ZITON LOOP INTERFACE

Survey Kit User Guide

Contents

1.0 INTRODUCTION

- This manual provides a guide to using the Ziton Radio Survey Kit.

- The survey kit should be used to determine the radio equipment requirements for the site to ensure that full radio coverage for the areas concerned is achieved with the required signal strengths for reliable communication.

- The survey will create the footprint for the installed system, specifying the final positions for the devices and radio infrastructure.

- The installed Ziton radio system comprises of a Radio Loop Interface capable of receiving information from a maximum of 31 radio devices. The radio devices include Multisensor detectors along with manual callpoints, sounders, sounder beacons and input/output units.

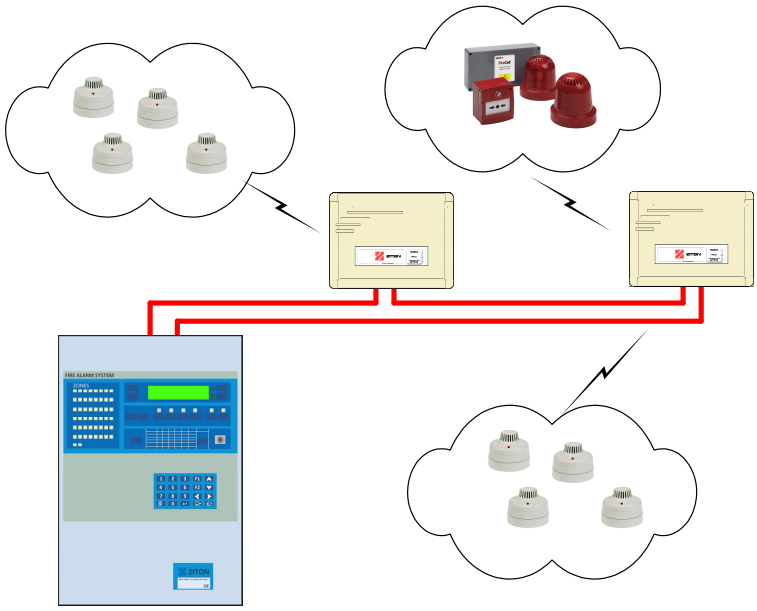
- The communication between devices to the interface is bi-directional and utilises the 868Mhz frequency.

- The Ziton Loop Interface is capable of connection to a ZP Protocol Fire Alarm Control Panel via its Loop in and Loop out connection terminals. The interface is addressed on the loop via its onboard, 8 way DIP switch. A total of 2 Loop Interfaces per loop can be fitted onto a Fire Alarm Control Panel.

- Each site will have a level of background noise that may affect the signals on site. Under EN54-25 (Fire detection and fire alarm systems Components using radio links), the minimum signal headroom must be checked to ensure reliable communication. This is essential to ensure immunity against site attenuation caused by environmental changes and other electrical equipment.

- It is recommended that the survey results, along with the background, are recorded for future reference. The survey kit automatically calculates the required headroom and then displays the results. The results are displayed by showing as a Pass or Fail.

System Overview



1.1 Identification of parts

- Device Survey Tool (1 per kit)

This part of the survey equipment is used to mimic the installed device's signal strength. The unit works in conjunction with the Signal Surveyor to mimic the achievable range between the device and Loop Interface position.

- Signal Surveyor (1 per kit)

This part of the survey equipment is used to mimic the installed Loop Interface to radio device's achievable range.

- Device Survey Pole (6 per Kit)

