Flex Agent Guide

Vodafone Business Heat Detection

Flex User Manual

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1.0 Introduction

Vodafone Business Heat Detection Flex (VBHD-Flex) is a mobile solution provided by Vodafone to detect the elevated body temperature. This Heat Detection solution utilizes leading Thermal Imaging technology combined with Bullitt Group hosting solution and Vodafone market leading IoT Network to identify individuals with potential elevated skin surface temperature.
This IoT solution is delivered as a self-install package allowing simply setting it up on a smartphone and detecting the skin surface temperature of staff or members of the public entering the business premises.
HD-Flex Product is recommended for indoor use for target audience/customers of Small/Medium offices, Warehouse & Distribution, Manufacturing, Retail, Restaurants & Cafes, Schools, Construction, Event & Temporary Sites and Transportation.
Thus, HD-Flex module is an End-to-End solution to measure human body temperature and sends subsequent alert/alarm notifications when the skin temperature exceeds the pre-calibrated threshold limit.

Key Features of HD Flex

- Calibration of a baseline 'normal' temperature
- Scan and records the total number of session scans
- Audible alert sounds
- Configure device, thermal & platform settings.
- This portable IoT device plays a significant role in enabling businesses "return to the workplace" strategy.
- Reassure employees and customers by spotting higher skin temperature readings.
- Helps to maintain the right levels of social distancing

Thermal image screening can help by providing a first line of defence against individuals with communicable illnesses remaining unchecked, in close proximity to other people, by identifying those exhibiting an above average temperature. Any scenario in which controlled access is given to groups or streams of people – whether they are employees, authorised persons, or members of the public – can benefit from preventative temperature screening at entrances and exits.

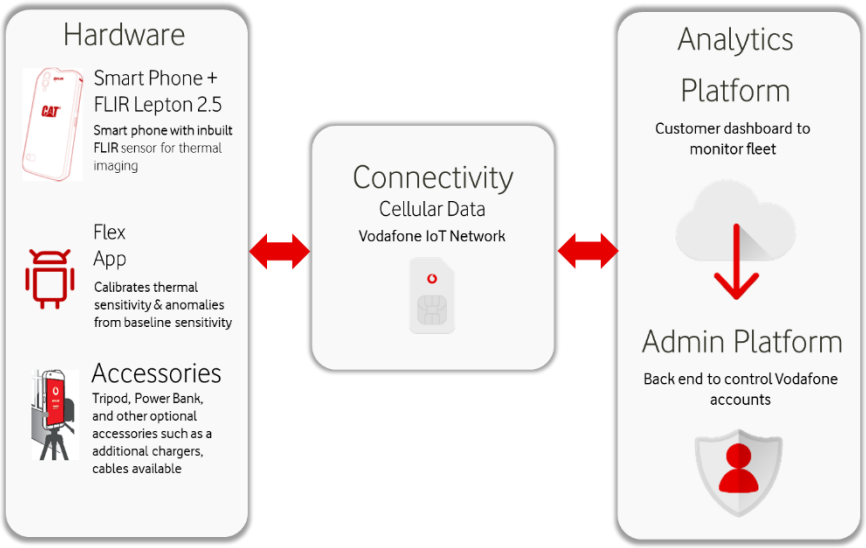
1.1 Flex hardware

The Flex hardware kit undergoes staging prior to customer shipment. The kit shipped to customers includes the following components:

				
	Global IoT SIM w/ 12 Months Connectivity (Inserted)	10 000mAh Power Bank	153cm (6.1") Tripod w/ Mount	Cat S61 Smartphone w/Charging accessories

1.2 Flex platform

The Flex Analytics and Admin platform, referred to as the "Dashboard" is connected to the Flex App through a Cellular Data connrection via the Vodafone IoT network. The Dashboard is a portal accessed by Vodafone customers which provides centralised access to scan data for all devices deployed on the customer account, and real time heat alarm notifications. It also provides an Admin platform to assign devices and users to groups and an access heirarchy.



