768R/769R

Eight Channel Receiver

Installation and Programming Guide

COOPER Menvier

Scantronic

Printed and published in the U.K.

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1. INTRODUCTION

The 768r is an eight-channel receiver that operates on narrowband 868MHz and can be used with all current Scantronic 868MHz transmitters (see Chapter 2). The 768r can be used either as a stand alone unit, or as the radio interface for a wired alarm panel.

The 769r is an expander for the 768r that provides eight extra channels, but does not have a radio receiver itself. The 769r draws its power from the attached 768r.

Each channel is capable of handling up to four separate transmitters of the same type, allowing a single 768r/769r to handle up to 32 transmitters. However, Cooper Security Ltd recommend that you use this feature only for PA or social care transmitters. Learning, for example, four PIRs onto a single channel will make it difficult to identify which PIR is the first to alarm.

In addition, the 768r/769r allows the installer to programme different modes to different channels, instead of being forced to select a single mode for all channels. Both 768r and 769r assign default modes when they learn a transmitter. Table 1 on page 33 lists the default modes assigned to each transmitter.

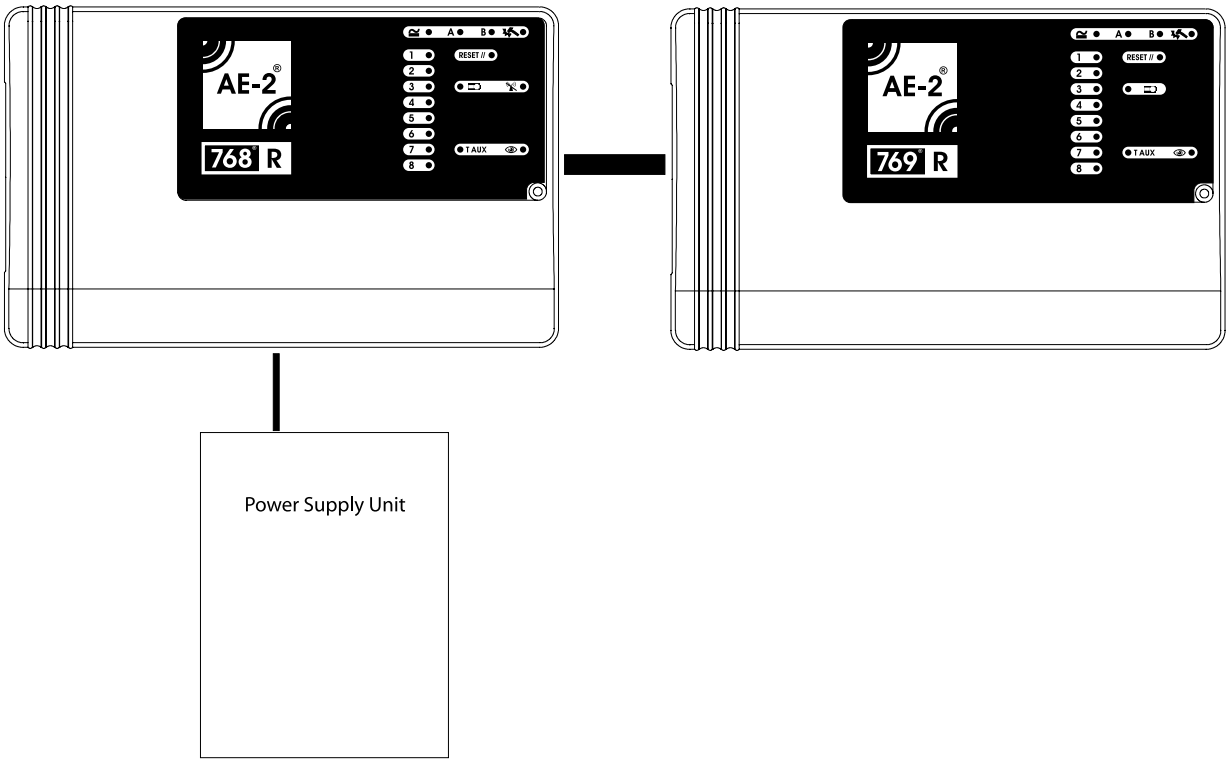


Figure 1. 768r and 769r

By connecting up to three 769r expanders to a single 768r, an installation can handle a total of 32 channels. With four devices per channel this gives a total of 128 transmitters that can communicate with a 768r/769r installation.

Each 768r/769r can be fitted with a single 8600EUR-00 relay expansion card. This card contains eight relays, one per channel, each providing NO/NC voltage free contacts.

The 768r normally works with an internal aerial. If necessary you may connect a suitable external aerial to the unit. Chapter 2 gives details of suitable aerials.

