HFW-SIM-01 + HFC-WSR-03
HFW-SIM-01 + HFC-SBR-23-03
SAGITTARIUS TYPE B WALL SOUNDER
SAGITTARIUS TYPE B WALL SOUNDER + VISUAL ALARM DEVICE

OVERVIEW

This device is an assembly of an **HFW-SIM-01** Sagittarius system interface module and a **HFC-WSR-03** conventional sounder / **HFC-SBR-23-03** conventional sounder + visual alarm device. Sounder's output is activated following an alarm condition of the Sagittarius system.

INSTALLATION - IMPORTANT NOTES

- The device must be installed following your national and/or international codes of practice and standards: check them before performing the installation of this device.
- Test this device after installation.

INSTALLATION

1) Detach the front operating section from the sounder back box (→ **SOUNDER OPENING PROCEDURE**).
2) Extract the **HFW-SIM-01** from the sounder's back box (→ **MODULE'S EXTRACTION**).
3) Set the **HFW-SIM-01**'s link switch to ON.
4) Extract the **HFW-SIM-01**'s battery covers.
5) Insert both batteries into their **HFW-SIM-01** holders, oriented as per polarity marks.
6) Link the **HFW-SIM-01** device to the Sagittarius system (→ **LINKING**).
7) Reinstall the battery covers.
8) Check the wireless link quality of the **HFW-SIM-01** positioned in the final installation location (→ **WIRELESS LINK QUALITY CHECK**).
9) Install the sealing pad if the sounder is to be installed outdoors and/or in damp environments (**not EN 54-3 approved**) (→ **OUTDOORS AND DAMP ENVIRONMENTS INSTALLATION**).
10) Fix the sounder back box to the wall on the final installation location (→ **WALL INSTALLATION**).
11) Reinstall the **HFW-SIM-01** into the sounder's back box (→ **MODULE'S INSTALLATION**).
12) Set sounder's tone and volume (→ **OUTPUT TONE SETTING** , →**OUTPUT VOLUME SETTING**).
13) Reinstall the front operating section onto the sounder back box (→ **SOUNDER CLOSING PROCEDURE**).
14) Test the **HFW-SIM-01 + HFC-WSR-03** / **HFC-SBR-23-03** to check if it works properly (→ **TESTING**).

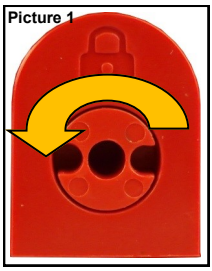
SOUNDER OPENING PROCEDURE

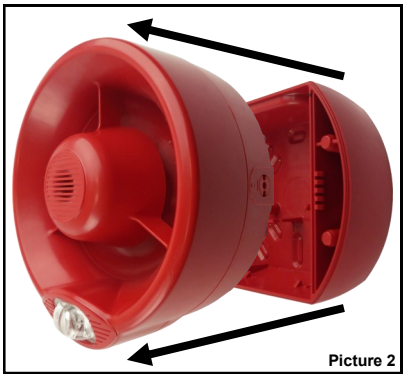
In order to detach the upper sounder body from the base:

1) Insert the pins of the compatible key into the holes of one of the two side locking mechanisms.
2) Turn the key 90° to the left whilst applying light pressure.

When assembling or removing the front operating section of the sounder to/from the back box be careful to ensure the interconnection block is not twisted which may cause damage. Perform such operations without using excessive force.

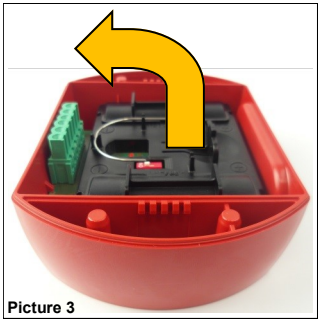
3) Repeat this step for the second side locking mechanism; the locking mechanism appears as in picture 1 when in the open position (flush).
4) Detach the sounder body from the base by pulling gently to separate (picture 2).


Picture 1


Picture 2

MODULE'S EXTRACTION

1) Gently release the locking catch allowing the module to lift and rotate to release from the side wall.
2) Remove the module.


