

# INSTALLATION NOTES



## NESS RADIO SIREN

RSI Radio Siren

RSS Radio Satellite



### FEATURES

- Siren only or Satellite Siren models
- Wireless Trigger from Alarm Panel
- Program up to 8 radio devices including:
  - Ness Radio Siren Transmitter
  - Radio Keys
  - Radio PIRs
  - Radio Reed Switches
  - Radio Smoke Detectors
- Two siren sounds, FIRE and ALARM
- Loud 116dB Siren Volume
- Plug Pack Powered
- Fully Tamper Protected

### RSS SATELLITE SIREN also features

- Backup battery
- External siren and strobe outputs
- Hardwired tamper input

The Ness Radio Siren is a unique self-contained radio operated miniature internal siren which can be used as a WIRELESS REMOTE SIREN option for alarm control panels or as a STANDALONE SIREN operated by Radio Keys or other Ness radio devices.

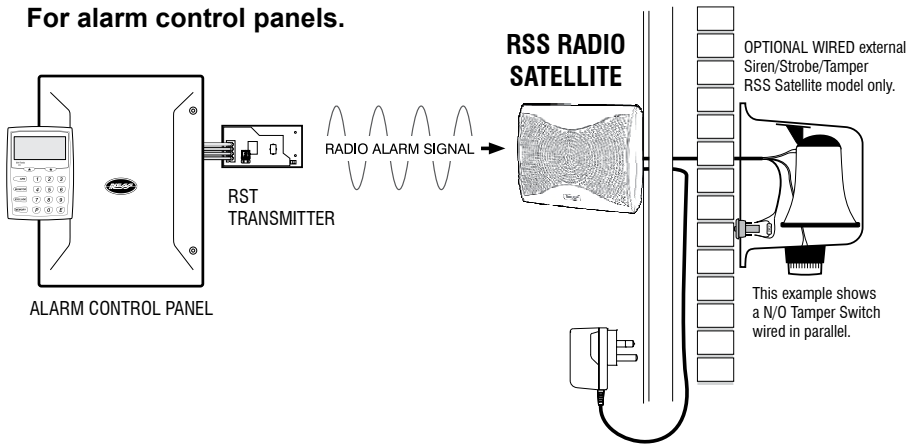
The Ness Radio Satellite can even drive an optional EXTERNAL SIREN & STROBE for truly wireless sirens - inside and out.

Many and varied applications: Wireless EVAC Siren / WARNING siren / DELIVERY DOOR warning / extension ALARM siren / MACHINERY warning / and anywhere else you might need a remote siren.

# APPLICATION EXAMPLES

## WIRELESS SIREN OR SATELLITE SIREN

For alarm control panels.



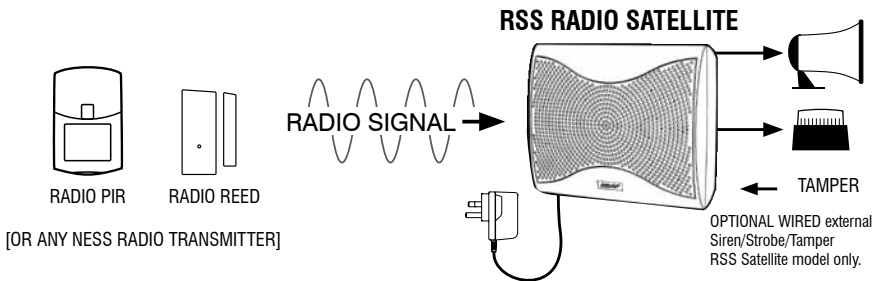
## STANDALONE PANIC SIREN

Triggered by a Radio Key



## STANDALONE SATELLITE SIREN

Triggered by a Radio PIR or Radio Reed



## OPERATION

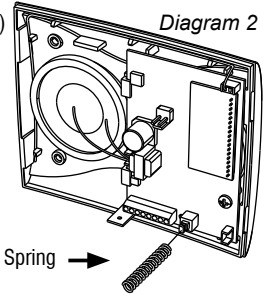
The Ness Radio Siren is designed to be installed indoors as a wireless internal siren. This provides the convenience of an extension siren without the trouble of cabling between the control panel and the siren.

For an external siren option the RSS Satellite model has provision for an optional wired horn speaker and strobe light to be cabled off the internal unit.

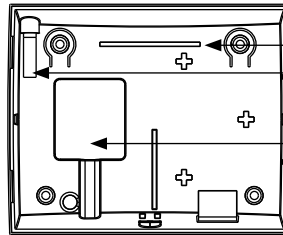
The Radio Siren can program up to 8 radio devices, meaning it can receive signals from more than one control panel or from other Ness radio devices such as Radio Keys, Radio Smoke Detectors and Radio PIRs.