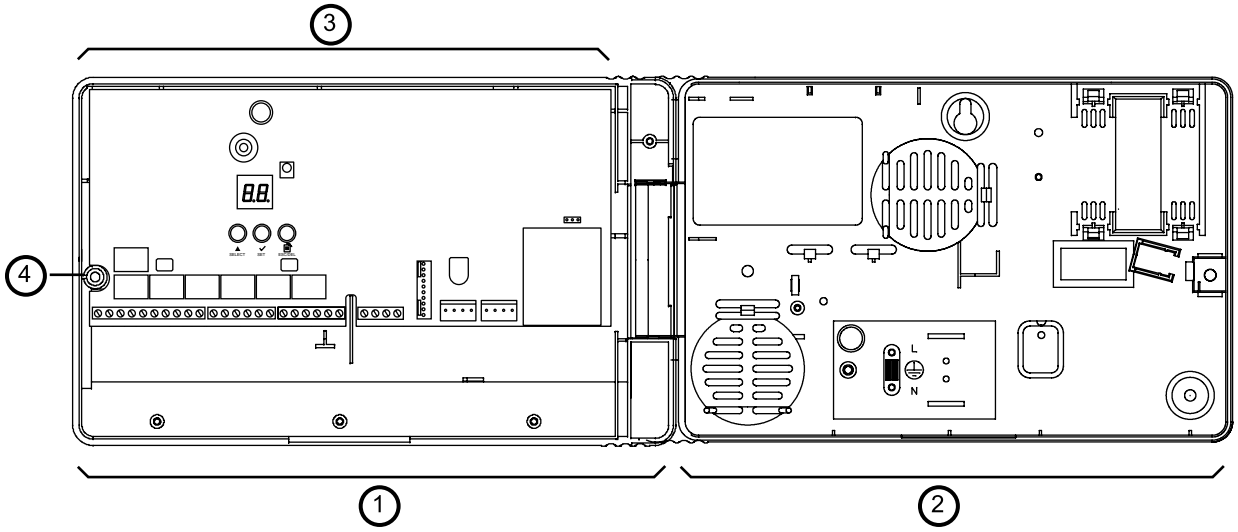
2. TECHNICAL DESCRIPTION

SPECIFICATION

Channels	8 channels, four devices per channel.
Display	Two by seven-segment LED. Visible with case open.
Compliance	Product is tested to 1995/5/EC R&TTE Directive.
Radio Section	Operating frequency 868.6625MHz at 20kHz bandwidth. I-ETS 300 220. CE tested to I-ETS 300 339 (draft standard).
12V power	768r quiescent current 55mA Expander quiescent current 55mA. Max current all outputs active 330mA with expander, 210mA without expander.
Outputs	Relay contacts, no/nc, 2A at 25VDC
Dimensions	H x W x D = 163 x 265 x 81 mm.
Weight	0.65 kg (without 8 channel relay expander).

PHYSICAL LAYOUT

The 768r/769r are wall mounted units housed in a polycarbonate box made to BS4734 requirements. Figure 2 shows the general layout of the main components.

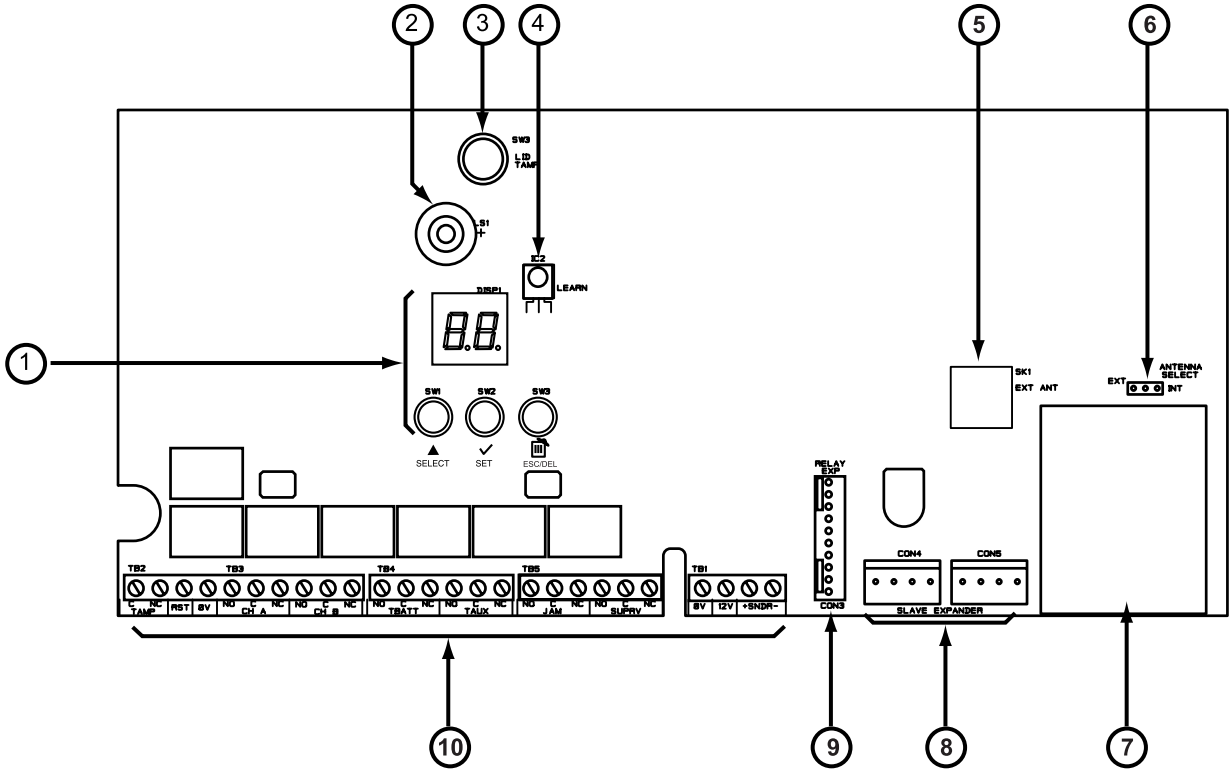


1	Case Lid	2	Case back
3	Main PCB	4	Lid screw

Figure 2. Internal Layout of 768r/769r

In the 768r the receiver and decoder circuits are on the main circuit card which is mounted securely within the lid. The body of the box provides space and mounting points for the 8600Eur-00 8-channel relay expander: The 769r is physically similar, but the main PCB does not have any RF circuits.

Figure 3 is an expanded view of the 768r/769r main PCB showing the location of the connectors and controls.



1	Programming controls	2	Piezo sounder
3	Lid tamper switch	4	IR Learn sensor
5	External aerial BNC connector	6	External/internal aerial selector jumper
7	Radio receiver	8	769r Expander connector
9	8600EUR-00 relay card connector	10	Main PCB connector

Figure 3. Main Circuit Card Controls And Connectors

CONTROLS AND DISPLAYS

Front Panel

Each 768r/769r uses the following display:

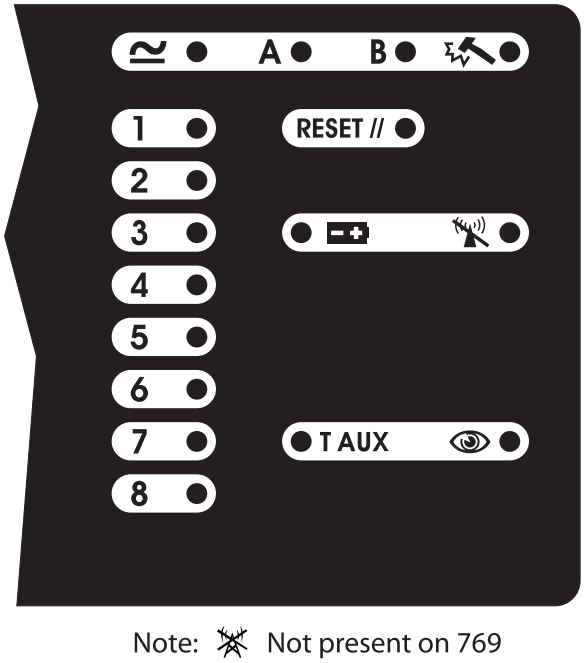


Figure 4. 768r/769r Front Display Panel

The symbols have the following meanings:

≃	Power
1 - 8	Channel active
A	Common Output A
B	Common Output B
	Tamper
//	Reset
	Transmitter Low Battery
	Jamming (not on 769r)
TAUX	Transmitter DC supply failed (Used by 703r only.)
	Supervision

The 768r/769r has a Reset button on the front case. Pressing Reset clears all latched channels and LEDs.

