Mobile Scanning Unit

User Guide

FE TECHNOLOGIES

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Introduction

The FE Technologies Mobile Scanning Unit enables the library staff to perform a stocktake, to search for items and to switch the security status of items to "on", without the need to remove items from the library shelving area or interrupt regular library services. The Mobile Scanning Unit consists of a handheld wand plus a mobile phone – the two communicate using Bluetooth and do not have any external wires (other than a standard USB cable for data upload/download).

This user document will help you harness the full potential of this equipment.

Document Legend:

✅	Do's (recommended action)	❌	Don't (not recommended action)
⚠️	Note (a note of advice)	❗	Caution (A note of warning or caution)
❓	(FAQ) Frequently asked question	💡	Tips for effective usage
✳️	Optional features	ABC	On screen keyboard button

Key components

The Mobile Scanning Unit consists of the following components:

- Handheld wand – weighing 430g, with a scanning time of over 10 hours and an idle time of over 60 hours
- Samsung S4 Mini mobile phone – weighing 110g, with a scanning time of 20 hours and an idle time of 19 days
- The unit comes with 2 sets of 3 Li-ion batteries, a battery charger and a USB cable.

Using the Mobile Scanning Unit

Charging the Handheld Wand Batteries

The handheld wand is supplied with two sets of three EagleTac 18650 3100mAh protected Li-ion batteries. The batteries are placed in the charger as shown and will require an 8 hour total charge time when flat.

Right: the batteries and charger

Inserting the Batteries

Turn over the wand and open the battery compartment by unclipping the battery compartment. Place the three batteries into the unit with all the positive (red) ends of the batteries facing to the head of the unit. Replace the battery compartment cover and snap it back into place by pressing down.

Left: the battery compartment

Starting Up the Unit

- Power on the RFID wand by turning the power switch to the ON position (located on the back of the unit.
- Power on the mobile phone by switching on the power button on the top right hand side of the phone.
- Switch off both the wand and the phone in the same manner as the above.

Right: the "On" switch on the wand

The power switch on the phone is on the top right hand side. Select the "Shelf Scanner" icon to launch the application. You will be presented with the main menu:

- Stocktake
- Find Items
- Security Blaster

The phone will indicate when it has detected the presence of the handheld wand, with a notification in the top left hand corner. Indications of the battery life of both the phone and the wand can be found in the bottom right hand corner of the screen.

In the scenario that the wand is turned on and not connected or waiting to connect to the mobile device, an LED light will blink red, providing visual feedback to the user when this event occurs. Conversely, an LED light will turn green when the wand successfully connects to the mobile device.

⚠️ Note that the wand will emit a loud beep if it is left without connection to the phone – to alert you to switch off the unit in case it's been left on accidentally.
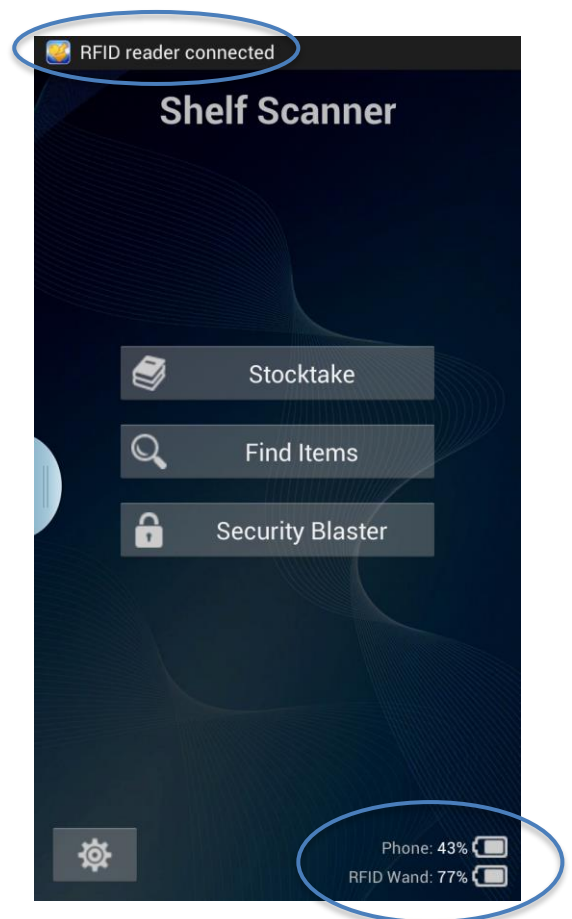
Above: the main menu