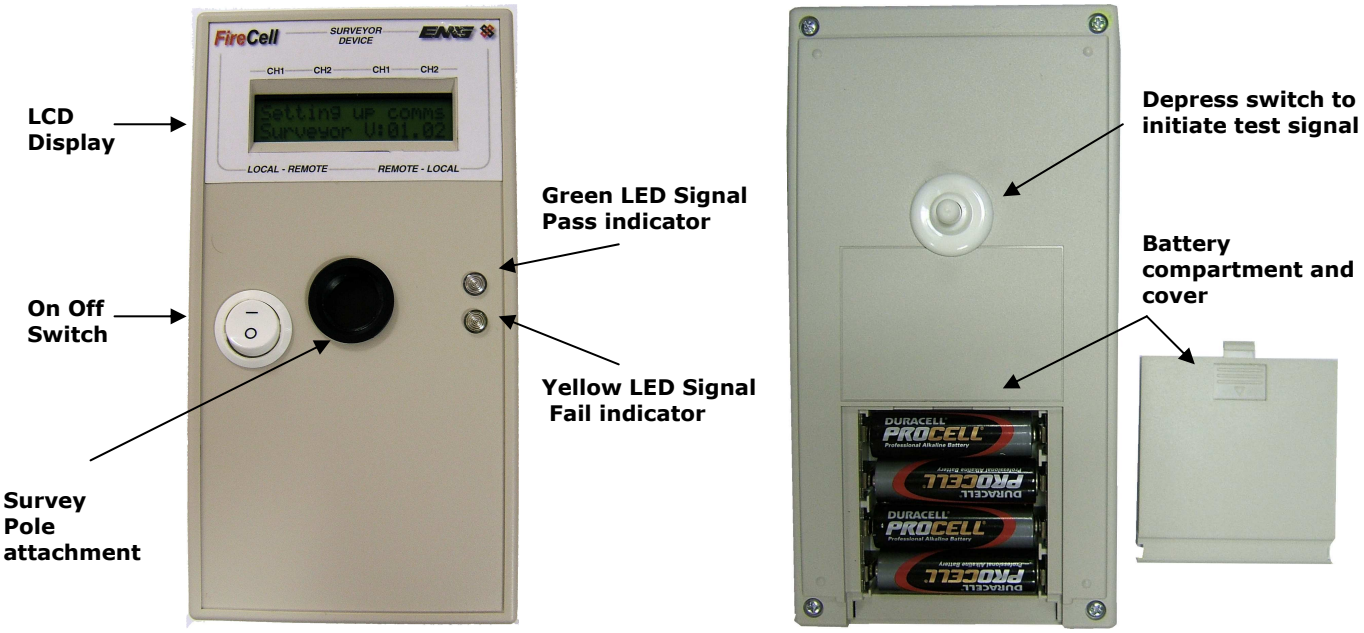
The survey poles are used for connection into the Device Survey Tool. This allows results to be taken from device locations which are out of reach.

- Signal Surveyor mains charger (1 per Kit)

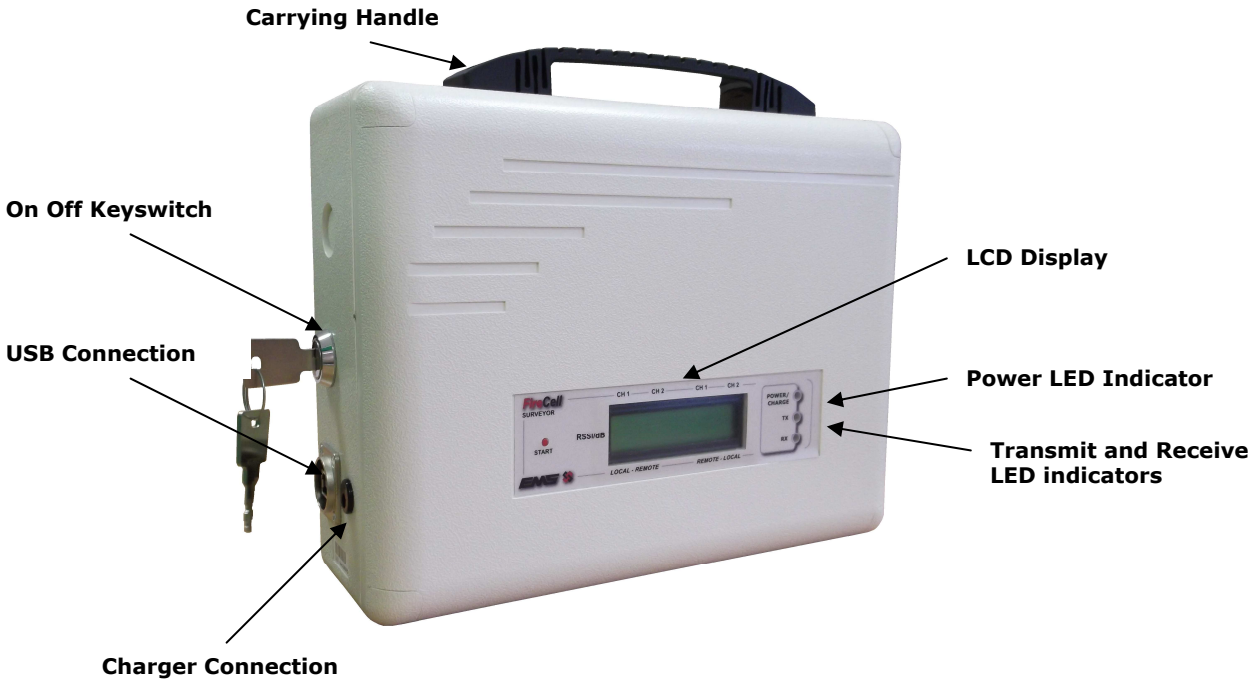
The mains charger is used for connection into the Signal Surveyor units for recharging the devices onboard battery.