2.0 Cat S61 Device

The Cat S61, with integrated FLIR Lepton 2.5 sensor, is an Android smartphone with thermal imaging capability. For more device information and technical specifications please see:

https://www.catphones.com/en-us/cat-s61-smartphone/

User manuals for the Cat S61 can be accessed here:

https://www.catphones.com/download/User-Manuals/S61-Smartphone

FAQs for the Cat S61 can be accessed here:

https://www.catphones.com/en-gb/help-support/s61-support/

On first start up by the customer the S61 will automatically install the Flex application and wallpaper and remove the standard Cat S61 applications. The device will reboot after first set up and should appear as shown here.

If for any reason the Flex application installation fails, the app can be found at:

https://play.google.com/store/apps/details?id=com.vodafone.flex&hl=en_GB

For support escalations for the Cat S61 device contact: support@catphones.com

2.1 Device use troubleshooting

The Flex application and FLIR Lepton sensor typically place a higher demand on the device battery than during conventional use. To avoid losing power during active scanning it is recommended that the S61 is always connected to power while in use – either via the supplied charging block to an AC outlet or using the supplied 10 000mAh power bank.

2.1.1 Power issues: Device is not charging

Step 1. Check the device is connected to the AC power via a suitable adaptor and USB cable.

Step 2. Check the USB cable for Damage

Step 3. Check the Adaptor for damage

Step 4. Check the Cat S61 USB connector for damage

Step 5. Check the device has not taken a deep discharge

- Device may have taken a deep discharge (Misbehaving App for example draining the battery), plug the device via an approved adaptor to the AC mains supply.

Note: With a device with a fully depleted battery charging via a lap top port will not provide enough current to charge the battery efficiently.

- Charge the device from an AC source with correct adaptor for at least 45 minutes before attempting to power the device on.

Note: A device that has taken a deep discharge may take a longer press on the power button to awaken, feel for the vibration then release the power button.

Option: Device will not charge after above steps

- Device charged for 45 minutes, no indication of charge, potentially an internal fault with the adaptor/cable.
- If available re-start the charging cycle with an alternative charger and cable.
- If successful identify which component is faulty and arrange for a replacement.

2.1.2 Device has taken charge but will now power on

Step 1. Open the SIM card door to gain access to the reset button marked “OFF”.

Note on the Cat S61 there is also a square aperture, this is not the reset button avoid pushing anything into this opening.

- Using a paper clip or similar, depress the button for 5 seconds then release.
- Attempt to power the device on.
-

Note: A device that has taken a deep discharge may take a longer press on the power button to awaken, feel for the vibration then release the power button.

Step 2. If the device does not respond to the reset button actions above. then hold the power button down until the device vibrates and then restarts. This will be approx. 12 to 15 seconds.

If the device does not recover, then hold the power button and the volume up button for 45 seconds the device will vibrate and then restart.

2.1.3 Device powers down while taking charge

Step 1. Open the SIM card door to gain access to the reset button marked "OFF". Note on the Cat S61 there is also a square aperture, this is not the reset button avoid pushing anything into this opening. • Using a paper clip or similar, depress the button for 5 seconds then release. • Attempt to power the device on.
Step 2. Confirm the device will charge by reconnecting via the USB and adaptor to AC mains, leave for a few minutes minimum 5 then attempt to power on once more.
Step 3. If the device does not respond to the reset button actions above. then hold the power button down until the device vibrates and then restarts. This will be approx. 12 to 15 seconds. If the device does not recover, then hold the power button and the volume up button for 45 seconds the device will vibrate and then restart.

2.1.4 Poor Stand by time

Step 1. Check the battery usage, Go to the Settings menu
Step 2. Select Battery
Step 3. Select menu options stacked three dots top right corner "Battery usage" select
Step 4. You can now see the graphic of the discharge rate of the battery. Check for unusual App behaviour.

2.1.5 Using the device in Safe mode

For power off, discharge, Poor standby time, crashing or freezing Apps and slow charging issues these can be caused by misbehaving Apps on the device, the device can be opened in Safe mode to allow identification of the App in question.

Step 1. Press the power button (whilst device is on)
Step 2. There will be 3 or 4 options Power off, Restart and Screenshot (Emergency being the 4th)
Step 3. Long press on Power off a window will pop up offering to reboot to safe mode, accept this.
Step 4. Device will reboot with only the factory installed Apps, check if the reported issue is now seen in Safe mode.
Step 5. If device functions normally the reboot the device which will now revert to normal mode
Step 6. Identify the last App added and uninstall check the performance repeat until the misbehaving App is identified, uninstall, and reinstall check performance. If reinstalling does not prevent the issue from re-occurring, then report this to the App developer.