Using the Mobile Scanning Unit

Synchronising the phone

The Shelf Scanner Synch Application will have been installed by FE Technologies as part of your FE Technologies Library RFID setup on your selected PC or laptop. This application allows you to manage your stocktake lists and synchronises with the mobile phone component when plugged in via the USB cable. Once plugged in, a message at the bottom of the screen will tell you that the phone device has been recognised. Click on "Synchronise" to synch the phone with the application – stocktake lists will be sent to the phone and stocktake results will be sent to the Synch Application.
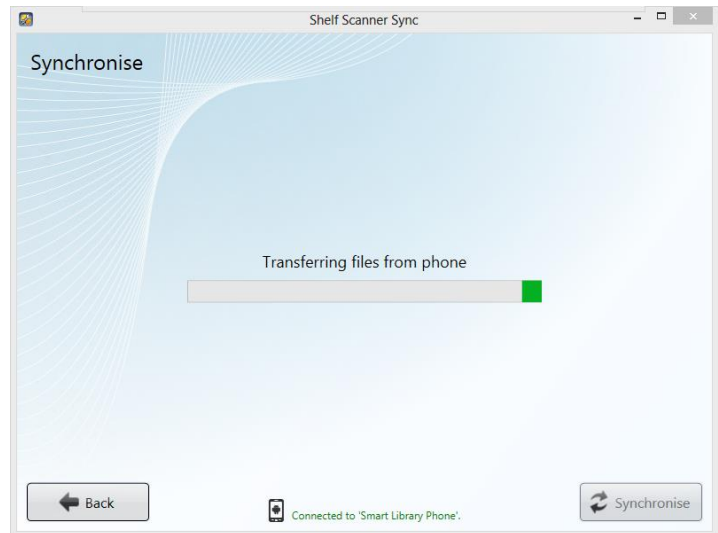
Above: synchronising the phone

Multiple PCs or laptops can be used to run the application, along with multiple Mobile Scanning Units. Any changes to stocktake sessions will be amended each time you plug in the mobile phone (you do have an option to reject the automatic update though.)
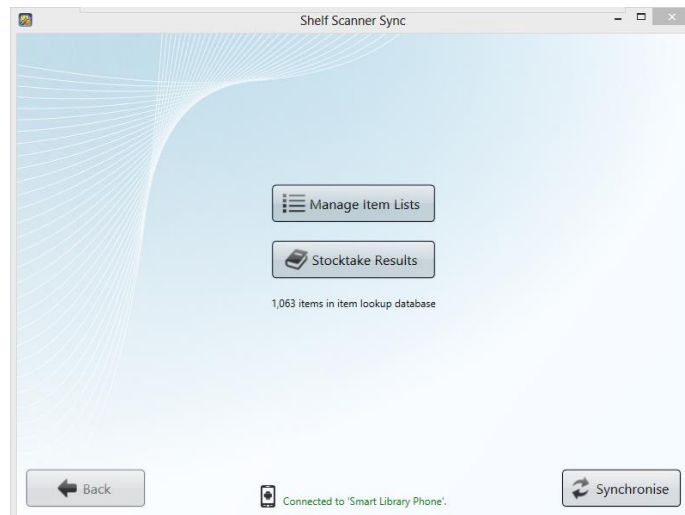
Right: the Main Menu of the Synch Application

You can manage stocktake lists using the Shelf Scanner Synch Application. The "Import" button allows you to import files. Lists can be named and multiple stocktake lists can be created. The date and time of each stocktake performed is also listed.

