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BIO-ACOUSTIC SYSTEMS
Nature Inspired Bird Dispersal

USERS INSTRUCTION MANUAL

SCARECROW 180 ™

SCARECROW 360 ™

Scarecrow 180™

Scarecrow 360™

ISSUE = V20419

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ITEMS SUPPLIED

SCARECROW 180™

1 x fully automatic and random play bird dispersal unit, incorporating:

- 10 standard distress calls.
- 3 built in speakers,
- 1 light sensor,
- Wall mounting bracket
- Keypad for setting controls.

1 x Power Option; either 15V dc regulated switch mode EU/UK power supply, or Battery Lead.
1 x U Clamp Pair; to mate with built in brackets to provide pole mount option, and bolts etc.

SCARECROW 360™

1 x 'slave' unit to accompany the SCARECROW 180™
1 x Connection Cable; connection from 360 unit to 180 unit

SCARECROW 360™ SYSTEM

Complete 360° dispersal system comprising:

1 x SCARECROW 180™ fully automatic and random play bird dispersal unit (as above);
1 x Power Option; either 15V dc regulated switch mode EU/UK power supply, or BatteryLead.
1 x U Clamp Pair; to mate with built in brackets to provide pole mount option
1 x SCARECROW 360™ 'slave' unit to accompany the SCARECROW 180™
1 x Connection Cable; connection from 360 unit to 180 unit

ACCESORY ITEMS AVAILABLE

Solar Power Option; suitable for B.I.R.D. System™, Scarecrow 180™ and Scarecrow 360™ System. System comprises:

- Solar Panel
- battery & regulator pack
- 2m pole stand; as described below

2m pole Non-piercing roof mount; mounted on a 1m square base. This requires the local purchase of four 450x450mm paving slabs, or equivalent, for stability.

1m pole Non-piercing roof Mount; for use on flat or ridge style roof. This requires the local purchase of four 450x450mm paving slabs, or equivalent, for stability.

Adaptor for non-piercing roof mounts; to 'saddle' a pitched roof peak.

Should any of the above accessories be required please contact your supplier, or Scarecrow direct, on sales@scarecrow.eu

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PRACTICAL TIPS

Point of Broadcast

- Ideally, the point of broadcast should be from a high point – too low to the ground will only limit the area covered, and therefore the success obtained.

Volume Levels

- The volume of broadcast has to be at a natural level for the birds to identify the broadcast as a natural call:
    - Too loud - the broadcast will merely appear to sound like a noise, and no reaction is likely.
    - Too quiet - they simply will not hear the call, and again a dispersal reaction is unlikely.
- To attain what is perceived as a natural level for the target species, begin broadcasting the system at the lowest volume level and then increase the volume until you see the birds react to the call

Coverage

- The system is stated as providing coverage in each speaker direction to a distance of 100m.
- This is dependent on a number of factors such as the lie of the land, prevailing weather conditions, strength/direction of wind, other ambient noise, air temperature and obstructions to sound broadcast.
- As such, either a greater or lesser distance may be obtained.
- Taking this into account, it is important to remember that the broadcast needs to sound at a natural level to the birds for greatest effect – too loud or too quiet, will merely either sound like a noise to the target birds and be ignored, or not heard at all.

Effect on other wildlife

- The calls broadcast are only recognisable by the target bird species, and therefore has no lasting effect on other wildlife at all.
- That is not to say that there will be no reaction – in some extreme cases, the broadcast of a distress call may for example bring in a Hawk hoping to find some easy food.

Relocating the Scarecrow 180 / 360™

- One of the benefits of this system, if mounted on a pole/base unit, is that it can be moved from location to location from time to time to enable different problem areas to be tackled.
- Whilst this is an option, it is recommended that a system should ideally remain in situ if an area is required to be kept free of birds.
- The concept of the system is to create the impression over time that the area is a “threat area” and one therefore to avoid – so over time the bird numbers may even reduce. This is achieved by the regular (but not too frequent) broadcast of the Distress Call, which clearly cannot be achieved if the system is relocated.