If you have an expanded system then:

- Pressing Reset on the front panel of the 768r will reset only the 768r, and not any attached 769r's.
- Pressing Reset on the front panel of an attached 769r will reset that unit, but not any of the other units connected to it.

Each 768r/769r also has a connector for an external reset signal (see Figure 7). By applying a -ve to the reset terminal and then removing it you can reset a system of connected 768r/769r's.

Internal

The PCB provides a two digit LED display and three push buttons for programming channels and controlling the transmitter learning process. See Chapter 4 for details.

Next to the LED display is the infra-red learn detector. When making the 768r/769r learn the identity of a transmitter from the transmitter's status LED, hold the status LED within 25mm of this detector. See Chapter 4 for more details.

INPUTS

Radio

The 768rEUR-50 contains a standard Scantronic 868MHz radio receiver. The receiver connects to both an internal aerial and a BNC aerial socket mounted on the main PCB. The installer can select either the internal or the external aerial by placing a jumper on the Antenna Select pins.

Each detector sends information to the receiver using an attached radio transmitter. The transmitter relays the information in the form of radio data packets, using an FM signal. Each packet contains a code identifying the transmitter and information on the state of the detector. Every receiver within range picks up the transmitter's packets, but reacts only to those transmitters it has been programmed to notice.

Tamper

The 768r contains an internally mounted tamper switch to detect opening of the case lid (see Figure 3). If the lid is opened (or, should one be fitted, the external aerial tampered) then the 768r/769r opens the Tamper relay contacts. The Tamper relay contacts are normally closed.

OUTPUTS

Relay Outputs

The 768r/769r provide seven output relays. Figure 3 shows their position and Figure 7 shows the connectors. The Normally Open, Normally Closed and Common Terminals of the relays provide voltage free change over contacts.

Tamper	Normally Closed. Active when the Lid tamper is open or external aerial tampered.
Channel A and Channel B Common Outputs	The Common Output Channel relays (and LEDs) report the status of transmitters. See Chapter 5 Programming for more information.
Low Transmitter Battery	The 768r/769r uses the Low Transmitter Battery relay to report that a transmitter's battery is failing. See Chapter 8 Fault Finding for more information.*
TAux	Active when the DC supply on a **transmitter** fails. Note that currently only the 703r four channel transmitter supports this feature.*
Jamming	Active when the 768r detects jamming. Not available on 769r.

Supervision Active when the 768r does not receive a transmission from a learned radio transmitter for more than a pre-programmed time, see page 43.*

* *When the 768r triggers one of these relays it also flashes the channel LED associated with the faulty transmitter once every 20 seconds.*

Internal Sounder

The main circuit card in the lid carries a piezo electric sounder. You may also fit an external sounder if required. When enabled, both sounders operate every time Common Output A or B comes on. See Chapter 4 Installation for details of connecting the external sounder.

EXPANSION

Optional 8-Channel Relay Card

The 768r/769r also provide eight channel outputs for signaling the state of associated transmitters. The channel outputs can drive a bank of eight relays, mounted on a separate circuit card in the body of the case. Each relay provides normally open, normally closed, and common terminals.

The relay card, part number 8600EUR-00, is optional and must be purchased separately.

769r

If you want to receive more than eight channels from transmitters, you can use 769rs as expansion units. The 769r is physically similar to a 768r, except that it does not possess a radio receiver.

Once connected, each 769r behaves like an independent unit, and can be programmed separately from all the other units in the installation.

POWER INPUT/OUTPUT PROTECTION

The 0V and 12V input terminals on the main PCB (see Figure 7) and the 12V supply from 768r to 769r are protected against reverse connection and short circuit. The protection is provided by polyswitches.

COMPATIBLE EQUIPMENT

The following Scantronic equipment is compatible with the 768r/769r:

701REUR-50	Landyard Pendant Transmitter
701rEUR-60	Pendant Transmitter
702rEUR-00	Watch Pendant Transmitter
703rEUR-00	Four Channel Transmitter.
705rEUR-00	Remote Set Transmitter
706rEUR-00	Tilt Switch/PA Transmitter
714rEUR-00	PIR Transmitter (Small case)
715rEUR-02	PIR Transmitter
719rEUR-02	Smoke Detector Transmitter
726rEUR-00	Short Range PA Transmitter
726rEUR-50	Long Range PA Transmitter
734rEUR-00	Door Contact Transmitter CC version
734rEUR-01	Door Contact Transmitter FSL version
735rEUR-00	Universal Transmitter.
739rEUR-00	PC Board for glass break detectors
746rEUR-00	Test transmitter.
790rEUR-00	Signal Strength Meter.
794rEUR-00	1/2 Wave Antenna with 5m coaxial cable. Tampered.
797rEUR-00	Co-linear Antenna with 5m of coaxial cable. For external use. Tampered.
8600EUR-00	Relay Output PC Board.

3. PLANNING

GENERAL

Before Installation you should carry out a survey of the site. You need to know how many and what kind of transmitters will be operating through the receiver.

You also need to assess where the unit(s) must be placed in order to communicate with the transmitters successfully. To do this you may need to conduct Signal Strength Tests using a Scantronic 790 hand held signal strength meter. The 768r/769r units also provide a signal strength test facility. Note that if you want to carry out signal strength tests you will need to provide a transmitter. Cooper Security Limited can supply the 746r test transmitter.

A final consideration is the power supply needed for the unit. Note that neither 768r or 769r contains a power supply.

CHOOSING THE NUMBER OF RECEIVERS.

The number of receivers and expansion cards required depends on the number of transmitters being used. To calculate the minimum number of receivers needed, add up all the channels being used by the transmitters and divide by eight. Note that one 768r can support up to three 769rs.

