Sontay®

RF-SSK
Site Survey Kit Individual Units

Features:

- Proven 802.15.4 low power network
- Encrypted data transmission

Benefit:

- Helps to lower installation costs, as it will determine the placement of sensors and routers when it come to be main installation

Technical Overview

Wireless devices, by their very nature, mean there is always an initial element of uncertainty as to whether devices will be able to communicate reliably. Several factors affect this ability, such as frequency, interference and building materials.

The SonNet SSK (Site Survey Kit) eliminates this uncertainty by allowing a survey of the building using the same power levels and frequency channel the final system will use. Intuitive and simple to use, a plan of devices, routers and receiver can be quickly established to give full confidence in the final installed system, while at the same time allowing a concise list of exactly the right number of device types to be compiled.

Specification:

Radio Output:

Frequency	2.4GHz	
16 channels, automatically selected		
Direct-sequence spread spectrum		
Compliance	IEEE 802.15.4-2006	

Data Encryption   AES 128

Power Output   +10dBm

Aerial Characteristics:

    Space Housings

Gain	1.2dBi
VSWR	1.5:1

    Others

Gain	2.0dBi
VSWR	<2:1

Battery type (rechargeable):

RF-RXSS	Internal 1Vdc NiMH
RF-HHT	Internal 3.6Vdc NiMH
RF-PS-500	3.7V Lithium Polymer 1080,Ah
RF-TS-900	3.7V Lithium Polymer 1080,Ah

Operating:

Temperature	-10 to +50°C
RH	0 to 90%, non-condensing

Country of origin   UK

CE

The products referred to in this data sheet meet the requirements of EU Directive 2004/108/E

Part Codes:

RF-RXSS

    Site survey receiver

RF-HTT

    Hand-held tool

RF-PS-500

    Battery powered radio site survey router

RF-TS-900

    Battery powered radio site survey node

How It Works:

The site survey kit consists of a receiver which is used in conjunction with the RF-PS-500 site survey routers, RF-HHT hand-held monitor and RF-TS-900 nodes.

Routers are used to route signals from battery powered nodes and other routers to the receiver module, where the signal strength of a direct path is not sufficient for reliable communications.

Data is transmitted back to the receiver at configurable time intervals, or on a configurable change in measured value. Each sensor retains these configurations if the battery becomes discharged or requires replacement.

The all devices from the SSK automatically selects which of the 16 transmission channels available gives the best radio network performance, taking into account both signal strength and interference levels from adjacent channels and equipment (such as Wi-Fi etc.)

The SSK hand-held monitor, nodes and routers automatically find the best path back to the receiver, which may be directly to the receiver or via "parent" routers.

NB Unlike an RF-RX20 or RF-RX40 system receiver, the SSK receiver has no analogue outputs. Nodes are fitted with temperature sensors whereas the routers are not.

Installation & Battery Charging:

RF-RXSS:

1. Remove all packaging from the SSK receiver.

2. Mount the SSK receiver in the same position as the system receiver will be mounted during the final installation.

3. Ensure the antenna is positioned in a vertical alignment.

4. Ensure that the internal battery is fully charged.

5. To power the SSK receiver, turn the On/Off switch on the housing cover so that it points downwards towards the charging socket. To switch off, turn the On/Off switch on the housing cover so that it points upwards away from the charging socket.

To charge the battery in an SSK receiver, connect the correct charger to the socket mounted underneath the On/Off switch. The status LED on the charger will show red until the battery is fully charged, when the status LED will turn green.

Note that when charging SSK batteries, the battery under charge is disconnected from the rest of the device, and therefore that device will not function until charging is complete.

RF-HHT:

1. Remove all packaging from the SSK hand-held monitor

2. To switch on the RF-HHT, press and hold the OK key for 2 seconds. To switch off, press and hold the OK key for 2 seconds.

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Installation & Battery Charging (continued):

3. To help maintain battery life, the RF-HHT will automatically switch itself OFF after 2 minutes if left unattended or no keypad key is depressed.

To charge the battery in the RF-HHT, connect the correct charger to the socket located on the bottom of the housing. The status LED visible through the RF-HHT keypad will show orange until the battery is fully charged, when the status LED will go out.

RF-PS-500:

1. Remove all packaging from the SSK router.

2. Enable power by switching the On/Off switch on the side of the unit to On.

3. Temporarily position the SSK router in a location that will give good link qualities between an SSK node and the SSK router. (See SSK quick start guide or user manual)

To charge the battery in an SSK router, connect the correct charger to the socket on the side of the housing. The status LED on the charger will show red until the battery is fully charged, when the status LED will turn green.

Note that when charging the SSK router battery, the battery under charge is disconnected from the rest of the device, and therefore that device will not function until charging is complete.

RF-TS-900:

1. Remove all packaging from the SSK node.

2. Ensure the battery is fully charged.

3. Enable power by setting the rocker switch mounted on the backplate to ON.

4. Mount the SSK node in a required position (normally dictated by a drawing or site specification), taking care **not** to site the sensor;

- In direct sunlight or near a source of heat
- On a cold or hot outside wall, where conducted or radiant heat may affect the accuracy
- Behind any obstruction likely to impede the radio signal (for example, a filing cabinet)

Take care to mount the SSK node in the correct orientation, with the tamperproof screw at the bottom, to allow free flow of air over the sensor element. Ensure that the louvers in the sensor housing are clear and free from obstruction.

To charge the battery in an SSK node, connect the correct charger to the socket on the back plate. The status LED on the charger will show red until the battery is fully charged, when the status LED will turn green.

Note that when charging the SSK node battery, the battery under charge is disconnected from the rest of the device, and therefore that device will not function until charging is complete.

Battery Fitting & Replacement:

NB It is recommended that only suitably trained personnel are used to replace the battery in the SSK devices.

When a battery is replaced, observe the correct polarity. **Fitting the battery incorrectly may result in permanent damage**.

The current battery levels of an SSK node, router and received can be monitored using the RS-HHT.

NB NiMH batteries are rechargeable, but care must be taken to use **ONLY THE CHARGER SUPPLIED IN THE SSK BY SONTAY**. Replacements or spares should be stored in a clean, cool (not exceeding +30°C), dry and ventilated area.

Disposal of Batteries - Warning! Fire, Explosion and Burn Hazard.
Do not short-circuit, crush, disassemble heat above 100°C (212°F), incinerate, or expose the battery contents to water. Do not solder directly to the cell.
All batteries must be disposed of in accordance with EC Directive 2006/66/EC, amended by EU Directive 2008/12/EC.