Picture 3

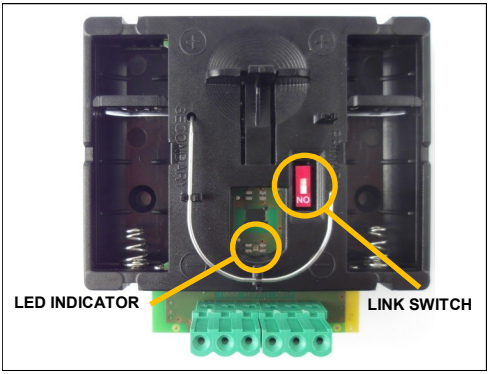
LINKING

The translator / expander module is waiting to achieve a wireless child device.

1) Move the link switch's cursor from ON to the opposite side (BLANK side); **HFW-SIM-01** indicates "Linking to the system".

2) If linking outcome is ok: **HFW-SIM-01** stops indicating "Linking to the system".

3) If linking outcome is not ok: perform the **LINKING RECOVERY** procedure.



Picture 4

LINKING RECOVERY

In case something goes wrong with the linking operation:

1) Take out both batteries from their holders.

2) Move alternatively the link switch to ON / BLANK five times.

3) Move the link switch to ON.

4) Reinsert both batteries into their holders, oriented as per polarity marks.

5) Perform the **LINKING** procedure.

During all the duration of the linking phase, the module must be only a few inches away from the translator / expander module you are linking to.

MODULE'S STATUS	GREEN LED	RED LED
Power up	1 second green, then 0.5 second red for 4 times	
Linking to the system	Blinking until linking is completed	
Normal condition	-	-
Main battery fault	-	0.5 second on and 10 seconds off (orange tonality)
Secondary battery fault	0.5 second on and 10 seconds off	-
Both batteries fault	-	0.5 second on and 10 seconds off (orange tonality)
Lost link with wire to wireless translator / wireless expander	0.5 second green and red (amber) and 1 second off	

Table 1

WIRELESS LINK QUALITY CHECK

It is possible to check wireless link quality between the sounder module and its linked-to translator or expander in this way:

1) Move the link switch to the ON position.

2) Module's LED indicator will start blinking according to the following table:

LINK QUALITY	EVALUATION	DEVICE'S INDICATION
No connection	Fail	Two red blinks
Link margin is less than 10 dB	Poor	One red blink
Robust communication with link margin from 10 dB to 20 dB	Good	One green blink
Robust communication with link margin over 20 dB	Excellent	Two green blinks

3)

Table 2

Move the link switch to position BLANK again; *device will NOT WORK if the link switch is on position ON !*

OUTDOORS AND DAMP ENVIRONMENTS INSTALLATION

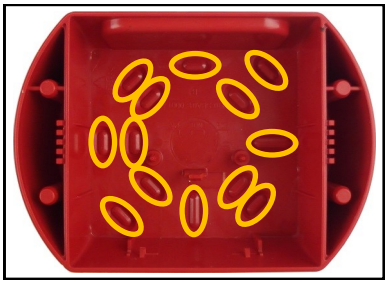
When installing the sounder outdoors or in a damp environment, carefully apply the self-adhesive sealing pad to the back of the sounder base (picture 5).

Suitable, but not EN 54-3 approved for outdoor use.

WALL INSTALLATION

Fix the sounder base to the wall; the prepared location options for the fixing screws are highlighted in picture 6.

Picture 5

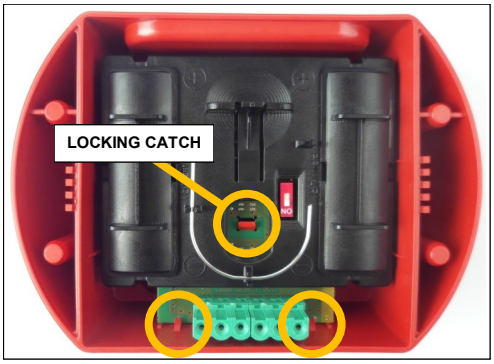


Picture 6

MODULE'S INSTALLATION

1) Insert the terminal edge of the module between the securing points on the wall of the back box.