2.1.6 Mobile data connection

The Vodafone IoT SIM has limited white listed network access. The S61 will NOT be unable to:

- Make phone calls
- Send Text or WhatsApp messages
- Access internet sites (other than those necessary for the proper function of the Flex platform)

Should the Flex application return a data connection error, check the following:

Step 1. Ensure that a Vodafone IoT SIM card is correctly inserted in the Cat S61.
Step 2. Ensure that Mobile Data and Roaming are set to "On" by going to: Setings/Network & Internet/Mobile Network.
Step 3. Ensure that the correct APN is assigned. Go to: Setings/Network & Internet/Mobile Network/Advanced/Access Point Names and ensure that the following details are shown: Profile Name: Vodafone HD Flex MCC: 901 MNC: 28 APN: hdflex.vodafone.iot APN Type: Internet APN Protocol: ipv4
Step 4. Confirm that the SIM card is active on the Vodafone IoT network. SIM ICCID information is available on the dashboard: Menu/Device Manager and search for the device serial number or name provided by the end user.

Should steps 1-4 be unsuccessful, refer to Unable to connect to platform errors in this document.

3.0 Flex Dashboard

The Dashboard is configured for each customer during staging, prior to hardware shipment. An administrator (Owner) within the customer's organisation is identified and their details are loaded to the Dashboard along with the SIM Pairing File. The SIM pairing file links device Serial Number, IMEI, ICCID and IMSI details.

Once this information is loaded the customer account is automatically created and all devices sold to the customer are populated to the Dashboard. The Administrator / Owner is sent a system generated email with login details (URL, Username and Password) to the Dashboard at https://flex.iot.vodafone.com/

The Owner is then required to configure the Dashboard to set up:

Groups Groups are typically created based on the organisational or geographic deployment of the Flex thermal cameras. This enables you to create a logical and efficient viewing, managing, and reporting system within your organisation.
Users

The dashboard has three levels of access: Owner, Manager and User. All users need to be assigned a level of access and to a group (or groups). This will determine what each user is able to view and edit on the dashboard.
Devices Devices need to be assigned to Groups to ensure logical access for users within the customer organisation. Subsequent device management options include: ○ Add or Delete devices ○ Rename devices (assigning a logical device name based on its location) ○ Edit IMEI / Serial Number, or ICCID / IMSI in the instance of SIM or Device replacement ○ Re-assign device group

3.1 Customer Accounts

As an Agent User you will have full access and control to all Vodafone Customer accounts. To access a specific Customer Account follow either of the 2 methods given below:

Method # 1

Step 1. Log in to https://flex.iot.vodafone.com/ using your provided Agent credentials.
Step 2. Request the applicable Flex Customer Account ID Number. This is provided to the Owner user in their initial email, alternately the Owner can access this account number by accessing: Menu/Account Info and copying the Account ID field.
Step 3. In the Agent Dashboard navigate to: Menu/Account Info and select CHANGE ACCOUNT.
Step 4. Enter the provided customer Account ID and you will be logged in to the customers Dashboard account with full access to assist them in troubleshooting or administering their account.

Method # 2

Step 1. Log in to https://flex.iot.vodafone.com/ using your provided Agent credentials.	
Step 2. Navigate to: Menu/Manage Accounts.	
Step 3. Search for the Account in Search bar either by using the Name / Account ID.	
Step 4. Click on the Go to account icon and you will be logged in to the customers Dashboard account with full access to assist them in troubleshooting or administering their account.	

3.1.1 Account Creation

To create new Customer Accounts:

Step 1. Log in to https://flex.iot.vodafone.com/ using your provided Agent credentials.
Step 2. Navigate to: Menu/Manage Accounts/Add Account and complete all required fields with information provided by Vodafone Order Processing.
Step 3. Select Import Devices/Choose File and attach the SIM Pairing File provided for that customer.
Step 4. Click CREATE ACCOUNT to complete account setup.

3.2 Managing Accounts

As an Agent User you will have full access and control to all Vodafone Customer accounts in the system, in addition to the option of creating new accounts.