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PRACTICAL TIPS CONTINUED

- If it is decided to relocate the unit then this should not be too frequent – ideally no more frequently than fortnightly. Having said that every location may be slightly different, as are the reactions of different species on hearing their distress call, so it is worth taking some time to observe how the system works best under your own circumstances.

Variable Volume

- The system incorporates a "variable volume" feature –during broadcast the volume will automatically vary between the maximum set level, and approximately 20 metres from the unit.
- This is to provide the perception of predator movement, to aid to the overall confusion and concern of the target specie, to improve dispersal performance.
- This feature also ensures that no matter where the target bird may be within the overall coverage area during the time of broadcast, at some point the broadcast sound level will certainly sound as if it is at a natural level.
- This function can be disabled so the unit will continually broadcast at the maximum set level (please refer to page 14)

Independent Speaker Channel broadcast

- The system incorporates three independent speaker channels.
- The broadcast is made out of each channel in turn, independently, and on a randomised basis.
- As with the variable volume, this is to provide the perception of predator movement, to aid to the overall confusion and concern of the target specie, to improve dispersal performance.
- This feature works in conjunction with the variable volume.
- Different volume levels can be set for each speaker channel (please refer to page 10)

Habitat Management

- Whilst the unique efficiency of SCARECROW bio-acoustic products is long established SCARECROW GROUP LIMITED stress that they can only work effectively as part of an overall and planned programme of bird control.
- This will include total hygiene management and where applicable the use of operatives who have been professionally trained.
- Without limitation, SCARECROW GROUP LIMITED will not accept liability for any consequences as a result of poor equipment maintenance, misuse, inappropriate use, lack of operative training, failure of due diligence or through lack of prior project consultation.

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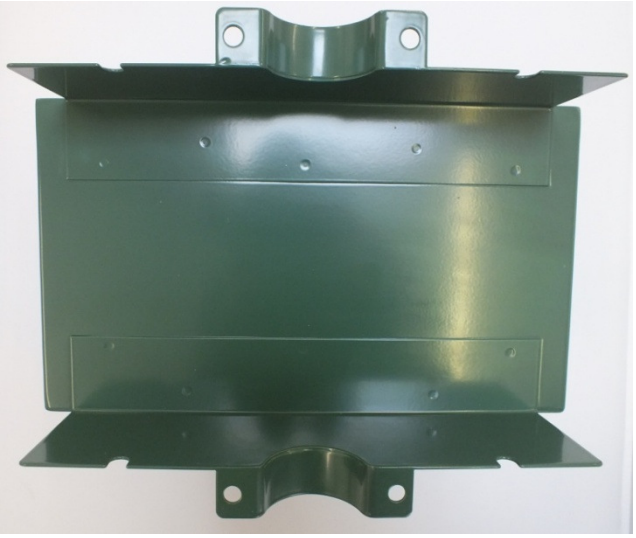
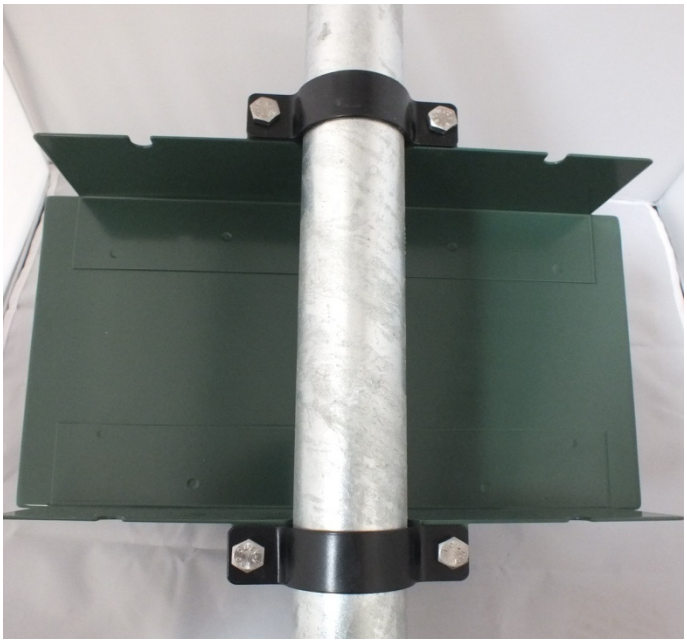
ASSEMBLY / FIXING