Right: Managing item lists
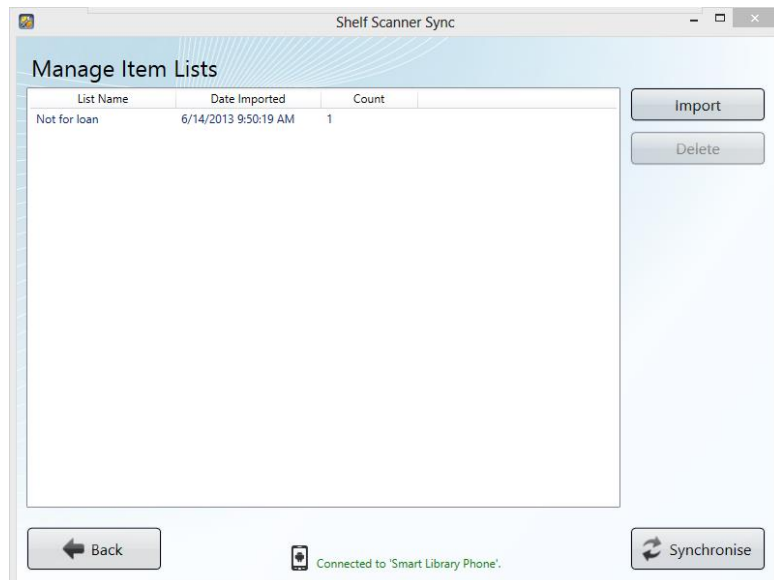
Stocktake

Select "Stocktake" from the main menu – you can create a new session or use an existing one.
You're now ready to start scanning the collection.

⚠️ Note that the wand must be within 20 metres of the phone – the wand will emit a beep to alert you if connection is lost. Carrying the phone in your pocket or in a bag allows you to monitor the progress of the stocktake and to view alerts, found items etc.

Right: A new Stocktake Session
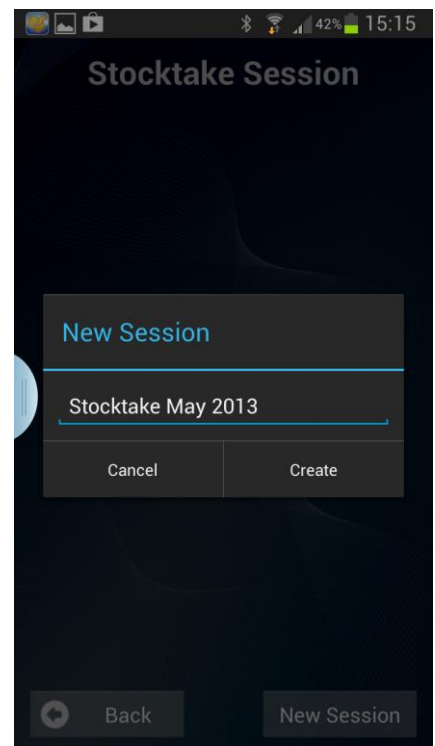
Scanning procedure

Work methodically through the section you wish to stocktake or search in - hold the wand with the loop parallel to the plane of the spines of the items to be scanned.   The stocktake procedure can be performed at a rate of up to 12,000 items an hour.

Right: the correct positioning of the wand against shelved books

A controlled way of stocktaking is to move the wand in "loop length steps", (usually takes a couple of seconds depending on the number of items within the loop) before moving to the next loop length.

Reading items

The unit will emit a beep sound when it has finished reading items in that section. Once you hear the beep move the wand to the next section. A counter will indicate the number of items read.

The function to "beep when no more tags detected" is configurable via the Management Console. Leaving this box unchecked will mean the unit will make an audible 'click' sound as it detects each item. If no clicks are heard, it means it has read all items in its read range.

