAPH. By pressing the UP/DOWN buttons the user can view the log graphically in hourly increments.

Please note that a graph will only be displayed if at least one event occurred within a one hour time frame. If no events occurred within the hour a graph will not be created.

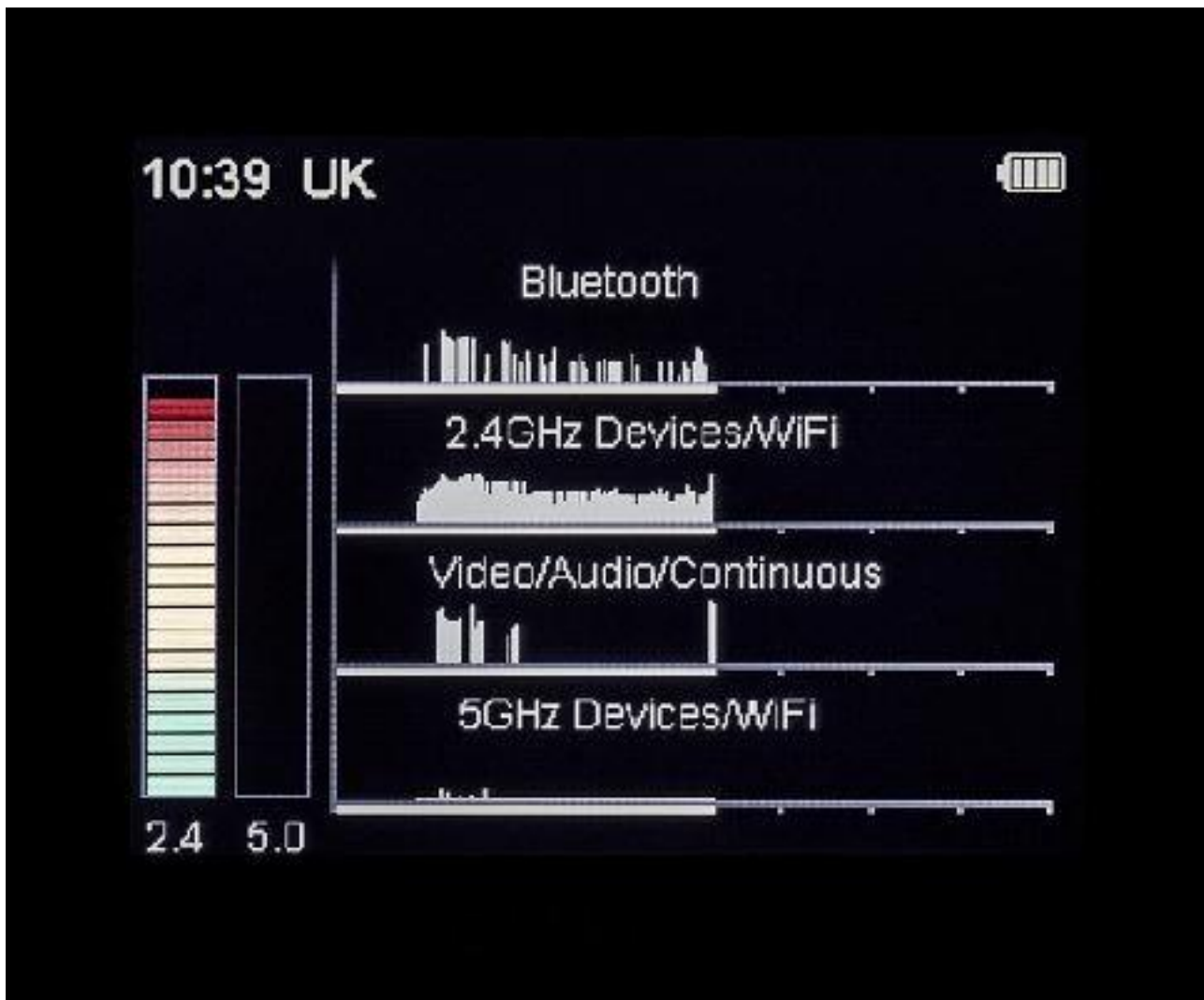
## DOWNLOADING LOG TO USB STICK

The cellular event log can be downloaded to a USB stick for transfer to a computer for storage or viewing at a later date. To download the log connect any USB stick into the 'USB Stick' socket on the side of the CAM-GX5. The message 'USB DOWNLOAD - DO NOT DISCONNECT!' will be displayed. The cellular log will then be downloaded to the USB Stick. Depending on the number of events in the log this may take several minutes. The log will contain the Event number, Date, Time, Duration, Maximum Signal Strength, Band and Sensitivity setting. The filename will be made up of the date and time of the download. Eg. 31032042 would mean 31st March 2020 plus a random 2 digit number. The stored file can be viewed in Notepad, Word, Excel etc. and displayed and sorted as required.