- Both the Scarecrow 180™ and the Scarecrow 360™ are provided with integrated brackets at the back of the unit.
- For the Scarecrow 180™ this is to facilitate either wall or pole fixing.
- The Scarecrow 360™ unit is fixed to the back of the Scarecrow 180™, and designed to provide full 360° broadcast by being fixed back to back and pole mounted – no U clamps are required, but bolts are.
- If wall fixing, bolts, nuts and washers are supplied.
- If the Scarecrow 180™ is to be pole mounted appropriate U clamps are provided for a suitable standard type scaffold pole (pole not supplied).



WALL BRACKETS

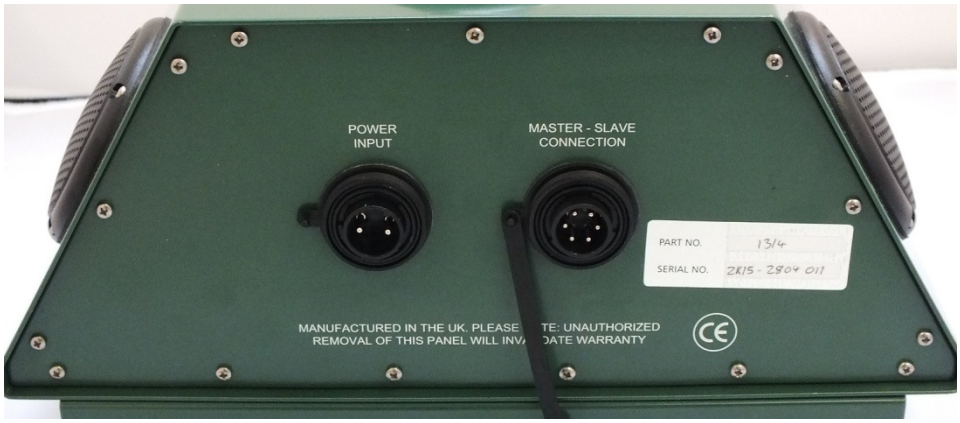


U CLAMPS MOUNTED ON POLE

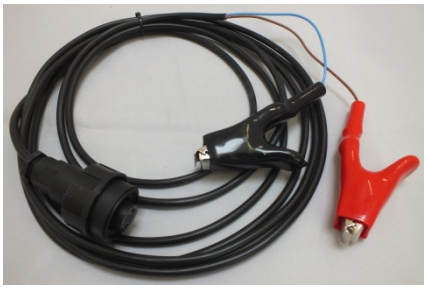
POWER SUPPLY AND CONNECTIONS

SCARECROW 180™

The standard Scarecrow 180 requires just one cable connection, as supplied. One end of the cable connection is fixed to the underside of the Scarecrow 180, in the “Power Input” connection.



The other end is the choice made of either 15V DC regulated switch mode EU/UK power supply, or Battery Lead, and is fixed to power source.



SCARECROW 360™

When this additional unit is purchased to facilitate a full 360° broadcast, one further cable is supplied for connecting the two units – in both cases the connection is made by using the “Master/Slave Connector” socket.

SOLAR POWER OPTION

The solar power unit is a standalone unit and has two connectors.

The first is “Solar”, connecting the solar panel to the battery and regulator.

The second is “12V Out”, connecting the battery and regulator to the main Scarecrow 180 unit, at “Power Input”

Further instructions on the assembly of the Solar Pack and 2m stand are included with these accessories

KEY PAD GUIDE AND DEFAULT SETTINGS

Standard Programmed Calls:

1. Herring Gull
2. Black Headed Gull
3. Starling
4. Rook
5. Crow
6. Pigeon
7. Jackdaw
8. Canada Goose 1
9. Canada Goose 2
10. Birds of Prey

Standard Factory Settings:

- Unit volume is pre-set to cover a 50m distance
- Pin Disabled
- Light Sensor – Mid Point 5
- Random Broadcast Playback Timer set to Normal
- Variable Volume activated
- Independent Speaker Channel volume deactivated
- Low Power Standby enabled

When the unit is first provided from Scarecrow, the system will not have the PIN activated. In this “unlocked state” all buttons on the keypad are operative.