Right: a stocktake in progress
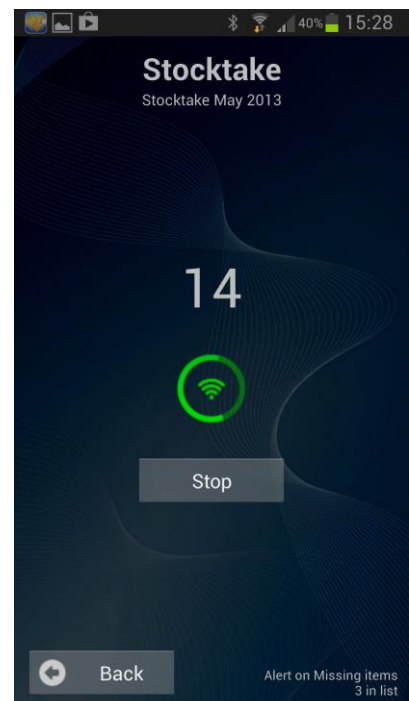
Information regarding your stocktake session will be displayed on the phone at the end of the session. You can open it for more detail and when you plug the phone into your PC it will synch with the Synch Application allowing you to view, edit and export your stocktake results.
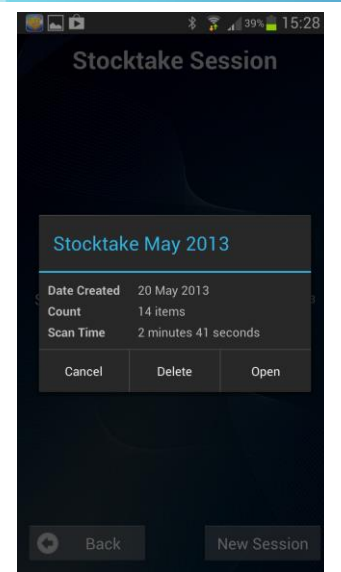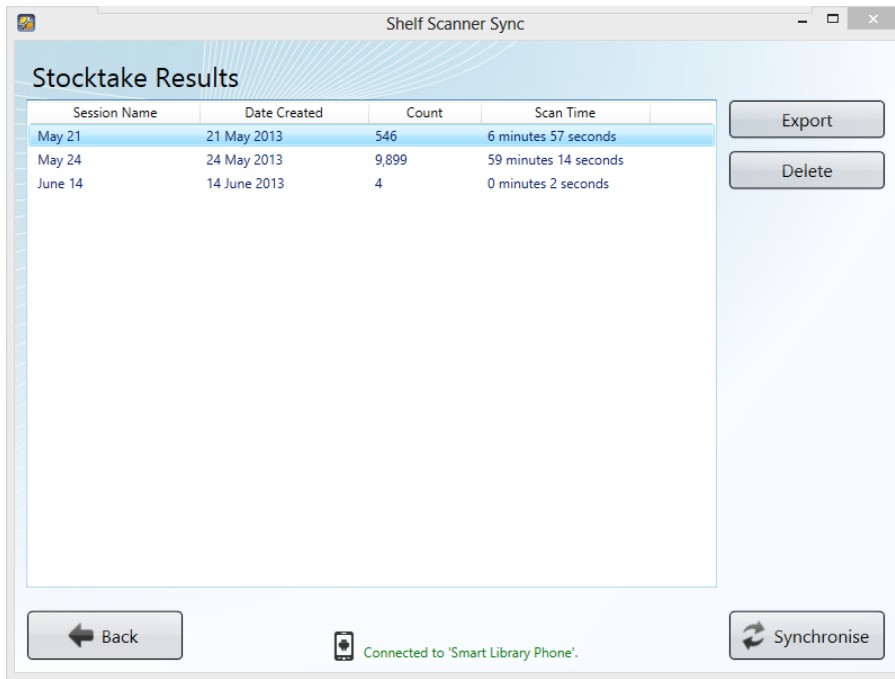
Above: A completed Stocktake session on the phone

Left: Completed Stocktake sessions on the Synch Application

Alert Lists

Alert Lists are a way for you be alerted to items (such as those on a missing items or weed list) whilst conducting a stocktake. Alert Lists are enabled via the "Settings Menu" – In the event that an alert item is detected, a message will be displayed on the screen and a voice will emit from the mobile device informing the user of the item details. In addition, the red light on the face of the wand will light up. The user can press the button on the face of the wand to the left of the red light to proceed with the stocktake, or use the screen interface of the mobile device to perform the same action.