1.2 Unit Features

Device Survey Tool



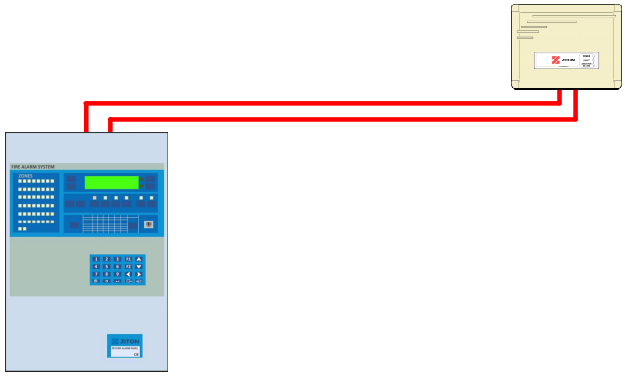
Signal Surveyor



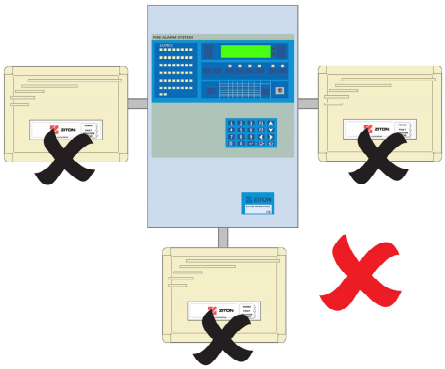
2.0 BEFORE YOU START THE SURVEY

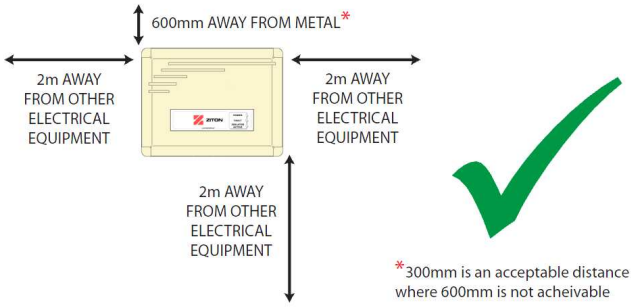
Before you start surveying the premises there are a number of points to take into consideration that will aid the survey. These are as follows:-

1. Identify where the Loop Interface is to be installed on the loop cabling. This is the starting point of the radio infrastructure and where you should position your Signal Surveyor.