Example

To show how to calculate the number of receiver units required, here is an example. A site proposes to use the following types and numbers of transmitter:

- Three single channel 701r pendant transmitters as personal attack alarms (requires a total of three channels).
- Four dual channel 714r passive infra red detectors (requires a total of eight channels).

Adding all the channels required by this collection of transmitters means that the installation will be using a minimum of nine channels if the 701r's share one channel, or a maximum of 11 channels if each 701r has its own channel. Since each 768r/769r can provide only eight channels the installation will need two units, giving a maximum capacity of 16 channels. In this example you could use one 768r and one 769r.

ALLOCATING TRANSMITTERS AND MODES

The 768r/769r selects default modes for each type of transmitter when you make the receivers learn a transmitter's identity. Cooper Security Ltd recommend that you do not change the default mode unless necessary.

To change the mode see Chapter 5 for more details on individual transmitters and modes.

SITING THE RECEIVER

Do site the 768r/769r units:

- Within a protected zone.
- As high as possible. However, do make sure that the receiver is on a similar level to the transmitter.

Do not site the 768r/769r:

- In the entry or exit zones, or outside the area covered by the alarm system.
- Close to or on large metal structures.
- Closer than two metres from mains wiring and metal water or gas pipes.
- Lower than two metres from the floor (ideally).
- Inside steel enclosures.
- Next to electronic equipment, particularly computers, photocopiers or other radio equipment, CAT 5 data lines or industrial mains equipment.

Finally, make sure you site 769r expansion units and the main 768r close enough together so that the standard 80 cm cable can connect them properly.

POWER SUPPLY REQUIREMENTS

You may connect up to three 769r units to one 768r unit.

SUMMARY OF PLANNING PROCEDURE

1. If necessary, carry out a RF signal strength survey to make sure that the receiver can pick up all the transmitters.
2. Select a suitable position.
3. Choose the number of 768r/769r units and transmitters required.

4. INSTALLATION

STATIC PRECAUTION

Like many other electronic products, the 768r/769r contains components that are sensitive to static electricity. Try not handle the main circuit card directly. If you must handle the card, take the standard precautions against damage by static electricity.

UNPACKING AND PREPARATION

1. Take the unit out of its packaging.
2. Undo the lid and open the case.
3. If you are also installing a relay card, unpack the relay card and locate the packet of spacers and self-tapping screws supplied with it.

FITTING THE CASE

4. Hold the case against the wall and mark the position of the key hole (1 on Figure 5).

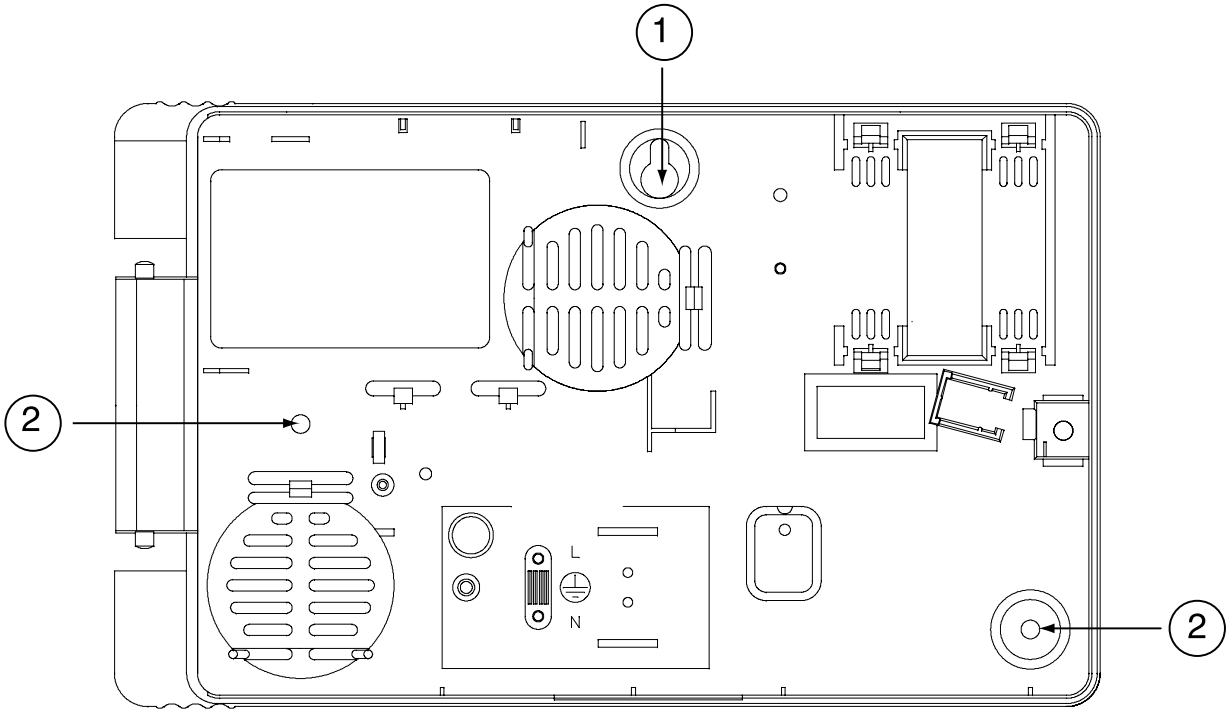


Figure 5. Mounting Hole Positions

5. Drill a hole at the marked position and insert a Rawl plug and screw.
6. Hang the case by the keyhole from the screw.
7. Mark the position of the other fixing holes onto the wall (2 on Figure 5).
8. Take the case down, drill holes for the fixing screws and insert the Rawl plugs.
9. Mount the case on the wall and screw home the fixing screws. Do not over-tighten the screws or you may crack the case.

INSTALLING THE RELAY CARD

1. Mount four plastic spacers in the holes at the corners of the relay card.
2. Insert four self tapping screws into the centre of the spacers. The screws should enter from the front of the card.
3. Turn the screws until one or two millimetres of the point stick out from the back of the spacers.
4. Hold the relay card in position in the back of the case (see Figure 6). The relays should be at the top and the ribbon cable connector at the left. The four screws should match four pre-drilled holes in the case.