We recommend that the USB stick has no other data stored on it to ensure data is not corrupted. No responsibility will be accepted by the manufacturer for any technical problems/damage/loss of data caused

by the connection/transfer of data from the CAM-GX5 to any computer/ storage device. Please note: ONLY USB Sticks should be connected. Damage may result if other USB cables or devices are connected to the 'USB STICK' socket.

## WiFi/BLUETOOTH MODE



WiFi/Bluetooth mode showing detected live 2.4GHz signals and analysis

The CAM-GX5 has a separate inbuilt detector for 2.4GHz & 5GHz devices such as WIFI, Bluetooth and other devices that use these bands eg. wireless video transmitters. From the main screen press the CELL/WIFI button to enter the live 2.4/5GHz mode. To the left of the screen the live signal strength of any detected signal on either 2.4 or 5 GHz will be shown

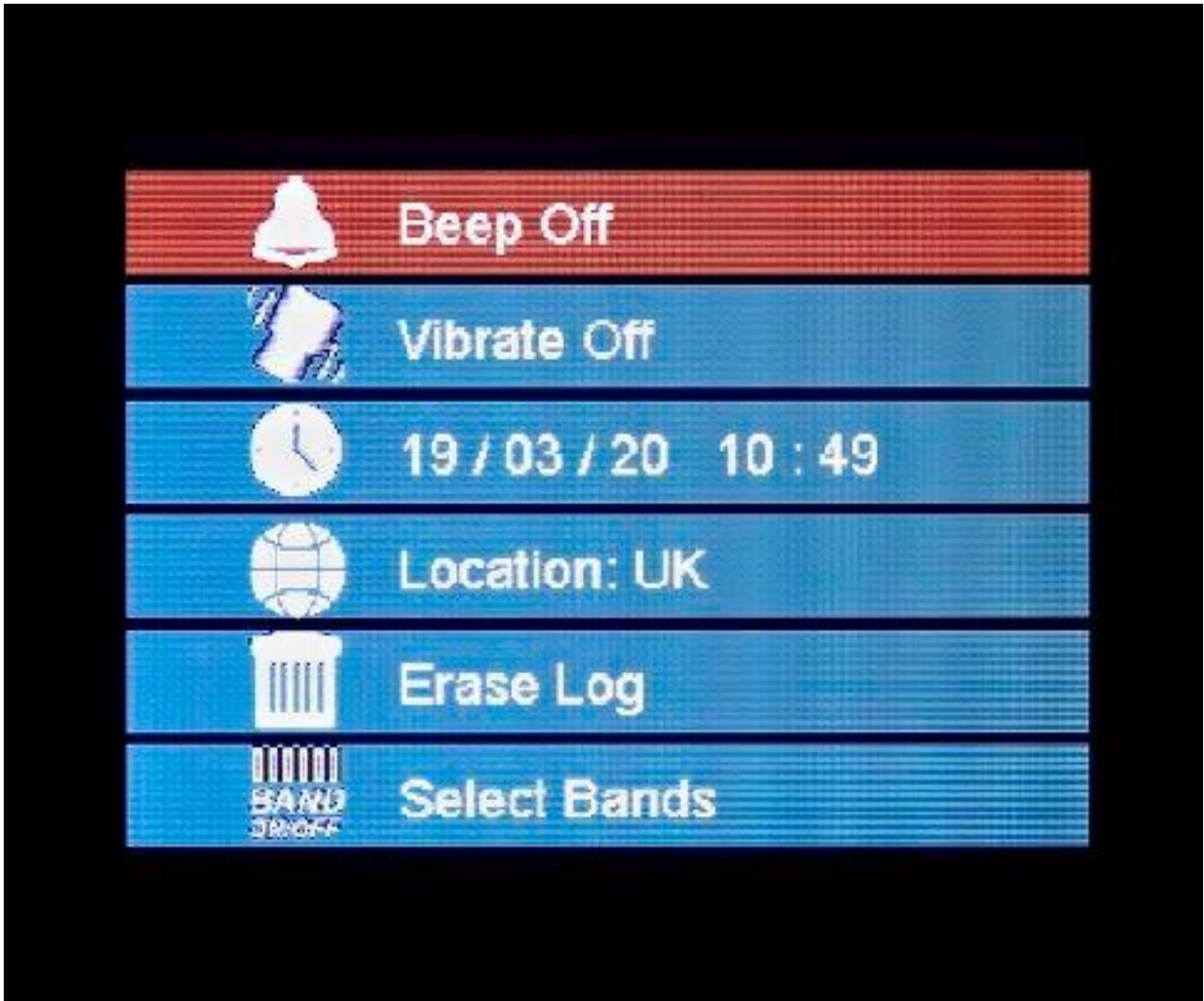
on the 20 element bar-graphs. This helps the user to accurately locate the source of any detected signal. The display will also show a graph of Bluetooth, 2.4GHz Devices/WiFi, Video/Audio Continuous and 5GHz devices on the vertical axis along with 8 minutes of plotted detected signal strength on the horizontal axis.