Select the Settings icon, then select "Stocktake Alert List" to view lists of alert items.
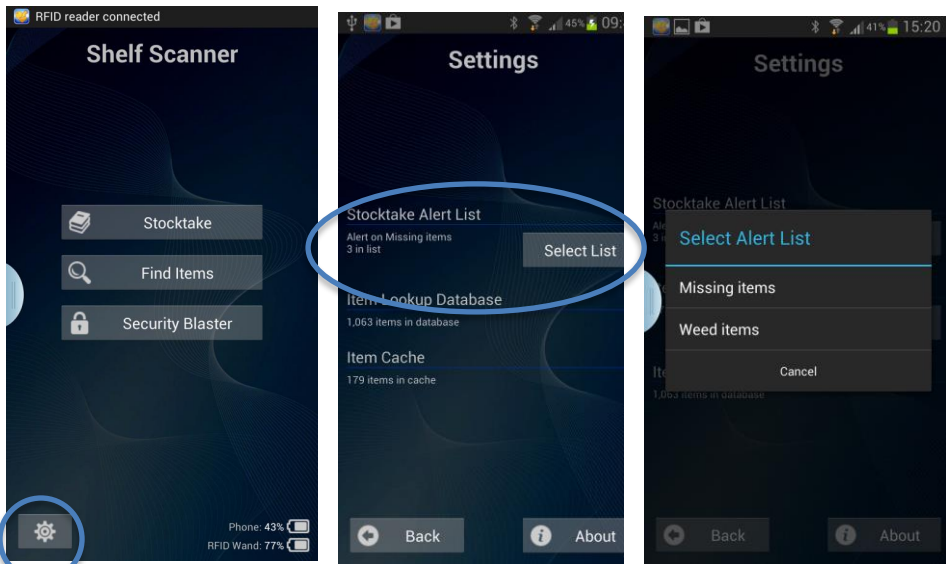
Left: navigating to the Alert Lists

You will also be able to see what alerts are enabled when performing a Stocktake by looking at the bottom-right corner of the screen.

Left: the stocktake screen

Find Items

You can setup the Mobile Scanning Unit to find items – from a weed list, missing items, or claimed returned items, for example. Individual items can be manually entered via the phone, or you can import a list of search items when you have the phone plugged into the Synch Application. Multiple "find items" lists can be setup as required.

Select "Find Items" from the main menu of the phone. Commence scanning the section of the collection you wish to search, scanning the shelves in the manner described above in the Stocktake section.
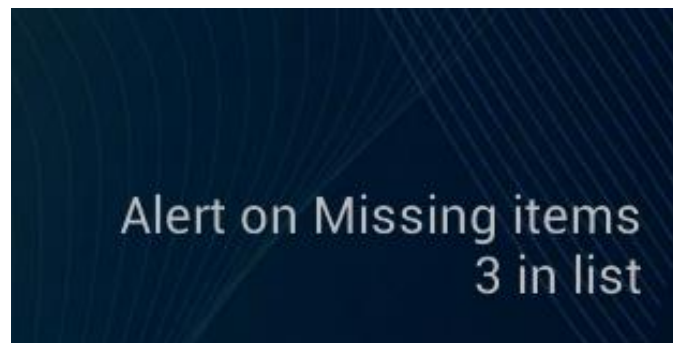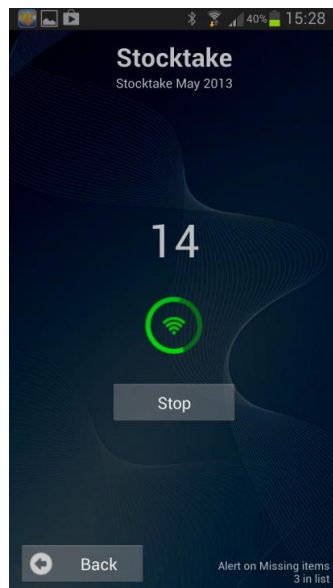
When the unit detects an item on the list the LED on the handheld wand will flash green and the mobile will highlight the item with a green tick and will provide a voice alert by speaking the title of the item.