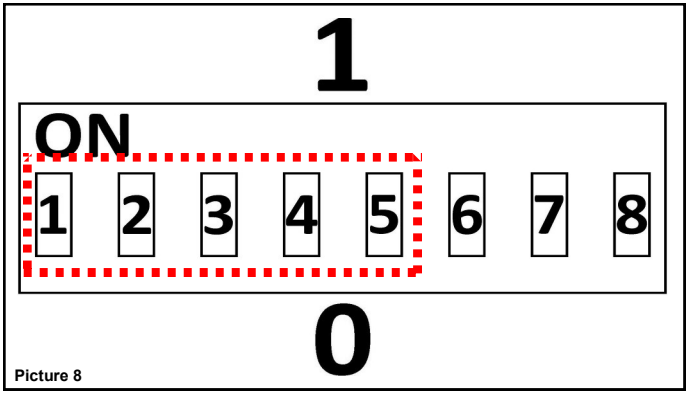
2) Gently push down the module body so that the locking catch engages fully to hold the PCB in place. Check that it feels secure.



Picture 7

OUTPUT TONE SETTING

Use the DIP switch on the back of the sounder body to select the tone required; for this function the first five switches are used, highlighted in picture 8.



Picture 8

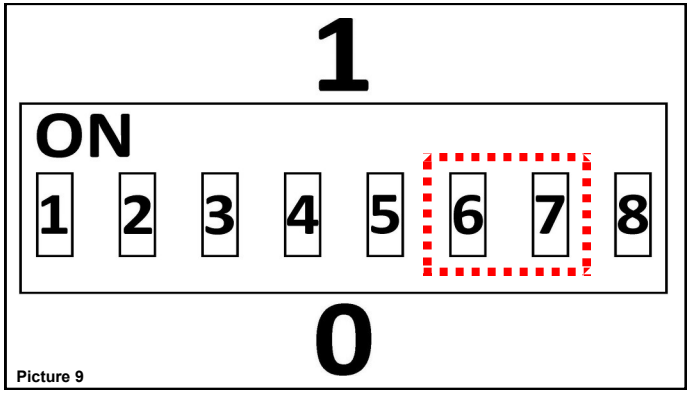
The switches positioned upwards acquire value “1”; on the other hand, if positioned downwards acquire value “0”.

1) From the →**TONE SET** table (table 4) select the output alarm tone triggered when the sounder is activated.

2) Refer to the corresponding line of the “DIP configuration” column to select the five switch selection settings.

OUTPUT VOLUME SETTING

Use the DIP switch at the back of the sounder body to select the output volume; in particular, switches 6 and 7, highlighted in picture 9, are used.



Picture 9

The switches positioned upwards acquire value “1”; on the other hand, if positioned downwards acquire value “0”.

1) Select the alarm volume required when the sounder is activated (table 3).

2) Refer to the corresponding line of the “DIP configuration” column to set the two volume selection switches.

Tone volume	DIP configuration - switch 6 and 7	dB(A) evaluation	Notes
HIGH	11	100 dB(A) +/- 3	All tones
MEDIUM HIGH	01		
MEDIUM LOW	10		
LOW	00		