The CAM-GX5 uses sophisticated algorithms to discriminate between what type of signal is being detected. Bluetooth, Wifi and other 2.4GHz constant carrier signals will be analysed and the signal shown on the relevant graph. Please note that in some cases a strong signal is required for the algorithms to decipher Bluetooth. In the case of a weak Bluetooth signal it will still be detected but possibly shown as a 2.4GHz Device/Wifi. This may also be the case in an environment of multiple signals/devices. Constant carrier signals such as those used by wireless video transmitters are shown separately on the lower two graphs. Detected signals are shown as vertical lines on the graph, the height representing the signal strength. As the time elapses a bold white line runs from left to right to show the time elapsed. This line will change colour to red as the 8 minutes is nearly elapsed to warn the user that the graph is nearly complete. Please note the graph will stop after 8 minutes. To clear and repeat, press CELL/WIFI again twice.

#### VIEWING THE 2.4/5GHz BAND 24 HOUR LOG

The CAM-GX5 will log up to 24 hours of 2.4/5GHz activity. This is particularly useful if the user wishes to leave the unit in situ and return later to monitor detected signals. To view the 2.4/5GHz 24 Hour Log from the MAIN SCREEN press the CELL/WIFI button to and then the LOG button. By pressing the UP/DOWN buttons the user can view the log graphically in hourly increments. Please note that a graph will only be displayed if at least one event occurred within a one hour time frame. If no events occurred within the hour a graph will not be created. Pressing CELL/WIFI at any time will return to the main screen. Please note that the 2.4/5GHz log cannot be downloaded to USB Stick and the log will only store a maximum of 24 hours of data.

## SETTINGS



Settings Screen

To enter the SETTINGS screen press the SETTINGS button. Use the UP/DOWN arrow keys to scroll through the list:

Beep On/Off -The CAM-GX5 features an audible Beep tone that represents the signal strength of any received signal to allow the user to monitor without looking at the display. The rate of the beep will increase with the detected signal strength. To switch the audible Beep Tone on or off press OK to switch between settings. The Beep bell symbol will be shown at the top of the main screen when On is selected.

Vibrate On/Off - The Vibrate Mode enables the user to check for signals without alerting others. To switch vibrate mode on or off press OK to switch between settings. The vibrate symbol will be shown at the top of the main screen when On is selected.

Time & Date - See SETTING TIME & DATE above

Location - See REGION SELECTION above

Erase Log - The Log memory will be full once 4000 events are recorded. The CAM-GX5 will warn that the log is full but will still monitor live events. If you wish to delete the log select Erase Log in the SETTINGS Menu. The message TO ERASE THE LOG PRESS THE LOG BUTTON will be displayed. To confirm press the LOG button. Once erased these events cannot be recovered. This will also delete the 24 hour 2.4/5GHz Log. It is advised that cellular events are downloaded to a USB Stick before being deleted from the CAM-GX5 Log.

## BAND SELECTION

If required the user can select the cellular bands that they wish to be detected and ignore those that they are not interested in. For example it may not be necessary to look for devices on 3.4GHz so that band can be ignored.

To switch On/Off the required bands press the SETTINGS button, scroll down the list to select 'Select Bands' and confirm with the OK button. Use the UP/DOWN buttons to select the bands that you wish to switch On/Off and press OK to select/deselect the band. A 'X' in the box means the band is selected and will be detected. When finished use the SETTINGS button to confirm. From the main screen you will now see any bands that have been deselected with the word 'OFF' below the relevant signal bar.

To exit the Settings screen at any time press SETTINGS.

## MASTER RESET

In the unlikely event of a firmware failure the CAM-GX5 can be reset by pressing the 'LOG' Button and 'Power Symbol' Button. This will force the unit to shut down so it can then be restarted as usual.

SUPPLIED IN PACKAGE

CAM-GX5 - Main Unit

Adjustable hinged antenna

5V Micro USB Charger - 110V to 240V AC input (Auto Switching) with International Adaptors

High Protection Military Standard Carry Case





## TECHNICAL SPECIFICATION

Typical Performance Characteristics - at 20 degrees C

Regions covered	UK, EUROPE, ASIA, AFRICA, NORTH AMERICA, SOUTH AMERICA, AUSTRALIA
Detection Frequency Range	International bands - (300 MHz to 6 GHz) - Maximum 10 displayable bands
Sensitivity	-70 dBm Max
Display	TFT Colour 3.5" High Contrast Graphic Display
Battery	Internal Lithium-Polymer rechargeable Operating duration – fully charged battery – up to 6 hours
Charging	Micro USB socket - Charge Time ~ 4 hours
Operating Temperature Range	-15 to +50 degrees C - Relative Humidity < 90%
Dimensions	173 mm x 103 mm x 25 mm
Weight	Main Unit - 400g Carry Case Complete - 1.6 Kg
Signal Processing and Control	RISC Based Microcontroller with real time clock
Event Log	Maximum 4000 Events – Cellular Log Maximum 24 Hours – 2.4/5GHz/Wi-Fi/Bluetooth Log
USB Socket	For USB Stick downloa