In the drop-down menu select "Manage Accounts" to open the Manage Accounts tab.	
Select the View audit trail icon to see a chronological record of activities for a particular account.	
Select the Suspend account icon to suspend an account from the system.	
Select the Resume account icon to resume a suspended account in the system.	

3.3 Managing Groups

Examples of a group include location derived (eg. a facility or a geographic area) or organisationally derived (eg. Manufacturing, Engineering etc.). Groups should align to the existing management structure of the customer's organisation.

In the drop-down menu select "Manage Groups" to open the Manage Groups tab.	
Select "Add Group" in the lower left corner to add new groups to your organisation.	
Select the Edit Group icon to edit group details (Change Name or Description).	
Select the Delete Group icon to remove a group from the system.	

3.4 Managing Users

In the drop-down menu select "Manage Users" to open the Manage Users tab.	
Select "Add User" in the lower left corner to add new users to your organisation.	
Select the Edit User icon to edit user details (Change Name or re-assign Group allocation).	
Select the Delete User icon to remove a user from the system.	

Note: User permissions vary according to the matrix below:

	Owner	Manager	User
Create/Delete **Groups**	✓	✗	✗
Add/Remove **Owners**	✓	✗	✗
Add/Remove **Managers**	✓	✗	✗
Add/Remove **Users**	✓	✗	✗
Add/Remove **Devices**	✓	✓	✗
Edit **Devices**	✓	✓	✗
View **Devices**	✓	✓	✓
Access **Reports**	✓	✓	✓

3.5 Managing Devices

Devices, by default, are identified on the Dashboard by Serial Number. They need to be assigned to Groups and renamed according to the customer organisational structure and physical location of each device.

3.5.1 Renaming Devices

There are three ways to rename a device:

Within the Flex application on the device: Open the Settings menu and select Device Name. Enter the preferred Device Name according to the organisation naming convention. The device name will update to the Dashbooard after logging out and logging back in to the Dashboard.	
In the drop-down menu select “Manage Devices” to open the Manage Devices tab. Select the Edit icon to rename device to the preferred Device Name according to the organisation naming convention.	
In the Dashboard main view select the Edit icon above the device list on the left side of the screen. Rename device to the preferred Device Name according to the organisation naming convention.	

3.5.2 Deleting lost, stolen or replaced Devices

Should a device be lost or stolen, or require replacement it should be removed from the Dashboard immediately.

In the drop-down menu select “Manage Devices” to open the Manage Devices tab. Select the Delete icon to remove the device.		
In the Dashboard main view select the Edit icon above the device list on the left side of the screen. Then use the Delete icon to remove a device from the list.		

3.5.3 Adding Devices

You can either add Individual Devices to the Customer Account, or add Bulk Devices.

3.5.3.1 Adding Individual Devices

To add an individual device:

Step 1. Make sure you have all Device information available (Device Serial Number, IMEI and SIM IMSI and ICCID). Ensure that SIM is active on Vodafone IoT network.
Step 2. Navigate to: Menu/Manage Devices and select ADD DEVICE.
Step 3. Complete all required fields with Device information, including Group assignment, and click ADD.

3.5.3.2 Adding Bulk Devices

To add an multiple devices you will need to have the SIM Pairing file available and verified Order from Vodafone Order Processing for all new devices to be added to the account:

Step 1. Navigate to: Menu/Manage Devices and select BULK UPLOAD.
Step 2. Select the SIM Pairing file and select UPLOAD.

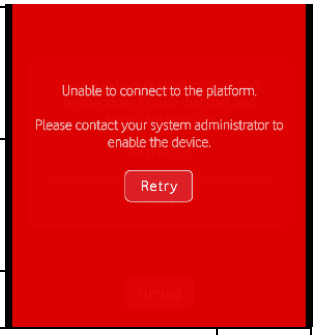
3.5.4 SIM Swap

Should a SIM swap be required edit the device entry as follows:

Step 1. Navigate to: Menu/Manage Devices and identify/search the device requiring a SIM swap.
Step 2. Use the Edit icon to replace the old IMSI and ICCID numbers with those of the replacement SIM.

3.5.5 Resetting Device Key

If the Flex application is uninstalled and re-installed, or incorrectly loaded to the Dashboard, the device will return an Error Message: "Unable to connect to the platform".

