

## Surveying Guide

**Introduction:**

The objective of the survey is to determine whether the Reach XP95 Loop Interface Module (HUB) and wireless devices will be in range of each other.

This means considering where the Apollo XP95 protocol wired loop can be broken and the Reach Loop Interface Module (HUB) can be mounted. Once determined, each ideal location of wireless fire devices can be surveyed.

If link quality at a potential device location is not good enough, this will help you to either:

- Determine an alternative device location nearby where signal strength may be better.
- Determine a new location for the HUB that may better serve the device locations.
- Determine whether multiple HUB's are required.

**Survey Kit Contents****1. Mock Loop Interface Module (HUB)**

The bridge between the Apollo wired system and the wireless system. To be placed where a real device would be located at the start of the survey.

**2. Mock Detector + Pole Attachment**

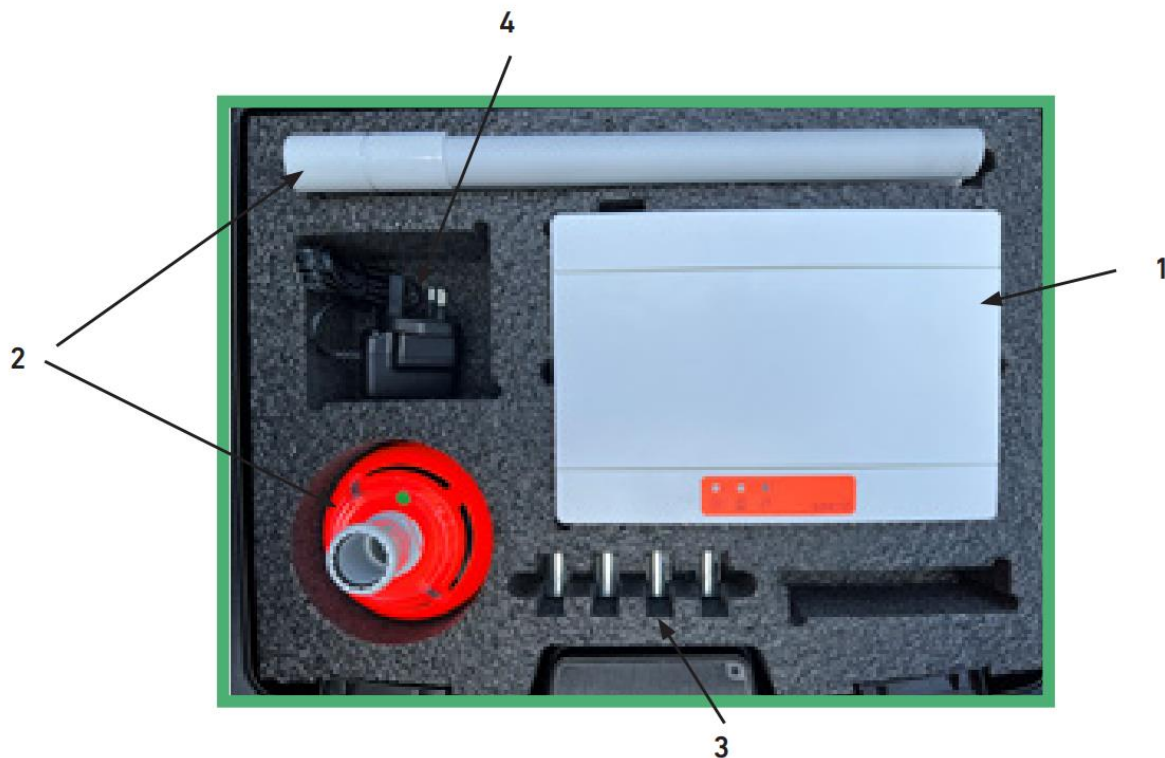
To be used to determine suitable locations for product to be installed. The bi-colour LED will flash to indicate signal strength.

**3. CR123 Varta Lithium-Ion Batteries (x6)**

2x for detectors, 4x for HUB (included)

**4. AC/DC Power Adapter**

Global adaptors included. HUB can be powered by mains.



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**Preparing the Survey Kit**

To prepare the survey kit, first remove the front cover of the mock HUB device.

1. Insert 4x of the CR123 batteries (included) as shown. Polarity (+/-) is indicated on the PCBA.
2. Next, flick the power switch to the 'ON' position. The screen should show the Reach logo.
3. Press the Enter button to continue.



The HUB's embedded display should illuminate as it powers on.

The survey will continue on the HUB's built-in display and buttons.

The user-interface consists of:

- Up/Down
- Left/Right
- Back
- Enter

**Main Menu**

From the Survey Kit Main Menu, the following options are presented:

**Survey**

- This is used for the point-to-point survey. We will do this second.

**(Background) Scan**

- This should be performed first, before the point-to-point survey.
- It will let you know which RF channels are the most congested or noisy so that you can avoid them.

**Settings**

- Only used to pair/un-pair the mock detector device.



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**Scan**

First run a scan of the area.