Both models are powered by a 17VAC plug pack and the RSS Satellite model has an internal backup battery for independent operation in case of mains failure.

COVER (Rear view) *Diagram 2*



BASE

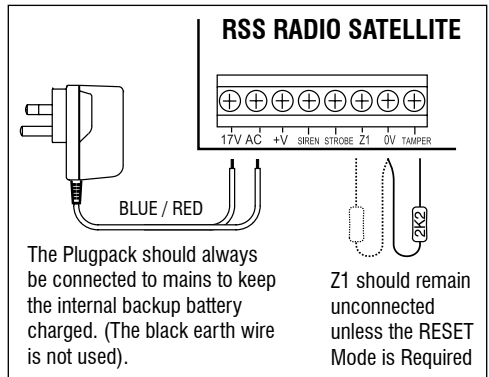
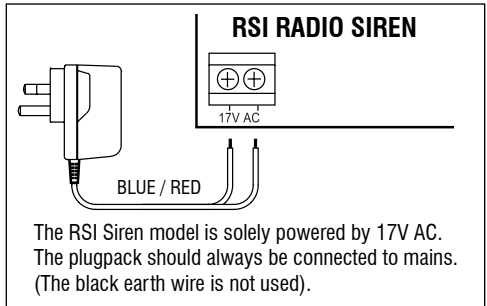


*Diagram 1*

## INSTALLATION

- Mark a level reference line on the wall in the position you will be installing the Ness Radio Siren. See *Diagram 1*.
- Line-up the reference mark with the Level Reference slot in the base plastics.
- Secure the base to the wall using the mounting hardware provided.
- Attach the provided spring to the tamper switch. See *Diagram 2*.
- Feed the plug pack cable through the cable entry hole in the base and connect the two 17V AC wires to the 17V AC terminals on the Radio Siren board. Polarity is not observed. The earth wire is not used.
- Insert the battery in the battery holder in the base plastics and plug the battery leads into the Battery terminal on the Radio Siren board. (RSS Satellite model only).
- The Radio Siren will be in program mode as soon as power is applied with the tamper switch unsealed. At this stage, if you need to program radio devices, follow the programming instructions in this manual.
- Once programming is complete, attach the Radio Siren cover to the base and secure it with the screw provided. Double check to ensure the plug pack is turned on.

## TERMINALS



## PLUG PACK

The plug pack supplied must always be plugged into a mains power outlet.

A/ The **RSI Siren** is solely powered by the plug pack.

B/ The **RSS Satellite** uses mains power for normal operation and to float charge the backup battery.

## LED OPERATION

The LED is visible on the front of the Radio Siren externally and internally when the cover is removed.

One Flash every 2 sec	OPERATING MODE
Double Flash every 2 sec	PROGRAM MODE
Continuous Flash	LOW BATTERY*

\* RSS Satellite model only

## ONBOARD TAMPER

The onboard tamper switch is supplied with a through-body spring mechanism for tamper detection of cover removal and back housing tamper.

## ONBOARD SIREN

The onboard siren can output either an Alarm sound or Fire sound depending on the type of signal it receives from the transmitting device.

## EXTERNAL ANTENNA

The Radio Siren has an internal antenna which should provide excellent radio range in most cases.

An external antenna is also supplied and can be fitted in cases where local radio conditions may be reducing or interfering with the radio signal.

Please note that if the RF conditions are particularly adverse, the external antenna may not improve reception.

## INPUTS (RSS Satellite model only)

■ **EXTERNAL TAMPER:** The 24hr Tamper input terminals are provided for connection of an external tamper if using the external siren option. The Tamper input must be terminated with a 2k2 End Of Line resistor even if unused.

■ **ZONE:** The Zone input should normally be left unconnected unless you need require the Strobe output to operate in Reset mode, (See RESET MODE).

## OUTPUTS (RSS Satellite model only)

■ **SIREN:** The external siren output can drive 2 x 8 Ohm horn speakers. The siren sound can be either the Alarm Siren or Fire Siren depending on the type of signal received. The siren timer is fixed at 5 minutes.

■ **STROBE:** The external strobe output can drive 1 x standard mini strobe light.

The strobe output turns on when a Strobe On message is received and turns off when it receives a Strobe Off message or after maximum run time. The strobe will also turn on when the siren turns on even without a Strobe On message, but in this case the strobe turns off with the siren. Maximum run time is 11 hours or 1 hour if mains power is off.

*Note: In Strobe Mode, the strobe output is designed to drive a strobe light only. However the output can be configured as a Reset output if needed, see below.*

■ **RESET MODE:** To convert the strobe output into a Reset output, connect a 2k2 EOL resistor on the Z1 input (across Z1 & 0V).

The strobe output will now reset after 5 minutes, and the output voltage will be suitable to drive a device such as a piezo screamer.