Step 1. Confirm that the device is correctly loaded on the customer dashboard account by searching for the device in the device list on the left of the dashboard screen or in the Menu/Manage Devices tab.	
Step 2. If the device is not found, check SIM Pairing File against customer account to confirm correct details for missing device. If device is found proceed to Step 4.	
Step 3. Follow theses steps to Add Device.	
Step 4. Reset device communication: Menu/Device Manager and search for the device serial number or name provided by the end user. Select the shield icon and confirm device reset communication key. Instruct the end user to push "Retry" on the error screen to restore communication.	

3.6 Supported Browsers

The Dashboard is supported in the following browsers:

- Google Chrome
- Microsoft Edge
- Safari
- Mozilla Firefox
- Mobile Browsers

4.0 Flex Application

4.1 Flex Application Introduction

The Flex application uses a dual scanning methodology in order to determine whether the skin temperature of a scanned subject is higher than normal. For detailed instruction refer to Flex User Guide.

4.1.1 Relative Temperature

The Flex System is sensitive enough to identify temperature differences of just 0.1°C.
Each time it is activated a calibration is performed. This is always performed at the screening location and at a constant distance. The app calculates the average 'normal' skin temperature at any given time and continuously updates calibration through the screening session so that changes in ambient temperature are always reflected in the 'normal' baseline. The system will identify outliers and alerts you to higher than expected heat readings.

4.1.2 Thermal Patterning

Vasodilation is the process of widening of blood vessels which causes increased blood flow to a part of the body. Vasodilation under the skin increases heat loss from the body and is a mechanism for lowering core body heat. When this occurs, it is typically synonymous with elevated surface skin heat and presents as a uniform heat pattern on the face. Flex detects differences in these heat patterns and alerts when the pattern is uniform.

If a mask is detected by the sensor the Thermal Patterning will be automatically disabled for that scan and only Relative Temperature analysis used.

4.2 Flex Application Troubleshooting

4.2.1 Flex application has Frozen or Failed to initialise

Step 1. Restart the application, confirm whether problem persists
Step 2. If problem persists, restart device and confirm whether problem persists
Step 3. If problem persists uninstall Flex application and re-install from Google Play Store

Note : Afer re-installation the Device Communication Key will need to be reset on the Dashboard, for details see: Resetting the Device Key

4.2.2 Flex returns an Error Message: Unable to connect to platform

Step 1. Confirm that the device is correctly loaded on the customer dashboard account.	
Step 2. Reset device communication: Menu/Device Manager and search for the device serial number or name provided by the end user. Select the shield icon and confirm device reset communication key. Instruct the end user to push "Retry" on the error screen to restore communication.	

4.2.3 No Audio Alarm is heard or too soft

Step 1. Check device volume key to ensure device speaker volume is set appropriately	
Step 2. Check that Audio "Sounds On" is selected on the Flex scanning screen	

4.2.4 Geo-location data not available

When uploading scan data or alarms the Location icon turns Red.

Step 1. Check that Location Services are enabled on the device: Settings/Security & Location/Location. Ensure Location is "On".	

4.2.5 Scan upload failure

When uploading scan data or alarms the Data Sync icon turns Red.

Refer to Mobile Data Connection in this document.	

4.2.6 Flex is giving erratic temperature readings or continuous alarms

Step 1. Refer to the Flex User Guide and ensure that the setup instructions have been followed correctly, paying specific attention to: • Confirm that initial calibration has been properly conducted. • Confirm that the subject is scanned at a fixed and consistent distance from the scanner. • Confirm that the background is uncluttered and that there are no possible heat sources in the field of view or sunlight (direct or reflected) falling in the field of view . • Confirm that subjects are stationery while scanning and not moving toward or away from the scanner. • Confirm that guidelines on hats and glasses are being adhered to.	
Step 2. Select Calibrate and re-do calibration	

5.0 Flex Escalations

For escalations where first level service intervention is unable to resolve the issue, please refer to the escalation table below for further assistance.

Team	Responsible Person	Role	Triggers When	Escalation
flexorders@bullitt-group.com	Philip Goodwin	Flex Product Lead	Dashboard account issues	pgoodwin@bullitt-group.com
	Nico Bestbier	Flex Lead Engineer	Flex Platform issues	nico@appsafest.com
support@cathones.com	Tamas Antal	Cat Service Director	Hardware issues, Service issues	tantal@bullitt-group.com

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