Table 3

TONE SET

Tone number	Tone designation	Tone description	DIP switch configuration: 1,2,3,4 e 5
1 *	**Warble Tone**	**800Hz for 500ms, then 1000Hz for 500ms**	**11101**
2 *	**Continuous tone**	**970Hz continuous tone**	**01011**
3 *	**Slow Whoop (Dutch)**	**500-1200Hz for 3500ms, then off for 500ms**	**10101**
4 *	**German DIN tone**	**1200-500Hz swept every 1000ms (1Hz)**	**00111**
5	Alternate HF slow sweep	2350-2900Hz swept every 333ms (3Hz)	10010
6	Alternative warble	800Hz for 250ms, then 960Hz for 250ms	11110
7	Alternative warble	500Hz for 250ms, then 600Hz for 250ms	11100
8	Analogue sweep tone	500-600Hz swept every 500ms (2Hz)	10100
9	Australian Alert (intermittent tone)	970Hz for 625ms, then OFF for 625ms	10001
10	Australian Evac (slow whoop)	500-1200Hz sweep for 3750ms, then OFF for 250ms	10110
11	Alternative Warble	990Hz for 250ms, then 665Hz for 250ms	00001
12	French tone AFNOR	554Hz for 100ms, then 440Hz for 400ms	00101
13	HF Back up interrupted tone	2800Hz for 1s, then OFF for 1s	11011
14	HF Back up interrupted tone – fast	2800Hz for 150ms, then OFF for 150ms	11001
15	HF Continuous	2800Hz continuous	01001
16	Interrupted tone	800Hz for 500ms,then OFF for 500ms	01111
17	Interrupted tone medium	1000Hz for 250ms, then OFF for 250ms	01101
18	ISO 8201 LF BS5839 Pt 1 1988	970Hz for 500ms, then OFF for 500ms	01110
19	ISO 8201 HF	2850Hz for 500ms, then OFF for 500ms	01100
20	LF Back up Alarm	800Hz for 150ms, then OFF for 150ms	11010
21	LF Buzz	800-950Hz swept every 9ms	01010
22	LF Continuous tone BS5839	800Hz continuous	11000
23	Silent	No sound	11111
24	Siren 2 way ramp (long)	500-1200Hz rising for 3000ms, then falling for 3000ms	00000
25	Siren 2 way ramp (short)	500-1200Hz rising for 250ms, then falling for 250ms	00010
26	Swedish all clear signal	660Hz continuous	00100
27	Swedish Fire signal	660Hz for 150ms, then OFF for 150ms	00110
28	Sweep tone (1 Hz)	800-900Hz swept every 1000ms	10111
29	Sweep tone (3 Hz)	800-970Hz swept every 333ms (3Hz)	10011
30	Sweep tone (9 Hz)	800-970Hz swept every 111ms (9Hz)	01000
31	US Temporal Pattern HF	(2900Hz for 500ms ON, 500ms OFF) x3, then 1500ms OFF	00011
32	LF Sweep (Cranford tone)	800-1000Hz swept every 500ms (2Hz)	10000

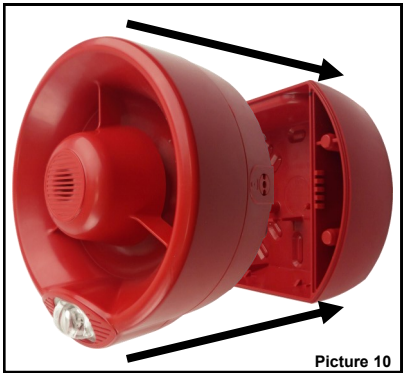
*** EN 54-3 certified tones**

Table 4

SOUNDER CLOSING PROCEDURE

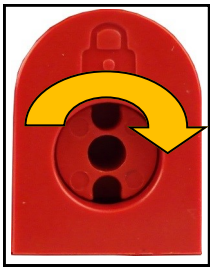
In order to assemble the sounder body to the base:

1) Assemble the sounder body to the base using gentle pressure (picture 10).
2) Insert the pins of the compatible key into the holes of one of the two side locking mechanisms.
3) Turn the key 90° to the right.
4) Repeat this step for the second side locking mechanism, starting from point 2; the locking mechanism appears as in picture 11 once closed (recessed).
5) To secure use the retaining screws, using the location holes on both sides of the base (picture 12).

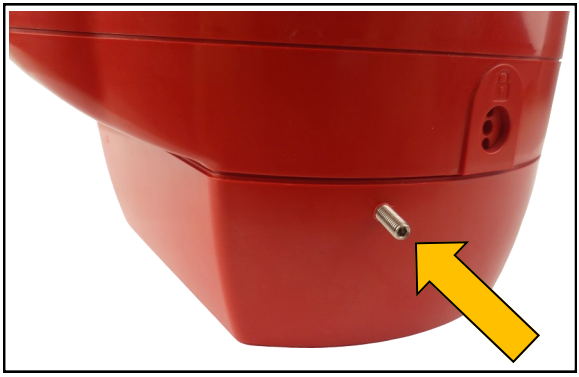


Picture 10

When assembling or removing the front operating section of the sounder to/from the back box be careful to ensure the interconnection block is not twisted which may cause damage. Perform such operations without using excessive force.