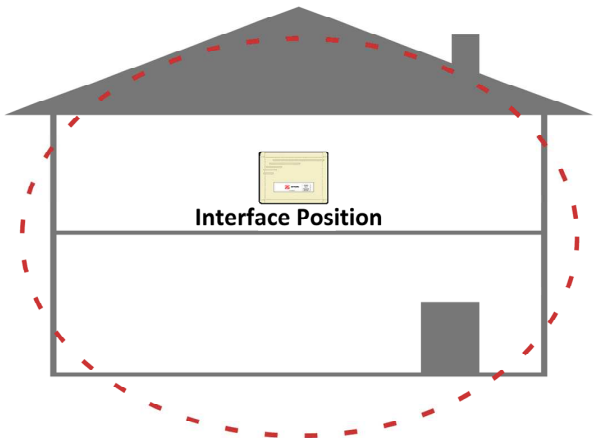


2. Remember to achieve maximum signal range, the Loop Interface should be installed 600mm away from metal objects and other equipment and 2 metres from electrical equipment. This allows free space around the Loop Interface's internal aerials.

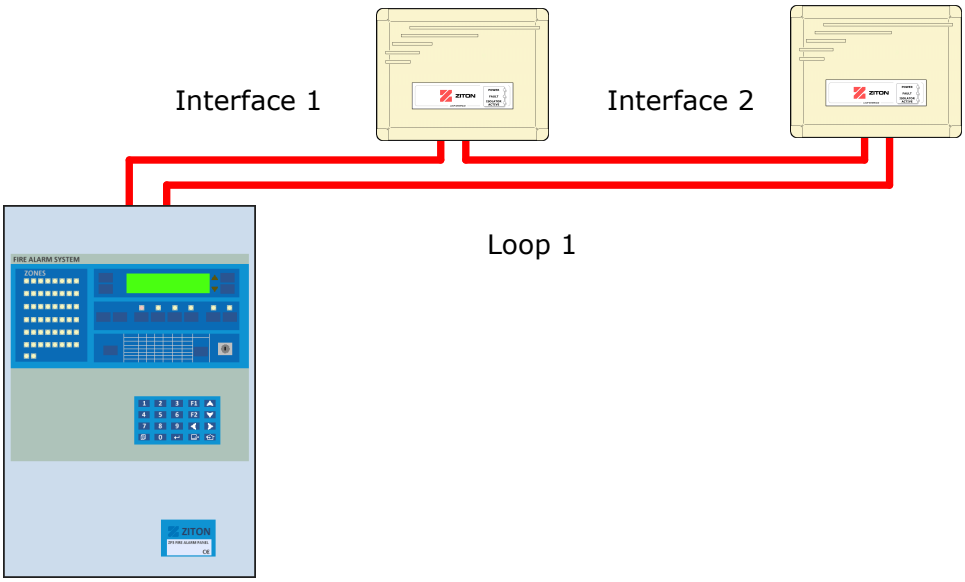




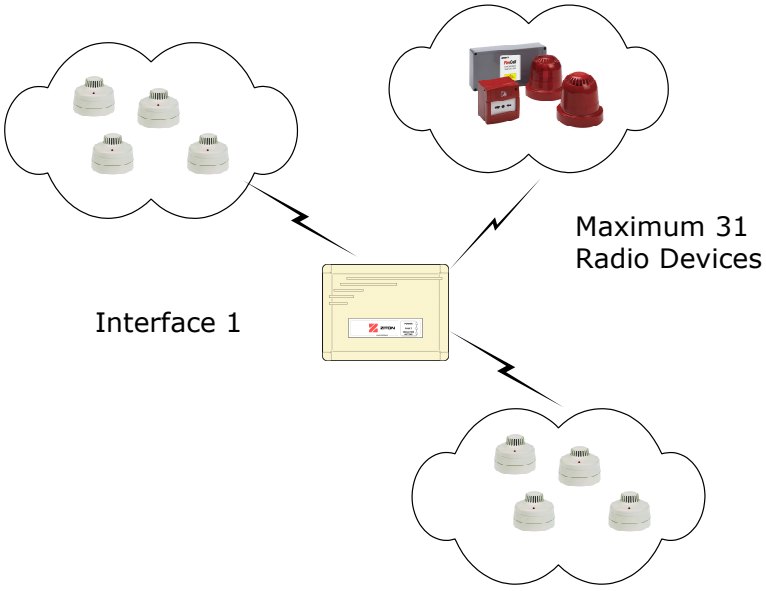
3. Consider positioning your Loop Interfaces centrally giving as much 360 degree coverage as possible.