This option is useful in cases where you need an additional wired internal screamer or even a screamer/strobe combination on the same output.

## BATTERY (RSS Satellite model only)

If mains power is off, the battery can power the siren and strobe for one alarm activation.

The battery is tested under load every hour. Low battery condition is indicated by the LED flashing continuously.

Note that when mains is restored after a power failure, the LED will continue to flash for several hours until the battery reaches full charge.

## PROGRAMMING

Programming of transmitters to the Radio Siren is a simple two-step process.

### 1. ENTER PROGRAM MODE

**To enter Program Mode, power-up the Radio Siren with the internal tamper unsealed.** The Radio Siren will then be in learn mode for 30 seconds or until programmed. Program Mode is indicated by the LED double flashing.

**i** Once in program mode, resealing the tamper will exit program mode immediately.

### 2. LEARNING TRANSMITTERS

Send a Learn Message from the radio device/transmitter that will operate the Radio Siren.

The siren will chirp twice + double-chirp to acknowledge it has successfully learned the transmitter's code.

As soon as the radio device is programmed, the Radio Siren will automatically exit program mode.

## MESSAGE TYPES

The internal siren (and RSS model external siren output) can output different siren sounds depending on the type of message received.

The Ness RST Radio Siren Transmitter can send all message types understood by the Radio Sirens.

## PROGRAMMING ADDITIONAL DEVICES

To program a second device, remove power from the Radio Siren (mains and battery) then power-up and repeat Step 2 above.

Up to 8 devices can be programmed.

Programming a 9th device will erase the 1st device so that there are no more than 8 devices programmed.

## TO ERASE DEVICES

To erase all devices, enter Program Mode and press the OFF button of a Radio Key 5 times. (Must be a valid programmed radio key).

### Ness Radio Transmitters

#### HOW TO SEND A LEARN MESSAGE

Radio Keys: Press and hold the Panic button for at least 10 seconds.

Devices with removable batteries: Insert the battery.

**i** Make sure the Radio Siren is still in Program Mode when you send it a Learn message.

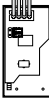


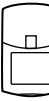

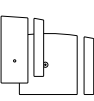
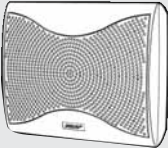
Other Ness transmitters may send a different set of alarms, see the table below.

**i** Normally only the RST Transmitter should be programmed to the Radio Siren.

(Program other devices such as Radio PIRs or Radio Keys for special purposes such as stand-alone use.)

## TRANSMITTER MESSAGE TYPES

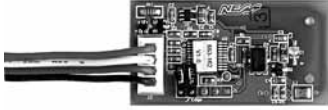
## RADIO SIREN ACTION

 RST TRANSMITTER	 RK4 RADIO KEY	 RK3+1 RADIO KEY	 LUX RADIO PIR	 RSM RADIO SMOKE	 RR1/RR2 RADIO REED	
SIREN	ON	ON	ALARM	ALARM	ALARM	SIREN ALARM
OFF	OFF	OFF	-	-	RESTORE	ALARM OFF
FIRE	PANIC	PANIC	-	-	TAMPER	FIRE ALARM
STROBE ON	AUX#	-	-	-	-	STROBE ON*
STROBE OFF	-	-	-	-	-	STROBE OFF*

\* The RK4 AUX button also resets Siren.

\* RSS Satellite model only

# RADIO SIREN TRANSMITTER



The Ness Radio Siren Transmitter (RST) is purpose designed to send a variety of alarm signals to the RSI and RSS Radio Sirens.

The RST is a miniature transmitter board with flying leads fitted allowing it to be easily connected to a control panel.

## INPUTS

12V +/- wires: Constant 12VDC input.

Input 1 - White: Sends ON signal or AUX signal depending on the setting of LINK 1.

Input 2 - Blue: Sends PANIC signal or ON signal depending on the setting of LINK 1.

## LEARN MESSAGE

The RST sends a learn message when power is applied.

## LED INDICATOR

SINGLE FLASH	Alarm Transmitted
THREE FLASHES	Learn Signal Sent
CONTINUOUS FLASH	Error Condition

## PROGRAMMING LINKS

The RST has two programming links.