⊛ You can purchase a Bluetooth earpiece to use with the phone if you wish to perform this process without interrupting library users. (Not supplied by FE Technologies)
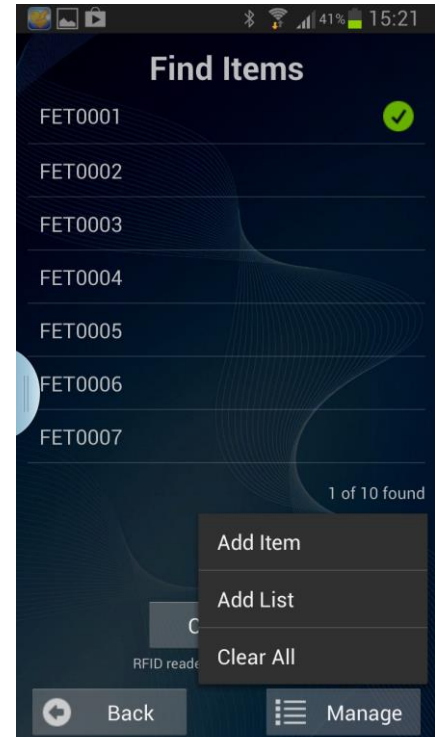
Configuring the Mobile Scanning Unit

This is performed via the Management Console. Please refer to the Management Console User Guide for further information.

Security Blaster

This program updates the tags to set their security to 'ON'. This is a very fast and reliable process capable of processing up to 20,000 tags per hour.

⚠ This process will only be performed once you have completed the conversion of your collection to RFID.

The FE Technologies Retrospective Encoding system does not set the security of the tag to 'ON' during the tagging process. This is to allow the library to continue to operate without disruption during the tagging period using the old process that the Library was using prior to the initiation

of the RFID. If the tags are set to 'ON' during the tagging process, and these items are issued by the library's non-RFID process prior to going live, they will set off the alarm on the security gates when the items are brought back for returning by the patron. This will cause confusion and lack of confidence in the system.

To overcome this issue, FE Technologies has developed the 'Security Blasting' function. This basically involves the following steps:

- Encode tags without setting the security during the retrospective tagging process
- After the retrospective encoding process is completed and a day or so before going live with RFID, use the 'Security Blasting' function and batch update the security status of all the items in the library
- Activate security gates
- Go live with the FE Technologies Library RFID system

Select "Security Blaster from the main menu.
The blasting function consists of two processes:

- A batch process that instructs all the tags covered by the loop to be set to the secured value.
- A verify process that detects tags that are yet to be set to the secured value and individually sets them to the secured value.
- For each tag that the verify function actions, it makes an audible 'click'.

Right: The Security Blasting function
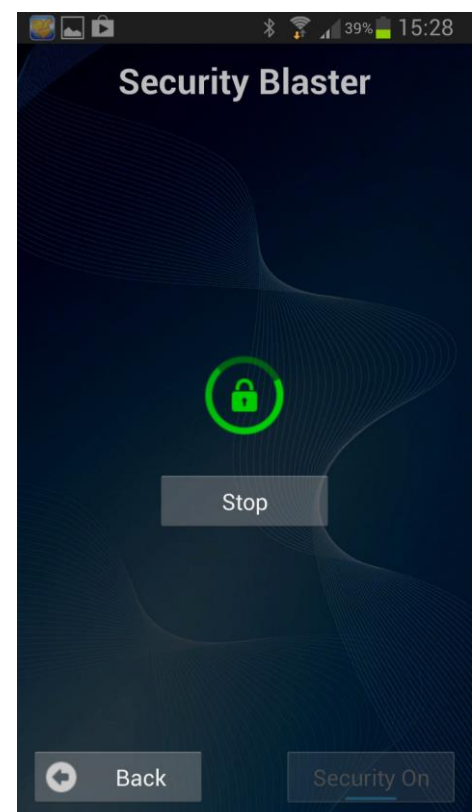
Alert for out of place items

When the Out of Place Item feature is enabled on the Mobile Scanning Unit, it will alert when it detects items that are outside of a designated collection range or location range, based on the collection code. This will allow library staff to find misplaced items within a range. The misplaced item will trigger a visual and audio alert.

You can enable the alert for out of place items by selecting the checkbox on the mobile handset called "Out of Place Alerts".