4. Remember when choosing a location the Loop Interfaces require a loop in and out cable connection and a maximum of two interfaces per loop are allowed.



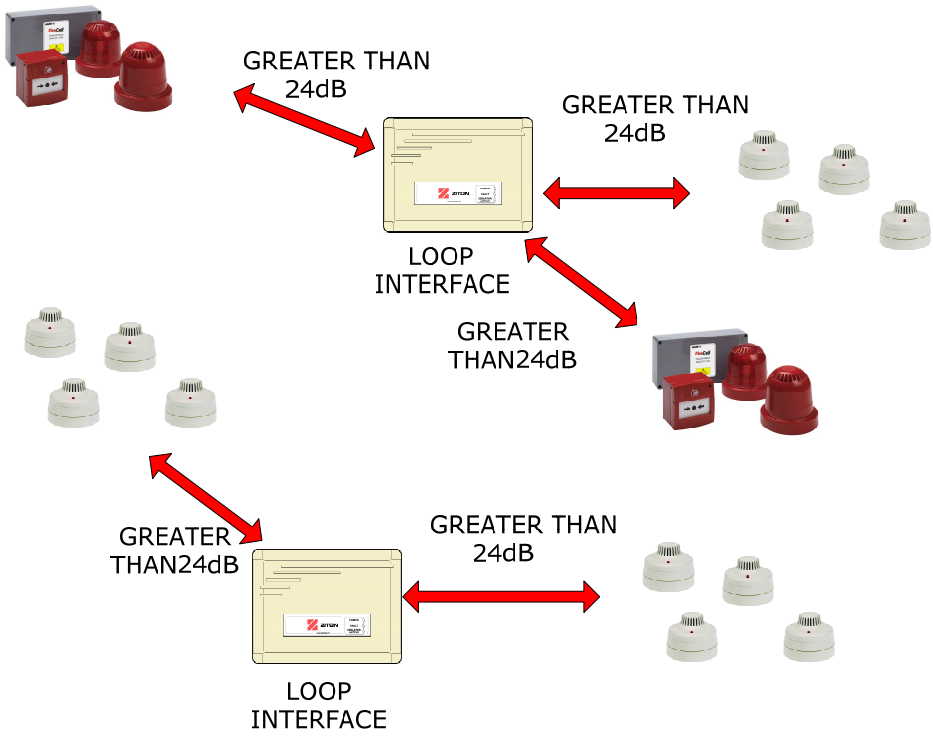
5. Remember the Loop Interfaces can have a maximum of 31 devices allocated to each individual Interface.



3.0 STEP BY STEP SURVEY GUIDE

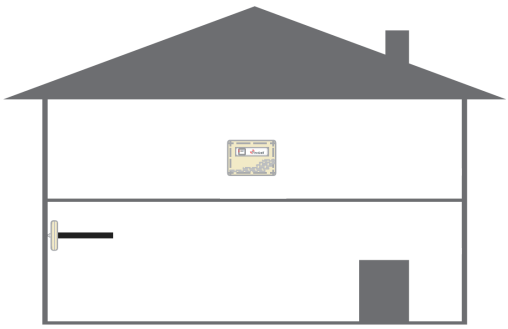
The step by step survey guide shown in this section should be used as a guideline only. A Quick Guide is also shown in section 6 of this manual. The main point to consider is to ensure that all field devices have signal strengths over 24dB.

All Devices have valid communication paths of over 24dB (Pass Result)



3.1 How to carry out the site survey

STEP 1 Position the surveyor at the proposed position of the Loop Interface.



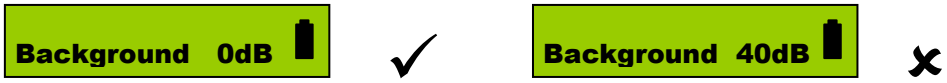
STEP 2 Switch on the surveyor using the keyswitch on the side of the unit.