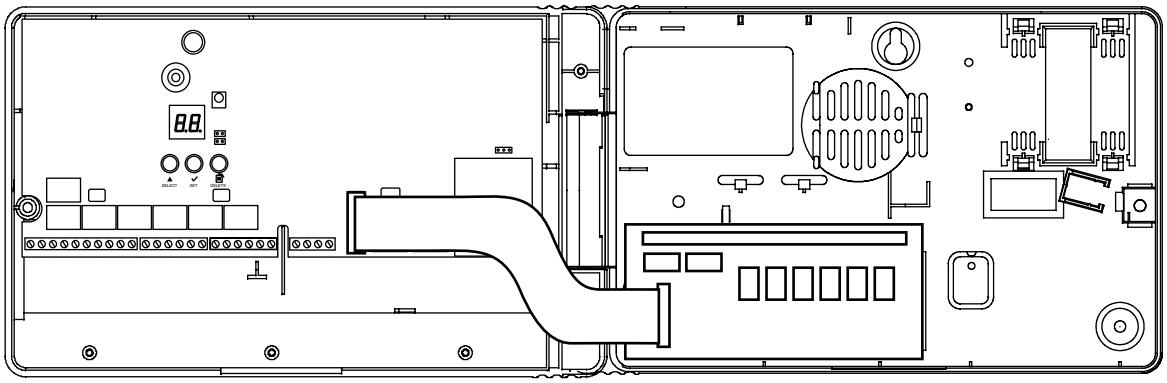


Figure 6. Locating The Relay Card

5. Tighten the screws until the relay card is mounted securely in the case. Do not over tighten or you may crack the card or the case. The screws may stick out one or two millimeters from the back of the case.
6. Fit the ribbon cable from the relay card to the connector on the main circuit card (see Figure 3).

INSTALLING THE AERIAL

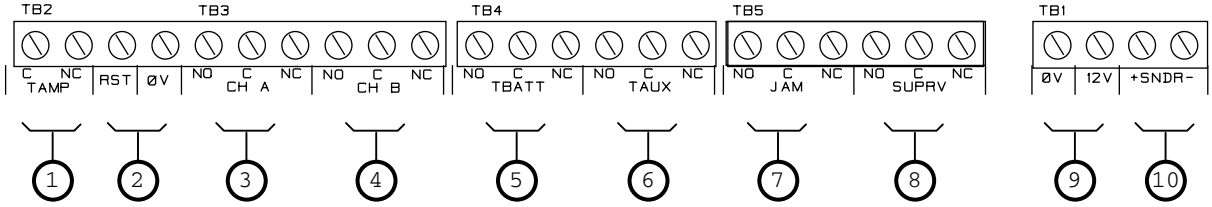
The 768r/769r units can be fitted with an external aerial. Pass the aerial lead into the case through a convenient opening, and fit the connector to the BNC connector on the main PCB (see Figure 3). Do not forget to move the Internal/External antenna selector jumper into the appropriate position ("8" on Figure 3).

Note: Remove all power from the 768r before fitting an external aerial. This ensures that the unit recognises the aerial on powering up.

UNIT CONNECTION

You may connect each 768r/769r to a control panel either from the connectors on the main circuit card, or from the output connectors on the eight-channel relay card

Figure 7 shows in detail the connectors available on the main PCB.



1	Tamper output relay	2	Reset input
3	Channel A output relay	4	Channel B output relay
5	Transmitter Battery Low output relay	6	TAUX output relay. (Used by 703r only.)
7	Jamming (768r only)	8	Supervision fail output relay
9	DC supply in	10	External sounder output

Figure 7. PCB Main Connector.

External Reset Connection

Figure 8 shows an example of connecting a unit to a control panel for an external reset signal.

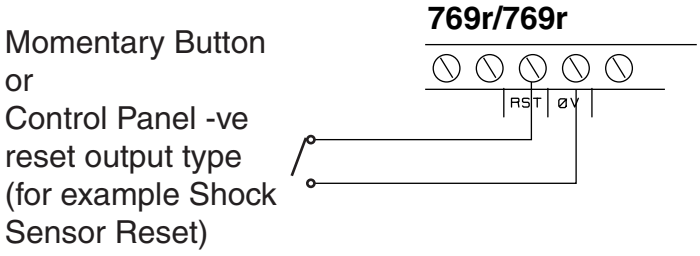


Figure 8. External Reset Connection.

When the user starts the control panel exit timer the Detector Reset output removes the positive feed for six seconds. This clears the latched channels.

Connecting the Sounder

Figure 9 shows how the external sounder may be connected.

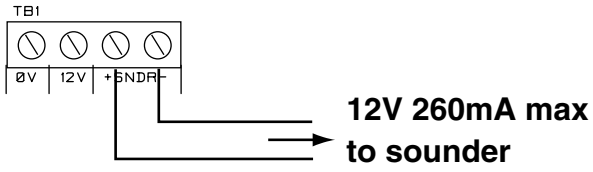


Figure 9. Sounder Connection.

Connecting the Optional 8-Channel Relay Card

Figure 10 shows the connectors available on the optional 8-channel relay card.

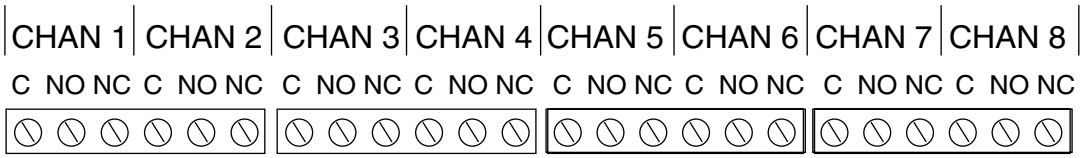


Figure 10. Optional 8-Channel Relay Card Connectors.

EXPANSION UNITS

Installation

769r expansion units are supplied with an 800mm cable to connect them to a 768r. Ensure that you position expansion units close enough to the 768r so that the cable can connect them both.

NOTE: Do not attempt to modify the cable supplied, or use a substitute.

Install 769r expansion units using the instructions on page 21. Install any relay cards using the instructions on page 23.