Thereafter, if the User has activated the PIN, the system can be either be in a locked state or unlocked when first powered up.

If locked, a PIN number is required to unlock the system and perform any functions.

TURNING THE UNIT ON/OFF

Turn on the system.

- Press the 'POWER' button to switch on.
- The red LED above the power button will turn on.
- If a PIN is enabled, LED's 1-4 will flash to prompt you to enter the PIN code for access
- Enter the correct PIN number, if correct all number LED's will flash twice, if incorrect Error code 2 (Refer to pages 15-16 for Error Codes) will be shown on the on the ERROR LED and the system will shut down
- The system will also shut down after 30 seconds if no PIN is entered.

Turn off system.

- Press and hold the power button for 3 seconds until all number LED's flash rapidly to switch off.
- If the system was in low power standby, the system will power up first, flash all number LED's rapidly then shut-down when the power button is released.
- If a PIN is enabled, LED's 1-4 will flash indicating that the system is locked.
- Enter the correct PIN number, if PIN entered is correct, the system will shut down immediately.
- The system will remain on if the incorrect Pin was entered.
- If the system was in low power standby, the system will power up first, flash LED's 1 – 4 to prompt for the PIN entry.

Lock the system.

- If PIN enabled and the system is unlocked, press the power button briefly to lock the system, all number LED's will flash and the system will be locked.

Note:
The system will lock itself after 15 minutes if no keys are pressed and the PIN is set and enabled.

Unlock the system.

- Assuming the unit is on, press and hold 'A' for 3 seconds and LED's 1-4 will flash to prompt PIN entry.
- Enter the correct PIN number which will be confirmed by all the number LED's flashing twice. Incorrect pin will be indicated by all number LED's lighting for two seconds and Error code 2 on the ERROR LED (Refer to pages 15-16 for Error Codes)

Cancel PIN entry mode.

- Briefly press the Power button to exit PIN entry mode while LED's 1 – 4 are flashing.

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PROGRAMMING INSTRUCTIONS

Broadcast Random Timer

- The system has three main random timer functions that indicate how long the interval will be between each call sequence broadcast. The System is automatically pre-set to "Average" mode – amend to "Boost" or "Critical" as required by pressing the appropriate button briefly and LED comes on, and "Average" LED goes out – function mode amended.
- A = Average = 20 to 45 minutes – This is the default setting and recommended everyday setting
- B = Boost = 10 to 30 minutes – This setting should not be used for more than 48hrs otherwise the birds may habituate to the sound and make the system less effective
- C = Critical = 5 to 15 minutes - This setting should not be used for more than 48hrs otherwise the birds may habituate to the sound and make the system less effective

Bird Calls

- Press 1-10 for the required Bird Calls.
- Press individual numbers one at a time and once the individual LED stays on, the call is programmed.
- In the event the wrong call is programmed, simply press the number again until the LED goes off.

Setting the Volume – Single Channel Mode (Default)

- The volume is set to 50m, as a factory setting default.
- Press either volume button up or down to enter the volume set mode. Speaker channel 'B' will be pre-selected as indicated by a flashing 'B' LED and solid lit 'A' and 'C'. Press volume up or down to alter the volume/distance coverage as required – very roughly, each number equates to about 10 metres.
- On pressing either volume button, the bird sequence will start broadcasting continuously in a "Test Mode" at the current set maximum level (i.e. the variable volume feature will not operate at this stage). This will last for 2mins to enable you to check the volume level is adequate for the required target area and then, after 2 minutes, automatically time out. If the process is completed sooner, briefly press the power button to exit the "Test" mode and the final volume setting made will be the maximum level to which the system will broadcast.
- While the volume key is pressed and for a few seconds after, the number LED's will show the volume setting from 1 to 10.
- You may select either of the three speaker channels A, B or C
- To override the 2mins test mode and activate the random timer for broadcast, oncethe volume is set at the correct level, briefly press the power button