After a few seconds the surveyor display will indicate the background signal level for that particular position. The level is displayed in dB and its range is 0-100. The signal should be as low as possible.

Background	Recommendation
21-100	High Level Must Re-position Unit
11-20	Medium Try Re-positioning Unit
0-10	Low Continue With Survey

Therefore it may be necessary to try multiple positions to obtain the lowest background level.

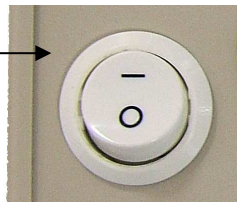
Example displays are shown below:-



STEP 3 The background levels should be noted for future reference. This can be recorded using the forms at the back of this manual.

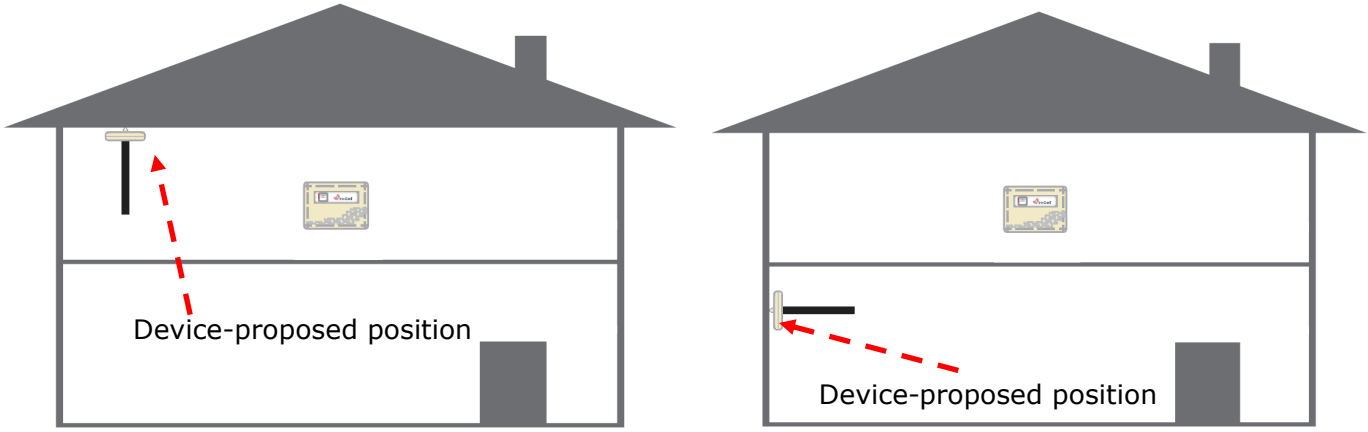
STEP 4 Switch the device survey tool on using the switch located on the front of the unit. The tool will then display that it is ready for use.

Press switch upwards as shown to switch unit on



STEP 5 The survey poles should be attached to the device survey tool so that tests can be carried out at ceiling level for detectors and against the wall for Callpoints and Sounders.

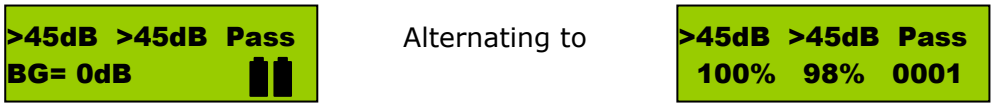
STEP 6 Present and hold the device survey tool against the wall or ceiling in the position of the proposed installed device.



STEP 7 The unit will beep to indicate a test has started. After a few seconds results will be displayed and a high pass or a flat fail tone will be heard.

LED signal indication is also shown on the device, a Green LED indicates a Pass and the Yellow LED indicates a Fail.