Connection

The recommended method of connecting 768r and 769r is to "daisy-chain" them together, as shown in Figure 11

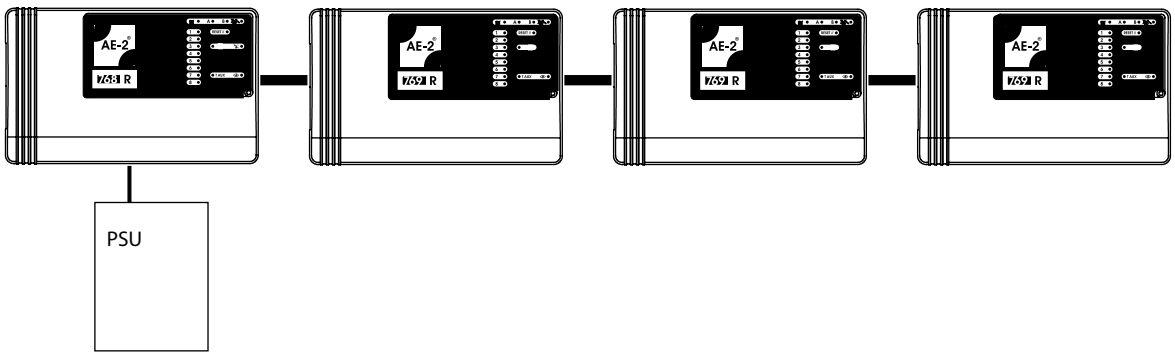


Figure 11. Connecting Expansion Units.

You can connect the units in any order. Use Con 4, Con 5, or both connectors in any unit.

5. PROGRAMMING

In order to put the 768r/769r to use, you must first program the unit. Programming involves making the receiver "learn" the identity of the transmitters that you wish to communicate with the receiver, and allocating specific operating modes to the learned transmitters. The rest of this chapter tells you how to do this.

PROGRAMMING CONTROLS

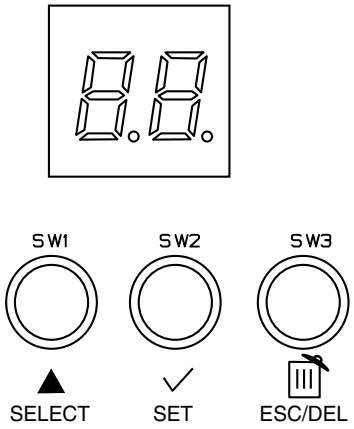


Figure 12. Programming Controls and Display

The main PCB contains a two digit LED display and three buttons that act as the programming controls. The user interface provides a menu of commands, each indicated by a two letter code on the display (see "Menu Structure" on page 31). Once you have entered programming mode, you select the appropriate command by pressing Select repeatedly. Pressing Set confirms that you wish to use that command. You then go to on to select options within the command by pressing a

combination of Select to chose the option and Set to confirm your choice.

If you think you have gone to the wrong section of the menu structure then use the Delete button as an “escape” key to to go back one level. When used with the correct command the Delete button also allows you to delete learned transmitters.

ENTERING PROGRAMMING

To enter programming for the first time (while installing a new unit):

1. Connect a suitable 12VDC power supply to the DC supply in connector (see Figure 7).
   The display shows the version number of the software as follows: two digits for the major version number, two dashes, and then two digits for the minor version number, for example: 01--00
2. Press Select.
   The display shows the first command in the menu: Ln

To enter programming while the unit is operating:

1. Open the 768r/769r case lid.
   Note: If the unit is connected to an alarm control panel the tamper alarm may sound.
   The display is blank.
2. Press Select.
   The display shows the first command in the menu: Ln

LEAVING PROGRAMMING

1. Press Set until the display shows one of the two letter commands.
2. Press Select until the display shows the command "GO".
   You should see: GO
3. Press Set.
   The display shows: CL
   You should hear a single beep repeated slowly.
4. Close the lid.
   The unit leaves programming mode after four seconds and clears the tamper indication.

Note: There is a deliberate delay of four seconds before the receiver leaves programming mode to make sure that you have time to close the lid properly and screw it down firmly.

RESTORING DEFAULTS

If you wish to remove all the programming from a unit (for example to reuse an old unit in a new installation) then:

1. Enter programming mode.
2. Press Select until the display shows dL .
3. Press Set until the display shows C I.
4. Press Reset // on the front of the case. (You may need to use a small blunt probe or similar to reach the switch.)
   The system gives a double beep.

The unit is now ready to program.

Note: You must carry out this procedure for each 768r/769r in an expanded installation.

Defaults

When supplied from the factory the receiver has the following default program:

Transmitters	None
Sounder (Sn)	Disabled
Infra red learn (Ir)	Enabled
Supervision (SP)	29
Jamming detection (JA)	Enabled

MENU STRUCTURE

The available commands are arranged in a simple menu. To move between commands press Select. The list below shows the commands and their function.

Command	Function
Ln	(Ln) Manually learn a transmitter to a specific channel and device number.
LA	(LA) Automatically learn a transmitter to the next available free channel and device number
dL	(dL) Delete learned transmitters. (You can delete all transmitters at once, or selected transmitters.)
SG	(SG) Measure and record the signal strength of a specific transmitter.
SA	(SA) Measure and record the signal

strength of all learned transmitters.

OP (OP) Program output to specific modes.

Sn (Sn) Sounder enable/disable.

Ir (Ir) Infra-red learn enable/disable.

SP (SP) Supervision enable/disable/time.

JA (JA) Jamming detection enable/disable.

?? (??) Query set up. Use this command to show what type of transmitters the receiver has learned for each channel. (See Table 2 on page 46.)

GO (GO) Leave programming mode.

LEARNING DETECTORS

The 768r/769r units learn the identity of individual transmitters and allocate them to specific channels. The units can learn up to four transmitters per channel, giving a potential maximum of 32 transmitters per 768r/769r. However, since some types of transmitter broadcast on more than one channel, an installation may not achieve this maximum number. Cooper Security Ltd recommend that as far as possible you do not learn more than one transmitter to each channel.

Each transmitter has a default mode that the receiver uses when it first learns the transmitter. (See Table 1 on the next page.) You may change

the mode used for individual channels with the OP command (see page 39). Cooper Security Ltd recommend that you use the default transmitter mode wherever possible.

Transmitter Type	Ch. A Alarm	Ch. B Tamper	Channel 3 & 4	Transmitter
Door Contact	2	2	-	734r, 735r, 739r
PIR	1	2	-	714r, 715r
Pendant	1	-	-	701r, 702r
Fire/Smoke	2	2	-	719r
Technical	2	2	-	734r, 735r, 739r
Telecommand	1	1	1	705r
PA	1	2	-	726r, 706r
Four Channel	2	2	2	703r

Table 1. Default Modes For Transmitters

When programming, you can either allocate a transmitter to a specific channel (see "Manual Learning", or you can allow the receiver to select the next available free channel for you (see "Auto Learning").