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PROGRAMMING INSTRUCTIONS CONTINUED

Setting the Volume – Multi Channel Mode (Option Setting 6)

- If activated in the Options Settings (refer to page 15) you are able to set an individual volume level for each speaker channel
- Press either volume button up or down to enter the volume set mode. Speaker channel LED's 'A', 'B' and 'C' will flash prompting you to select a speaker channel.
- Press either 'A', 'B' or 'C' to select the speaker channel; the selected channel LED will be flashing with the other two remaining solid. The current volume level will be shown briefly on the number LED's and the bird sequence will start broadcasting.
- Press the volume button up or down to adjust the level – very roughly, each number equates to about 10 metres.
- Once you have completed setting the volume level for the selected channel you can switch to one of the other channels by pressing either the 'A', 'B' or 'C' buttons. The current volume level for the new selected channel will be shown briefly on the number LED's.
- Once the volume is set at the correct level for each channel, briefly pressing the power button with exit the volume set mode

Light Sensor

- The light sensor tells the system to stop broadcasting at night to save power and to reduce noise nuisance.
- The DUSK timer runs for 1 hour at sunset to keep the system active after sunset to discourage birds from roosting.
- The DAWN timer delays wakeup of the system for 60 seconds to ensure that the system is not triggered by passing motor vehicle headlights at night.

Light Sensor: Test

- Briefly press one of the light sensor buttons to disable the dawn / dusk timers.
- Cover the light sensor (positioned on left hand side of speaker below keypad) with hand - the Amber LED should go out indicating the system is in night mode.
- Remove your hand and check the LED now goes to a solid Amber colour – this indicates the system is now in day mode and the light sensor is working correctly.
- During normal operation, the light sensor LED will be on during daylight, it will flash when dawn or dusk timer is running and will blink once every 5 seconds if in night mode (to save power).

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PROGRAMMING INSTRUCTIONS CONTINUED

Light Sensor: Adjustment

- Adjust Light Sensor by pressing the associated “up/down” buttons repeatedly as required; 1 = most sensitive to light, 10 = least sensitive.
- The light sensor level will be shown on the number LEDs while operating the buttons and for a few seconds after release.
- Minimum setting disables the light sensor. This is achieved by adjusting the light sensor down until LED No 1 also goes out - this is confirmed by rapid flashing of all number LED’s.

Light Sensor: Other

- Pressing the UP or DOWN buttons briefly will bypass the dawn and dusk timers when in "Dawn/Dusk" Timer mode (e.g. amber LED is flashing). This allows the system to go into night mode immediately if dark, or day mode if daylight, without the delay.
- During normal operation, the light sensor LED will be on during daylight, it will flash when dawn or dusk timer is running and will blink once every 5 seconds if in night mode (to save power).

Light Sensor: Typical Results

- The light sensor function enables the unit to be set up so it activates at dawn and then goes into night mode at dusk. Below is an overview of the basic results seen during test on a partially cloudy day.

    - Level 0 = Disabled, unit always in day mode.
    - Level 1 = Unit deactivates 20 minutes after sunset
    - Level 2 = Units deactivates 15 minutes after sunset
    - Level 3 = Units deactivates 6 minutes after sunset
    - Level 4 = Units deactivates 2 minutes after sunset
    - Level 5 = Units deactivates 1 minute after sunset
    - Level 6 = Units deactivates at sunset
    - Level 7 = Units deactivates 1 minute before sunset
    - Level 8 = Units deactivates 2 minutes before sunset
    - Level 9 = Units deactivates 5 minutes before sunset
    - Level 10 = Units deactivates 6 minutes before sunset

Note: the system will continue broadcasting for a further 60 minutes after the times stated below, as the dusk timer keeps the system active to prevent roosting.

Note: There is a slight delay before the sensor responds.

Note: If the light sensor is NOT enabled in the options function, all number LED’s will flash rapidly when either button is pressed. It is enabled by default.