STEP 8 Remove the device survey tool from the survey position and record the displayed results. An example display is shown below:-



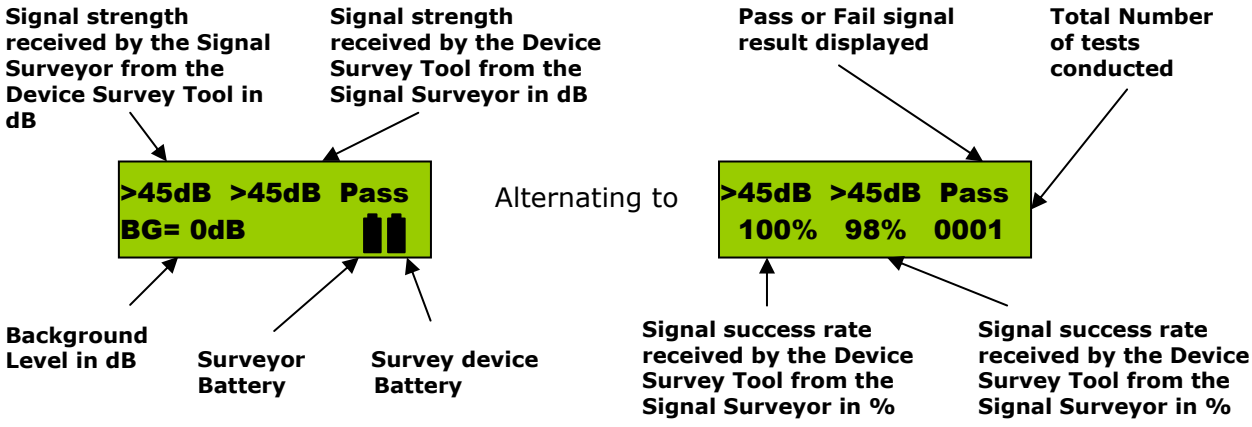
Note:- *A level of **24dB** or above is required as a pass result.*

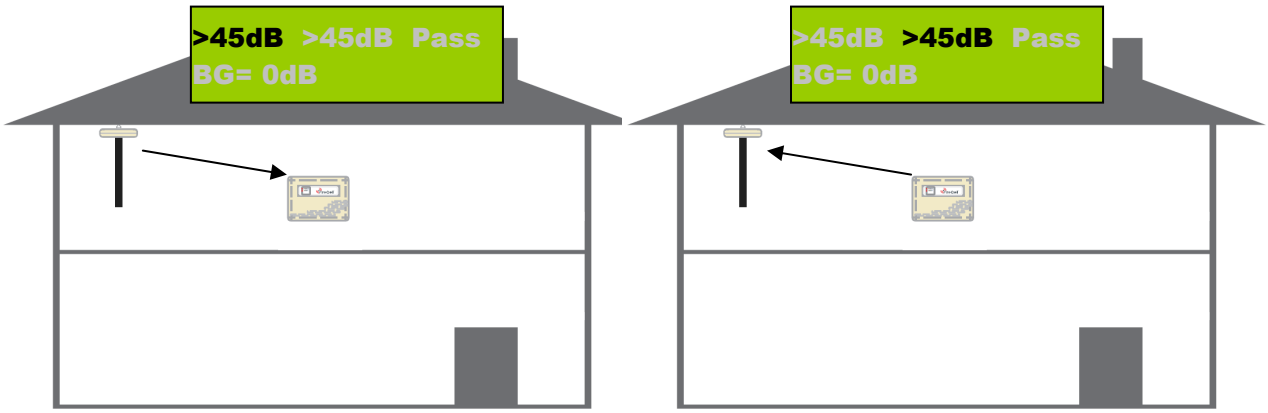
Note: The background levels are taken into account prior to displaying the events on the units.

If the required device position fails to pass the test then a further Loop Interface position will need to be found closer to the device and the survey repeated. Every device position should be recorded along with the received signal levels.