The 768r/769r can learn transmitters either by using the infra red light from the transmitter’s activity LEDs, or from their radio signals. When delivered from the factory the 768r/769r uses infra red learning. If you wish to use radio learning you must disable infra red learning, see page 42.

If you wish a 769r to learn a transmitter then you must make sure that the attached 768r is **NOT** in programming mode.

Manual Learning (Ln)

To learn a transmitter to a specific channel/device number:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln

Note: If the display shows some other command press Select until you see Ln.

2. Press Set.
   The display shows the first available channel number, for example: C 1
3. Press Select repeatedly until the display shows the channel number you wish to use.
   The display shows, for example: C4
   The display flashes if there are no other devices on that channel. The display is steady if there are already devices on the channel. The 768r/769r will not show a channel number if it has already learned the maximum number of devices to that channel.
4. Press Set.
   The display shows C and the channel number (C4 in the example), followed by "d-" and then "S-" as the receiver scans for a new transmitter.

Note: If you are using Infra-Red learning then hold the transmitter's activity LED within 25mm of the Infra-Red Learn sensor.

5. Activate the tamper on PIR or door contact transmitters. For other types of transmitter activate a channel.

   The display shows the device number allocated to the transmitter. If you are using radio learn the display alternates with the transmitter's signal strength, for example: d2 57

   (If you are using Infra-red learn the display shows a signal strength reading of zero.)

Note:

a) If the display shows "--" and your hear a low tone from the sounder, then the 768r/769r has already learned that transmitter.

b) The signal strength measured with the case lid open is not accurate. True signal strength readings must be taken with the case lid closed (see "Test").

6. Press Esc/Del to go back to the command menu.

   The display shows: Ln

Auto Learning (LA)

You may wish to learn several transmitters at once, allowing the 768r/769r to allocate them to free channels automatically. To do this:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Learn Automatic command.
   The display shows: LA
3. Press Set.
   The display alternates between the characters "C -" "d -" and "S -"
   This indicates that the receiver is scanning for signals from new transmitters.

Note: If you are using Infra-Red learning then hold the transmitter's activity LED within 25mm of the Infra-Red Learn sensor.

4. Activate each of the transmitters that you wish the receiver to learn (use the tamper on PIRs and door contacts).
   The display shows the channel and device number allocated to the transmitter. If you are using radio learn the display alternates with the transmitter's signal strength,
   for example: C3 d2 55
5. Press Esc/Del when you have completed learning all the transmitters.
   The display shows: LA

DELETING DETECTORS (DL)

You may wish to delete transmitters from the receiver, either in order to take them out of service, or to allocate them to other receivers or channels.

Deleting Selected Transmitters

To delete a selected transmitter:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Delete command.
   The display shows: dL
3. Press Set.
   The display shows the first channel number: C 1
4. Press Select until the display shows a channel allocated to the transmitter you wish to delete.
   The display shows, for example: C 3
5. Press Set.
   The display shows the first device number on that channel: d 1
6. Press Select until the display shows the device number of the detector you wish to delete.
   The display shows, for example: d4
7. Press and hold Esc/Del for four seconds.
   The sounder gives a double "beep".
   The display shows: dL

The receiver removes all records of the transmitter from each channel that the transmitter occupies. You do not have to delete the transmitter from each channel in turn.

Clearing a Channel

To clear all transmitters from a channel:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: 
2. Press Select until the display shows the Delete command.
   The display shows: 
3. Press Set.
   The display shows the first channel number: 
4. Press Select until the display shows a channel allocated to the transmitter(s) you wish to delete.
   The display shows, for example: 
5. Press and hold Esc/Del for four seconds.
   The sounder gives a double "beep".
   The display shows: 

The receiver clears the selected channel, but retains records of transmitters on other channels. For example, if you clear a channel occupied by the tamper zone of a PIR, then the channel holding the alarm zone of the PIR continues to operate.

PROGRAMMING CHANNELS (OP)

Cooper Security Ltd recommend that you use the modes that the 768r/769r assigns to each transmitter by default during learning. However, if you have an application that needs to use some other mode, then you can change modes for a channel as follows:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Output Mode command OP.
   The display shows: OP
3. Press Set.
   The display shows the first channel number: C 1
4. Press Select until the display shows the channel you wish to change.
   The display shows, for example: C 3
5. Press Set.
   The display shows the channel's current mode, for example: n5
6. Press Select repeatedly until the display shows the mode you wish to apply to the channel.
   The display shows, for example: n6
7. Press Set.
   The sounder gives a double "beep":
   The display shows: OP

Modes

1 – Momentary

The receiver switches the channel LED and relay ON for approximately four seconds when it receives an ACTIVE signal from the transmitter. The receiver ignores RESTORE signals.

2 – Latched

The receiver switches the channel LED and relay ON when it receives an ACTIVE signal from the transmitter and OFF when it receives a RESTORE signal.

3 – Manual Reset

The receiver switches the channel LED and relay ON when it receives an ACTIVE signal from the transmitter. The receiver ignores RESTORE signals and a user must reset the receiver to switch the channel OFF. The user can carry out the reset either by pressing the reset button visible through the front panel, or by applying 0V to the reset input (for example from an attached alarm control panel).

4 – Toggle

The receiver switches the channel LED and relay ON when it receives an ACTIVE signal from the transmitter and OFF when it receives the next ACTIVE signal.

5 – Common Tamper

If you program a channel to mode 5, and then learn a PIR or door contact into any other

channel, the receiver maps tampers to the first channel it finds set to mode 5.

For example, if channel 8 is programmed with mode 5 and you are learning detectors into channel 1 then the receiver will allocate all alarms to channel 1 and all tampers into channel 8.

6 – Output Module Mode

Use this mode when learning transmissions from the 7500r Domestic Radio Control Unit.

Multi-channel Transmitters

It is possible to allocate receive channel numbers to a subset of the transmission channels on multiple channel transmitters. For example, a 4-channel transmitter may only be using 3 channels. The installer must wire the transmitter inputs in numerical order to avoid having gaps in the receive channel allocation. For example, to use a 4-channel transmitter as a 3-channel transmitter, wire to inputs 1 to 3 at the transmitter. When the receiver learns the transmitter it allocates the next four available receive channels. You must then delete the unwanted channel from the 768r/769r.