OTHER FEATURES

Low battery warning

- If the battery voltage falls below 9.5v, the system will shutdown to prevent damage to the battery.
- The next time the unit is powered up (provided the battery remained connected and did not fall below 5v) the system will flash code 5 and play “low battery” through the speakers indicating that a low battery shutdown had occurred.
- You must recharge the battery.

Battery Consumption

Assuming 5 birds programmed on normal mode and volume set to mid output (8).Each bird call will play for an average of 80 seconds per speaker which totals 20 minutes. The unit will be timing for an average of 30 minutes between broadcasts. (20 – 40 minutes for normal mode)

Therefore the total draw in 24 hours will = 1.632Ahr (1.63 Amp hours drawn per 24 hours)

Battery life expectancy assuming a fully charged battery:

6.5Ahr	6.5/ 1.63	= 4 days
40Ahr	40 / 1.63	= 24.5 days
72Ahr	72 / 1.63	= 44 days
80Ahr	80 / 1.63	= 49 days

Low Standby Mode

- The system will go into a low power standby mode (if enabled) and no broadcast is running.
- As standard each unit has low power standby mode activated.
- The system will go into this mode if no buttons have been pressed for 15minutes, no broadcast sequence is active during daylight and one hour after sunset has been detected.
- A brief press of the power button will bring the system out of this mode.
- Low standby mode is indicated by a brief flash of the power LED, light sensor LED during night time or a brief flash of the set mode (A, B or C) during day time.
- To force low power standby to run, press ‘A’, ‘B’ or ‘C’ button to stop the current broadcast then press power button briefly, after 10 seconds the system should power down into low power mode.

LED meanings

- All number LED's flash four times when any button pressed and ERROR LED lit = System locked by PIN, press A for 3 seconds then enter PIN number.
- Number LED's 1-4 flashing continuously = > PIN number entry expected.
- All number LED's flash twice after PIN entry = PIN number entry correct.
- All number LED's on for 4 seconds = PIN number incorrect or timeout ERROR. Error code 2 shown on ERROR LED
- All number LED's scroll down from 10 to 1 after factory reset = Confirmation of reset to defaults.
- A, B or C LED flashing indicates that the random timer between broadcasts is running.
- A single number LED flashing indicates that particular bird is broadcasting.

PIN CONTROL / USE

- PIN option factory setting is set to "Disabled" as default.
- Default PIN : 10, 10, 10, 10

Activate PIN Function and Save New Pin (use when PIN Function not activated before)

- Press and Hold A for 3 seconds – Red LED's 1- 4 will now flash
- Enter the default PIN 10,10,10,10 – The A,B and C Green LED's will now flash
- Press C briefly and then enter new 4 digit PIN twice – All LED's will flash twice to confirm change. The PIN is now saved and enabled.

Disable PIN function

- Press and hold A for 3 seconds - Red LED's 1- 4 will now flash
- Enter the current user PIN or 10,10,10,10 if default - then press B to disable the PIN.
- The system will now not require a PIN to operate.

Enable a previously disabled PIN

- Press and hold A for 3 seconds, enter the existing user PIN number
- Press A briefly. The system will now require the user PIN to operate.

Note: *After A, B or C has been pressed as above, the system reverts to normal operation mode.*

PIN number features:

- If the system is locked by PIN, hold “A” for 3 seconds - LED’s 1-4 flash continually (these LED’s flashing indicates “PIN entry mode”).
- If no PIN has been programmed yet, enter factory setting default PIN 10,10,10,10. Otherwise enter the saved PIN.
- LED’s 1-4 will go out as you enter each digit.
- You should then see all LED’s flash twice for confirmation of correct entry. System now unlocked. (Wrong entry indicated by all lights lit for 2 seconds and Error Code 2 on ERROR LED)
- If the PIN is active and after 15 minutes of no user input, the system will revert to PIN locked in which case you will have to press A for 3 seconds and then enter the PIN number to unlock the system.
- If the PIN is entered incorrectly 5 times in a row the buttons will be locked out for 5 minutes before a retry is allowed. All the number LEDs will light for 2 seconds if A is pressed for 3 seconds to try and enter a PIN number during lockout period.
    - Briefly pressing the power button will lock the system if the PIN is enabled.