Picture 11



Picture 12

TAMPERING DETECTION AND NOTIFICATION

Tampering attempts are detected by a pair of switches (one on the front, the other on the back of the module); once detected, a tampering event message is broadcasted to the system.

TESTING

1) Activate the fire security system's alarm condition.

2) Check the **HFW-SIM-01 + HFC-WSR-03 / HFW-SIM-01 + HFC-SBR-23-03** output activation.

3) Press the SILENCE SOUNDERS button (or equivalent) on the control panel.

4) Reset the system from the control panel.

All devices must be tested after installation and, successively, on a periodic basis.

BATTERY REPLACEMENT

When the translator module indicates a low battery condition on a child device, batteries must be replaced.

When a low battery condition is indicated, both batteries must be changed altogether.

During this procedure the linking switch must NOT be touched at all !

1) Detach the front operating section from the sounder back box.

2) Extract the **HFW-SIM-01** from the sounder's back box.

3) Extract the **HFW-SIM-01**'s battery covers.

4) Extract the batteries.

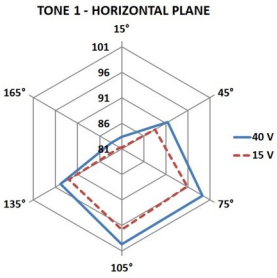
5) Insert the new batteries into their holders, oriented as per polarity marks.

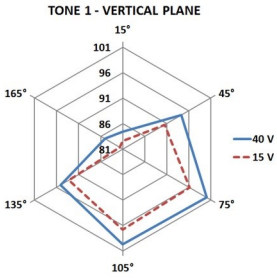
6) Reinstall the battery covers.

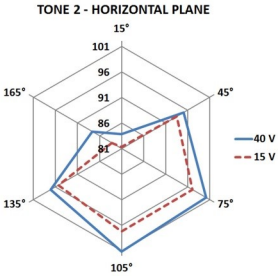
7) Reinstall the **HFW-SIM-01** into the sounder's back box.

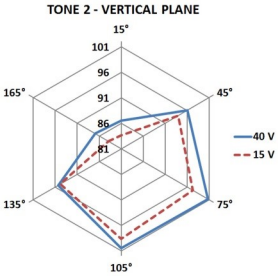
8) Reinstall the front operating section onto the sounder back box.

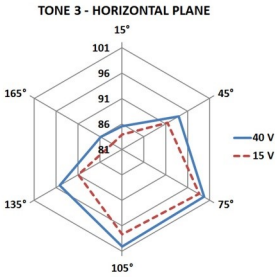
9) Test the **HFW-SIM-01 + HFC-WSR-03 / HFW-SIM-01 + HFC-SBR-23-03** to check if it works properly.

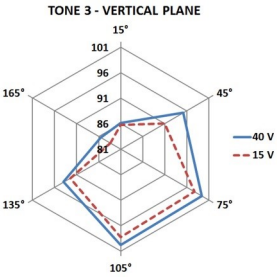

TONE 1 - HORIZONTAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V

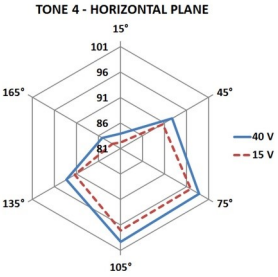

TONE 1 - VERTICAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V

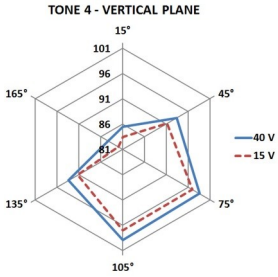

TONE 2 - HORIZONTAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V


TONE 2 - VERTICAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V


TONE 3 - HORIZONTAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V


TONE 3 - VERTICAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V


TONE 4 - HORIZONTAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V


TONE 4 - VERTICAL PLANE
15°
101
96
91
86
81
45°
75°
105°
135°
165°
40 V
15 V

Picture 13

TECHNICAL SPECIFICATIONS (HFW-SIM-01)	
Communication range with the translator / expander	200 m (in open space)
Operating frequency	868 MHz
Operating frequency channels	7
Battery voltage range	3 V
Batteries type	2 X CR123A (3V)
Radiated power	14 dBm (25 mW)
Batteries lifespan	**>3 years** (with parent expander's check-up period default setting); remains operational for up to **60 days** from first appearance of the low battery warning
Parent expander's check-up period	7 seconds (default setting)