ENABLING/DISABLING THE SOUNDER (SN)

If you wish to hear an audible signal whenever the receiver picks up a transmission from one the transmitters that it has learned then you must enable the sounder as follows:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Sounder command.
   The display shows: Sn
3. Press Set.
   The display shows E if the sounder is enabled, or d if the sounder is disabled.
4. Press Select until the display shows the option you require.
5. Press Set.
   The display shows: Sn

The sounder always gives key press tones and confirm tones while you are programming it.

INFRA RED LEARN (IR)

If you wish to install the receiver in an environment where there are already many transmitters operating then Cooper Security Ltd recommend that you use infra red learning.

However, if you wish to use radio learning then you must disable infra red learning.

To disable infra-red learn:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Infra Red Learn command.
   The display shows: Ir
3. Press Set.
   The display shows E if infra read learning is enabled, or d if infra red learning is disabled (radio learning enabled).
4. Press Select until the display shows the option you require.
5. Press Set.
   The display shows: Ir

NOTE: If you disable infra-red learn then the receiver enables radio learn. If you enable infra-red learn then the receiver disables radio learn.

SUPERVISION (SP)

If you wish the receiver to signal that it can no longer detect a transmitter it has learned, then you must enable Supervision. With Supervision enabled, if the 768r/769r does not receive anything from a transmitter within a set time, the receiver lights the Supervision LED and operates the Supervision relay.

The Supervision settings in the 768r/769r are designed to match those of the 703r Four Channel Transmitter (see “703r Installation Manual”). If you set Supervision enable on the 703r to “04” then set Supervision on the 768r/769r to “04” as well. Similarly, if the 703r is set to “29” then set the 768r/769r to “29”.

If you are using some other transmitter then the “04” setting on the 768r/769r corresponds to approximately 15 minutes, while the “29” setting corresponds to approximately 120 minutes.

To enable Supervision:

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Sounder command.
   The display shows: SP
3. Press Set.
   The display shows d if Supervision is disabled.
4. Press Select until the display shows the option you require (either 04 or 29).
   The display shows (for example): 04
5. Press Set.
   The display shows: SP

JAMMING (JA)

The 768r can signal attempts to interfere with signals from the transmitters it has learned. If the 768r detects jamming then it lights the Jamming LED and operates the Jamming relay.

To enable Jamming detection:

1. Enter programming mode if the 768r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Jamming command.
   The display shows: JA
3. Press Set.
   The display shows E if the jamming detection is enabled, or d if jamming detection is disabled.
4. Press Select until the display shows the option you require.
5. Press Set.
   The display shows: JA

QUERY (22)

If you wish to see what type of transmitter the receiver has allocated to a channel the you can use the Query command. The display shows a two digit code indicating the transmitter type as follows:

Code	Transmitter
00	Door Contact
01	PIR/Glass Break
02	Not used
03	Pendant
04	Fire/Smoke Detector
05	Reserved for future use.
06	Reserved for future use.
07	Reserved for future use.
08	Telecommand
09	Reserved for future use.
10	Control Unit
11	Reserved for future use.
12	Reserved for future use.
13	Reserved for future use.
14	PA
15	Not used
16	703r Four channel transmitter
17	Two channel transmitter
18	Tilt switch

Table 2. Transmitter Codes

To use the Query command:

1. Enter programming mode if the 768r is not already there.

   The display shows: Ln

2. Press Select until the display shows: ??.
3. Press Set.

   The display shows the first channel alternating with the transmitter code, for example: C 108.

   If the channel has no transmitters the display shows: C 1--

4. Press Select to view the next channel.
5. Press Esc/Del to leave the Query command.

6. TESTING

All signal strength testing must be carried out with the case lid closed.

You can measure signal strengths either for a selected single transmitter, or for all transmitters learned by the receiver.

SIGNAL STRENGTH FOR ONE DEVICE (SG)

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Signal Individual command.
   The display shows: SG
3. Press Set.
   The display shows the first channel number: C 1
4. Press Select until the display shows a channel allocated to the transmitter you wish to measure.
   The display shows, for example: C 3
5. Press Set.
   The display shows the first device number on that channel: d 1
6. Press Select until the display shows the device number of the detector you wish to measure.
   The display shows, for example: d4

7. Press Set.
   The display shows: CL
   You should also hear a single "beep" repeated slowly from the 768r/769r sounder.
8. Close the case lid.
   The 768r/79r flashes the channel LEDs for that transmitter. All the other LEDs glow steadily.
9. Trigger the transmitter.
   All channel LEDs glow steadily.
10. Open the case lid.
    The display shows the device number alternating with the signal strength.
11. Press Esc/Del.
    The display shows: SG

SIGNAL STRENGTH FOR ALL DEVICES (SA)

1. Enter programming mode if the 768r/769r is not already there.
   The display shows: Ln
2. Press Select until the display shows the Signal All command.
   The display shows: SA
3. Press Set.
   The display shows: CL
   You should also hear a single "beep" repeated slowly from the 768r/769r sounder.

4. Close the case lid.

   The channel LEDs for unused channels glow steadily. The LEDs for channels with transmitters assigned flash.

5. Trigger all the transmitters learned by the receiver.

   During the test once you have triggered all the transmitters belonging to a channel then the channel's LED glows steadily. By the end of the test all channel LEDs should be glowing steadily and the receiver will beep to signal that it has detected all transmitters. If any channel LEDs flash then the receiver has not been able to detect one or more transmitters belonging to that channel and you will not hear a beep. If you open the lid before the end of the test then the receiver gives an error tone.

6. Open the case lid.

   The display shows the signal strength of the first device on the first channel, for example: C1d159

7. Press Select.

   The display shows the signal strength of the next device number on that channel.

8. Continue pressing Select.

   The display shows the signal strength of all the other transmitters, in channel/device number order.

9. Press Esc/Del.

   The display shows: SA

Notes:

EC Declaration of Conformity

Cooper Security Ltd.
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GL17 0SZ

Declares that the products described hereinafter as:

768r, 769r

manufactured by Cooper Security Ltd, fully comply with the requirements of the following European Directives:

1995/5/EC

(Radio &Telecommunications Terminal Equipment Directive):

In accordance with the standards set out in:
EN 300 220-3
EN 50131-1
EN 50131-5-3
EN 60950
Signed

Stewart Taylor, Technical Director
Date: 15 February 2004

Printed and published in the U.K.

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Available between:
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08:15 and 12:45 Friday.
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Product Support Fax: (01594) 545401
Part Number 496931 Issue 2