RE-SET FACTORY SETTINGS

- If you have forgotten your PIN or want to revert the unit back to its factory settings please follow the below steps:
- Press and hold A for 3 seconds until the 1- 4 Red LED’s flash enter PIN 4726
- LED’s 9 and 10 will be lit
- Press 10 to perform a factory re-set
- Number LED’s will scroll from 1 to 10 and then 10 to 1 and the unit will shutdown
- Please note the pin will have now been re-set to the default 10,10,10,10

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OPTION SETTINGS

Several of the features of the unit can be turned On/Off by following the below steps

To enter option setup mode, unlock system first if locked

1. Press and hold 'A' for 3 seconds until number LED's 1-4 flash
2. Enter Pin code 4823 and all number LED's will scroll from 1 to 10
3. Use the number buttons to toggle the items listed below.
4. Press 'POWER' button briefly to save and quit.
5. All the number LED's will scroll down from 10 to 1;

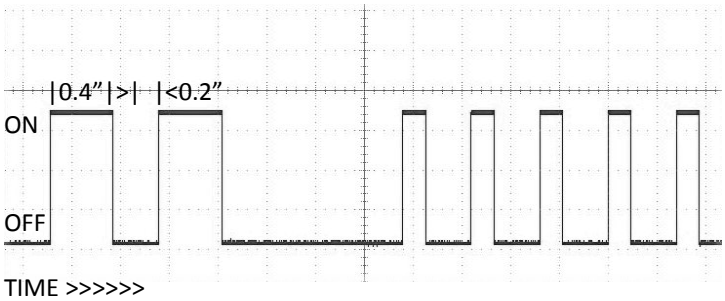
		Default for Urban System
1.	Allow Auto sequencer with Airside System	(off)
2.	Enable light sensor	(on)
3.	N/A	(off)
4.	Enable low power standby mode	(on)
5.	Disable Variable Volume	(off)
6.	Enable Independent speaker channel volume levels	(off)
7.	Enable Fault Test mode – Amplifier and Speaker	(off)
8.	Enable Short Circuit Fault Test Mode (Beeps)	(off)
9.	Enable RF Control	(off)
10.	Airside Mode Enable	(off)

ERROR CODES / LED

This LED will indicate carious codes to indicate if there is a problem.
An Error is shown by flashing a number on the LED; most error costed are displayed twice to make reading easier.

The LED will show a long flash (on for 0.5 seconds / off for 0.4 seconds) for 10's
The LED will show a short flash (on for 0.25 seconds / off for 0.4 seconds) for 1's

Therefore code 25 will be shown on the ERROR LED with the timings below:



Error codes displayed on the ERROR LED.

2	PIN ERROR	Wrong pin code entered or pin entry timeout
3	PIN ERROR	PIN already used for technical functions
4	N/A	
5	LOW BATTERY	Battery has fallen below 9.5V
6	ADPCM file error	Audio file format incorrect
7	ADPCM file error	Audio file format incorrect
8	Corrupt ADPCM file	Audio file is corrupt
9	Can't play ADPCM file	Audio file has other problem
10	N/A	
11	INIT file missing	
12	Defaults set from INIT file	
13	FLASH write error	Unable to update flash memory
14	RF not enabled	Attempting to setup RF module but not enabled in options
15	RF initialisation error	Unable to access RF module
26	BIRD can't play	Missing Bird audio file

TECHNICAL SUPPORT

Should you have any concerns about the installation or set up of your system, please contact either the agent from whom the purchase was made, or Scarecrow Bio-acoustic Systems direct as follows:

- Phone: 01825 766363
- Email: support@scarecrow.eu / sales@scarecrow.eu

If an item needs to be returned to the manufacturer, the Returns Address is:

Scarecrow Group Limited
The Old Dairy
Straight Half Mile
Maresfield
East Sussex
TN22 2HH