TECHNICAL SPECIFICATIONS (HFW-SIM-01 + HFC-WSR-03)	
Max current draw (at 3 V)	50 mA
Acoustic emission frequency range. Valid for all tones	440 - 2900 Hz
Maximum acoustic intensity, volume set to HIGH. Valid for all tones	100 dB(A) ± 3
Tolerated temperature range	-10 °C / +55 °C
Maximum tolerated humidity	85% RH (without condensation)
Height	185 mm
Diameter	130 mm
Weight	350 g
IP rating (EN 54-3 certified)	33C Type B
IP rating (not certified) *	65

*** Independently assessed and certified to IPX5 (not part of the current EN54-3 certification).**

TECHNICAL SPECIFICATIONS (HFW-SIM-01 + CWS100-AV)	
Max current draw (at 3 V)	260 mA
Acoustic emission frequency range. Valid for all tones	440 - 2900 Hz
Maximum acoustic intensity, volume set to HIGH. Valid for all tones	100 dB(A) ± 3
Visual Alarm Device (VAD) frequency	0.5 Hz
VAD flash coverage	W - 2.5 - 7 (122.5 m^3)
Tolerated temperature range	-10 °C / +55 °C
Maximum tolerated humidity	85% RH (without condensation)
Height (base included)	192 mm
Diameter	130 mm
Weight	380 g
IP rating (EN 54-3 certified)	33C Type B
IP rating (not certified) *	65

WARNINGS AND LIMITATIONS

Our devices use high quality electronic components and plastic materials that are highly resistant to environmental deterioration. However, after 10 years of continuous operation, it is advisable to replace the devices in order to minimize the risk of reduced performance caused by external factors. Ensure that this device is only used with compatible control panels. Detection systems must be checked, serviced and maintained on a regular basis to confirm correct operation.
Smoke detectors may respond differently to various kinds of smoke particles, thus application advice should be sought for special risks. Detectors cannot respond correctly if barriers exist between them and the fire location and may be affected by special environmental conditions.
Refer to and follow national codes of practice and other internationally recognized fire engineering standards.
Appropriate risk assessment should be carried out initially to determine correct design criteria and updated periodically.

WARRANTY

All devices are supplied with the benefit of a limited 3 year warranty relating to faulty materials or manufacturing defects, effective from the production date indicated on each product.
This warranty is invalidated by mechanical or electrical damage caused in the field by incorrect handling or usage.
Product must be returned via your authorized supplier for repair or replacement together with full information on any problem identified.
Full details on our warranty and product's returns policy can be obtained upon request.

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Hyfire Wireless Fire Solutions Limited - Unit B12a,

Holly Farm Business Park, Honiley, Warwickshire,

CV8 1NP - United Kingdom

HFW-SIM-01 + HFC-WSR-03
HFW-SIM-01 + HFC-SBR-23-03

EN 54-25:2008
EN 54-3:2001+A1:2002+A2:2006

HFW-SIM-01 + HFC-SBR-23-03 (only)

EN 54-23:2010

For use in compatible fire detection and alarm system.

Category rating: W - 2.5 - 7

Duration of operation: Pass
Provision for external conductors: Pass
Flammability of materials: Pass
Enclosure protection: Pass
Access: Pass
Manufacturer's adjustments: Pass
On-site adjustment of behaviour: Pass
Requirements for software controlled devices: Pass
Coverage volume: Pass
Variation of light output: Pass
Minimum and maximum light intensity: Pass
Light colour: White
Light temporal pattern / frequency of flashing: N/A / 0.5 Hz
Marking and data: Pass
Synchronization: Pass
Durability: Pass
Temperature resistance: Pass
Humidity resistance: Pass
Shock and vibration resistance: Pass
Corrosion resistance: Pass
Electrical stability: Pass