3.1.1 Results display explained

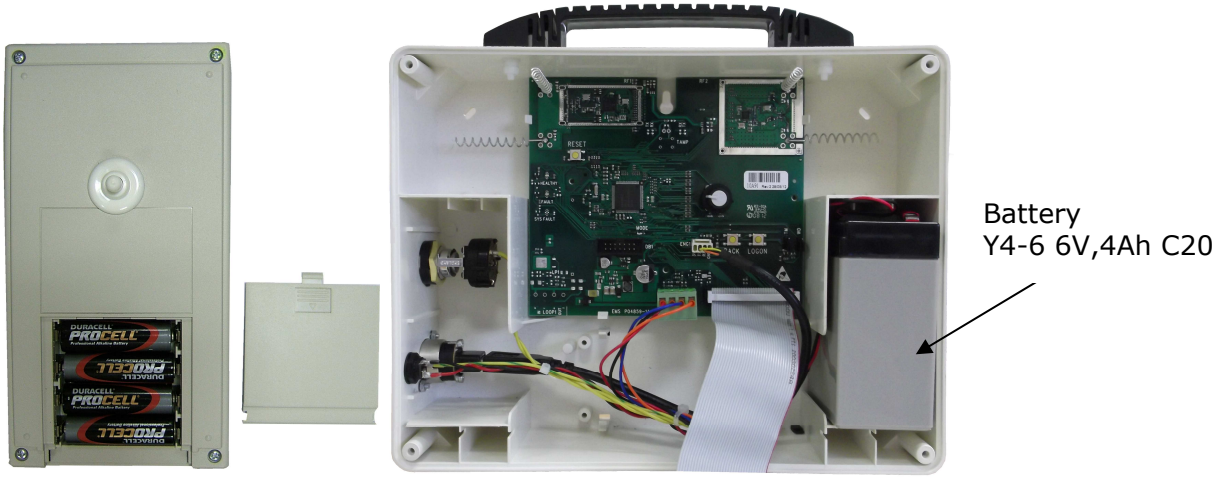
The figures shown are explained as follows:-





4.0 CHARGING AND BATTERY REPLACEMENT

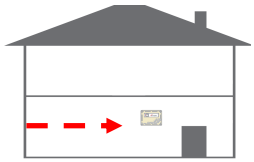
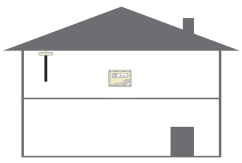
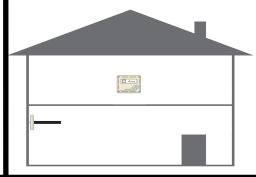
The surveyor unit is supplied with a mains charger. It can also be left connected if necessary during the survey process. The rated charging voltage is between 100–230Vac +/- 10%; 0.3A at 45-65Hz.
The surveyor unit can be charged with the keyswitch either in the on or off position. Caution: The keyswitch does not disconnect the unit from the mains supply. If the internal battery (shown below) should require replacement please ensure the correct polarity connections are used as marked on the battery (Y4-6 6V, 4Ah C20) red wire = positive, black wire = negative.
The Surveyor Device shown below requires 4 x AA (MN1500 LR6 1.5V) Batteries. Please ensure batteries are installed in the correct polarity as shown on the device case.



5.0 DIAGNOSTICS

The surveyor box is equipped with a USB port. This is used for factory programming and diagnostics purposes. The port can be used in conjunction with Windows Hyper Terminal used in capture mode. This can provide a real time text file of the survey and will output the test results every time a new position is tested. A USB lead and drivers would be required to use this feature. For further details please contact EMS technical support on 08712 710804.

6.0 QUICK SURVEY GUIDE

Step 1.	Position the surveyor in the proposed Loop Interface location.	
Step 2.	Turn on surveyor.	
Step 3.	Note background level displayed and record for future reference.	
Step 4.	Turn on the Device survey tool.	
Step 5.	Position the Device survey tool against the wall or ceiling in the positions of the proposed radio devices.	
Step 6.	Record signal levels displayed.	
Step 7.	Repeat steps 5-6 for all device positions associated with the Loop Interface position.	
Step 8.	If there are multiple Loop Interface positions on site required repeat steps 1-7 for each Interface.	

Please remember when carrying out the survey:-

Note 1: A maximum of 31 devices can be allocated to a single Interface.
Note 2: A maximum of 2 Loop Interfaces per fire alarm panel loop.

7.0 SURVEY RECORD FORM

Site _____

Date _____

Loop Interface Number _____ Background _____

Devices	Signal Level dB		%		Pass	Fail	Comments
1							
2							
3							
4							
5							
6							
7							
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