**LINK 1** determines the type of signal sent by inputs 1 and 2.

LINK 1 Alarm Type Setting	LINK 1 POSITION	
	OFF (DEFAULT)	ON
ACTION	TYPE OF MESSAGE SENT	
ALARM INPUT 1 (White)	Strobe	Siren
ALARM INPUT 2 (Blue)	Siren	Fire
RESTORE INPUT 1	Off	Off
RESTORE INPUT 2	Off	Off

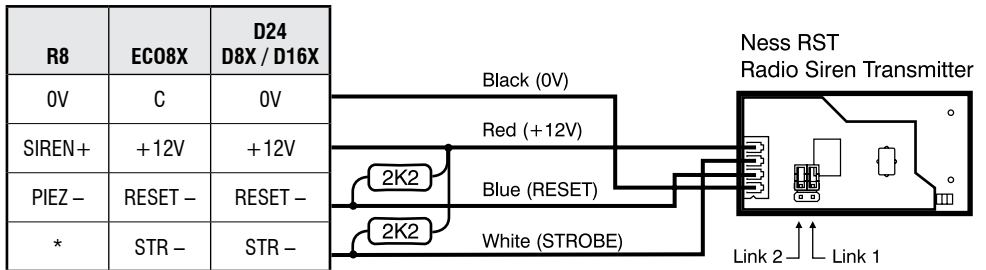
**LINK 2** sets both inputs for positive or negative trigger.

Link OFF: Negative Trigger (Factory Default). Each input can be held high or floating. Pull low to trigger.

Link ON: Positive Trigger. Each input must be held low by an external 2k2 resistor. Pull high to trigger.

## RST CONNECTION EXAMPLE FOR MOST NESS CONTROL PANELS

Link 1 is off for negative trigger



\* STROBE wire is not used on the R8 panel. The RSS strobe output will still turn on but it will reset after 5 minutes along with the siren output.

A 2K2 resistor is required across +12V and RESET- if a 12V Piezo Siren is also connected to the RESET- output. The resistor can be omitted if the RST is the only device on the RESET- output.

## SPECIFICATIONS

<b>Ness Radio Siren - RSI/RSS models</b>	
NUMBER OF RADIO DEVICES	8 max.
RADIO COMPATIBILITY	All Ness transmitters
ONBOARD TAMPER SWITCH	Front and rear protection
POWER SUPPLY	17VAC 300mA plug pack
ONBOARD SIREN	Twin Piezo 116bB
FUSES	500mA Auto reset electronic fuse for onboard siren
SIREN DURATION	5 minutes
RADIO FREQUENCY	303.85MHz or 868.35MHz depending on region
DIMENSIONS	141 x 114 x 45mm
<b>Ness Radio Siren - RSS Satellite model only</b>	
EXTERNAL INPUTS	Tamper Input - 2k2 EOL Z1 input 2k2 - enables Reset Mode
EXTERNAL OUTPUTS	Siren Output - 1 x 4 Ohm or 2 x 8 Ohm horn speakers max. Duration 5 minutes  Strobe output - 1 x Mini Strobe Light max. Duration 11 hours or 1 hour if mains power is off
STROBE OUTPUT DURATION	<i>If the RST is wired to send a Strobe message</i> 11 hours or 1 hour if mains power is off <i>If the RST wired not to send a Strobe message</i> 5 minutes <i>If the Strobe Output is converted into a Reset Output</i> 5 minutes
FUSES	2A Auto reset electronic fuse for external Siren & Strobe outputs
BACKUP BATTERY	12V 0.8Ah Sealed Lead Acid
DYNAMIC BATTERY TEST	Every hour and on receipt of any radio message

<b>Ness Radio Siren Transmitter</b>	
INPUTS	Alarm Input 1, Alarm Input 2 on flying leads
MESSAGE TYPES	Siren / Strobe / Fire / Off
TRANSMISSION TIMEOUT	2 seconds per message
INDICATION	LED indicates transmission
OPERATING VOLTAGE	4.5V ~ 16V DC
CURRENT DRAW	Standby 150uA, Transmit 10mA
RADIO FREQUENCY	303.85MHz or 868.35MHz depending on region
DIMENSIONS	45 x 24 x 12mm



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## NESS RADIO SIREN INSTALLATION NOTES Revision 1.3

Document Part Number 890-368

For Ness Radio Siren models:  
106-080 RSI Siren 303.85MHz  
106-081 RSS Satellite 303.85MHz  
106-084 RST Transmitter 303.85MHz  
106-082 RSI Siren 868.35MHz  
106-083 RSS Satellite 868.35MHz  
106-087 RST Transmitter 868.35MHz

Ness Corporation manufacturing processes are accredited to ISO9001 quality standards and all possible care and diligence has been applied during manufacture to ensure the reliable operation of this product. However there are various external factors that may impede or restrict the operation of this product in accordance with the product's specification.

These factors include, but are not limited to:

1. Erratic or reduced radio range. Ness radio products are sophisticated low power devices, however the presence of in-band radio signals, high power transmissions or interference caused by electrical appliances such as wireless routers, cordless phones, computers, TVs and other electronic devices may reduce the range performance. While such occurrences are unusual, they are possible. In this case it may be necessary to either increase the physical separation between the Ness receiver and other devices or if possible change the radio frequency or channel of the other devices.
2. Unauthorised tampering, physical damage, electrical interruptions such as mains failure, electrical spikes or lightning.

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