1. Select 'Scan' on the Main Menu. The scan will take up to 4 mins to complete.
2. Result will show in order of preference.
3. Record the results on survey sheet (available on [apollo-fire.co.uk](http://apollo-fire.co.uk)).
4. Repeat at every HUB location to get the best result

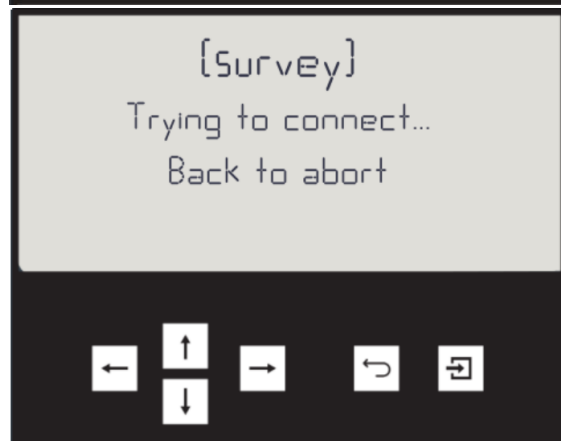
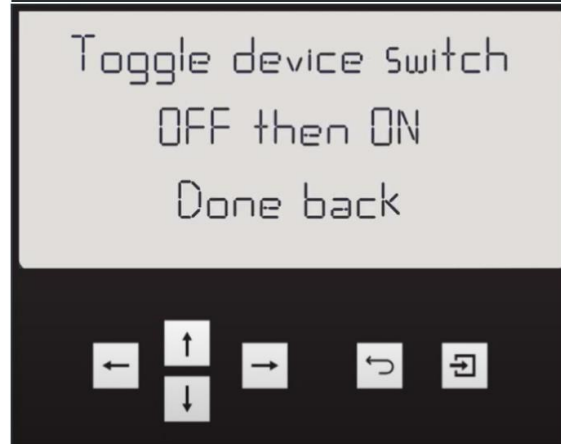
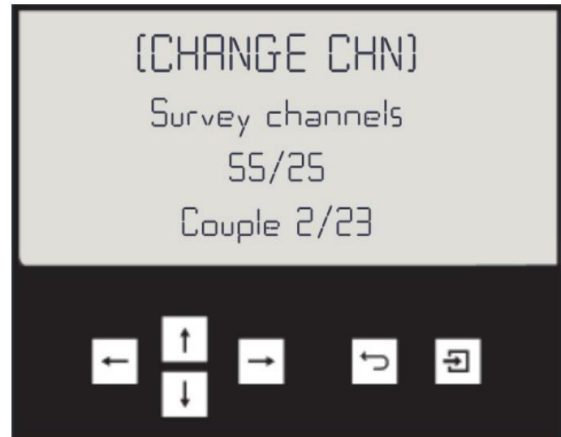
**Survey**

The point-to-point survey is used to determine the expected signal strength of each Reach device at the potential install locations.

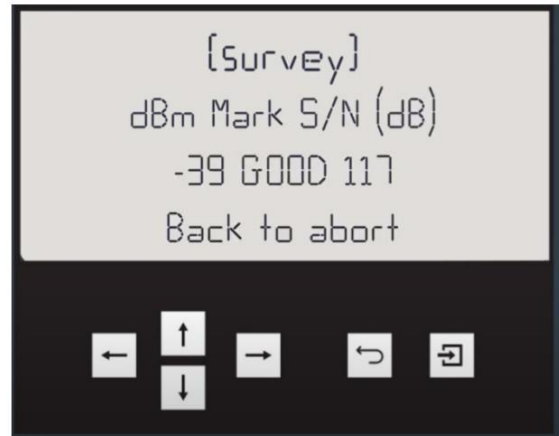
1. Scroll down to 'Edit Chn' and select, this will let you select the preferred channels to use based of the scan result.

2. Return to the 'Survey' menu and select Start Survey.

3. Turn on the survey device, once powered up select 'Done'.



4. You are ready to survey.



The LED readouts indicate suitability for a product to be installed in the location being tested.

Positive results = Green LED quick flash  
Negative results = Red LED long flash

Results are often followed by a 1 second blank. The exception is the extremely bad result, to indicate range limit. Once this is exceeded, the LED will no longer flash until it comes back in-range.



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The signal quality LED table shows the dBm ranges for each flash type.

*Ampac does not recommend marginal signal quality as a passing value, as this will result in variable connection strength, requiring repeated transmission and degraded battery life.*

Results of each survey point should be recorded in the Reach Survey Sheet (MAN3195, a copy is available from the Ampac website). It is important to keep this for the site installation.

Once you have finished surveying, remember to remove the batteries from the detector device and switch the HUB power-switch to off to prevent discharging the system.

Signal Quality LED Table				
Rssi (dBm)		LED Activity + Colour	Signal Quality	Ok to Install?
Min.	Max			
0	-65	● ● ● --	Excellent	Yes
-66	-75	● ● ● --	Good	
-76	-80	● ● ● --	Sufficient	
-81	-85	--- ---	Marginal	No
-86	-90	--- ---	Bad	
-91	-95	--- ---	Very bad	
-96	-100	--- ---	Extremely bad	
-101	-105	--- ---	Range limit	