This feature can also be easily disabled (by unchecking the box) so that when scanning a large batch of recently returned items for example, the unit will not alert.
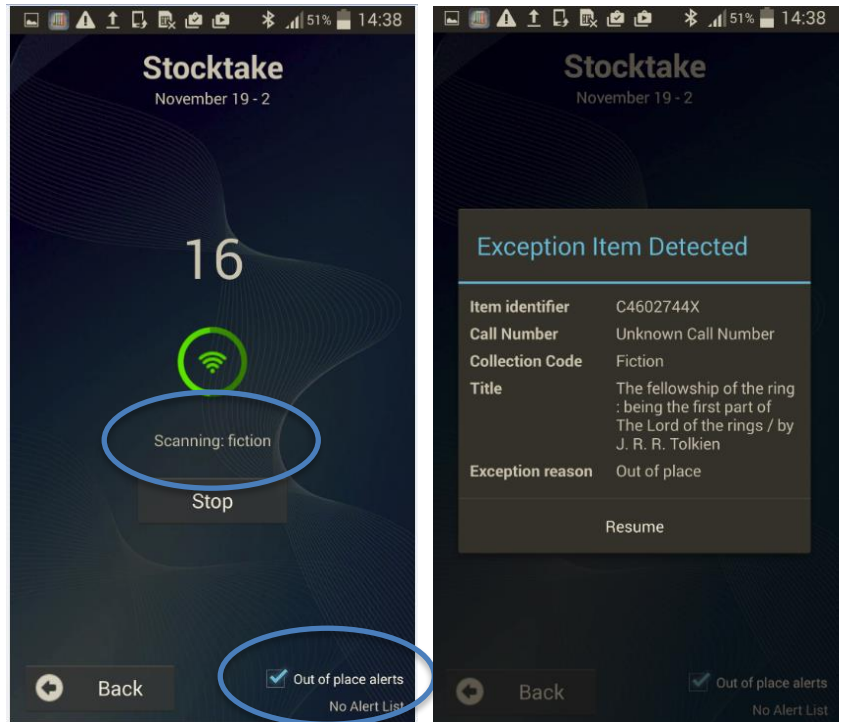
As you scan a selection of items the unit will display the collection code name of that section.

If an item is scanned that falls outside that collection code, the unit will alert – a voice alert will advise you of the name of the item and the details of the item will be displayed on the handset screen.

Safety instructions

- Do not expose the Mobile Scanning Unit or wand to liquids, rain, moisture or high temperatures, as this may damage the unit or cause electric shock to personnel.

- If the Mobile Scanning Unit or wand is repaired or serviced by unqualified personnel, their actions may cause electric shock to themselves or to others and will void the warranty.

- During periods of use it is recommended that users regularly swap the wand operating hand to avoid muscle fatigue. Regular periods of rest are encouraged.

- It's recommended that the wand be held at least 30cm away from the body during use.

Safety and regulation compliance

The FE Technologies Mobile Scanning Unit, inclusive of the Wand, complies with the following Australian and international standards.

As required by Australian Communications and Media Authority, our RFID products have Suppliers Declaration of Conformity notices under:

- Section 182 of the Radio communications Act 1992
- Section 134 of the Telecommunications Act 1997.

In addition, our RFID furniture complies with the following Australian and European standards:

- AS/NZS 4268:2003 Radio equipment and systems — Short range devices
    - Radio communications (Low Interference Potential Devices) Class Licence 2000
    - Radio Communications (Electromagnetic Radiation Human Exposure) Standard 2003
- ARPANSA Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3kHz to 300GHz (2002)
- EN 60950-1:2001
- EN 50364:2001 — health and safety requirements pursuant to FTEG 3(1)1 and R&TTE Article 3(1)a
- ETSI EN 301 489-3 V1.4.1 — protection requirements concerning electromagnetic compatibility 3(1)2 (Article 3(1)b)
- ETSI EN 300 330-2 V1.1.1 — measures for the efficient use of the radiofrequency spectrum pursuant to 3(2) (Article 3(2)).

FCC ID: 2AM6N-FE-MSU

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: Any changes or modifications not expressively approved by FE technologies could void the user's authority to operate this equipment

Support Options

For any queries or to log a support call, please contact
FE Technologies Customer Care Centre via one of the following forum:

Online Support

http://www.fetechgroup.com.au/online-support.html
Email: support@fetechgroup.com

Phone Support

1300 731 991 – Australia

0800 231977 – New Zealand

+85 2 3008 5757 – Hong Kong

+60 3 2788 4847 – Malaysia

+65 3158 0074 – Singapore

801 4033 – Brunei