



## BOWS ZONE PAGING KIT (FP1023) BOWS EMERGENCY MIC ZONE PAGING KIT (FP1024)

### Installation Instructions

#### Common Contents of this Kit

Item	Qty	Description
LT0558	1	Installation guide (this document)
SU0336	1	SDM-4 4 zone speaker distribution module (see Figure 1)
FA2570	1	SDM-4 mounting bracket
CN0260	1	3-way demountable connector plug
CN0275	1	4-way demountable connector plug
FA2552	4	M3 Barrel Nut with Threaded Stud
SC0172	4	M3 x 6 Screw
SC0176	2	M4 x 10 Screw
WR0053	100mm	Black wire
WR0059	100mm	Red wire
WR0061	200mm	Yellow wire
WR0062	500mm	White wire

#### FP1023 Only

SU0360	A 4488 Paging console (see Figure 2)
SU0361	A 4489 Audio Switcher (see Figure 3)

#### FP1024 Only

FA2573	1	Zone selector switch label
LM0565	1	BOWS paging zone selector switch loom
SU0020	10	Cable tie
SU0099	5	Adhesive cable tie holder

Before installing the *zone paging kit*, check that these items in the kit are present and undamaged.

### General Description

The BOWS zone paging kits are used to provide optional zone paging on the VIGILANT 50W BOWS (FP1021) and the 100W BOWS (FP1022).

These instructions cover the fitting and wiring of the zone paging kit, including the A 4488 Paging Console with A 4489 Audio Switcher.



Figure 1.

SDM-4 Speaker Distribution  
Module



Figure 2.

A 4488 Paging Console



Figure 3.

A 4489 Audio Switcher

## **BOWS Zone Paging Kit (FP1023) Installation**

1. Install the SDM-4 module as per *SDM-4 Installation* instructions on page 4 of this guide.
2. Install the A 4489 audio switcher as per *A 4489 Audio Switcher Installation* instructions on page 6 of this guide.
3. Set the priority and override tones links on the BOWS Interface board to the desired operation according to the instructions in the BOWS Installation and Operation Manual (LT0554).

Refer to the BOWS Installation and Operation Manual (LT0554) for instructions on operating the paging console.

Up to 2 paging consoles may be connected to the audio switcher. The paging console(s) are connected to the audio switcher by a CAT5e cable with a maximum run distance of 300m. It is recommended not to run the cabling beside any other cabling as this may cause electrical noise to be induced into the audio signals (e.g., mains hum).

Note: The paging console uses 1V balanced audio and is not an Ethernet device. Only the A 4488 Paging Console and A 4489 Audio Switcher must be connected to the CAT5e cable.

The A 4489 Audio Switcher can only be used with the A 4488 Paging Consoles and cannot be used with the obsolete A 4485 Paging Console.

Please refer to the Redback A 4488 Paging Console / A 4489 Audio Switcher Operating Manual for further details.

## **BOWS Emergency Mic Zone Paging Kit (FP1024) Installation**

Required Tools:

- Drill
- 2mm, 4mm and 10mm drill bits

### **Installation**

The Rotary switch is mounted on the existing 3U blank panel as follows.

1. Remove the 3U blank panel from the BOWS.
2. Install the SDM-4 module as per *SDM-4 Installation* instructions on page 4 of this guide.
3. Line up the two ellipses on the drill template (Figure 17) with the two mounting holes on the left hand side of the 3U blank panel.
4. Drill a 2mm pilot hole for each of the two holes as marked on the template.
5. Drill the 4mm and 10mm diameter holes as marked on the template.
6. Deburr the drilled holes.
7. Fit the Zone selector switch label as shown in Figure 5. Align the label with the front panel and to cover the 4mm hole and reveal the larger 10mm hole.

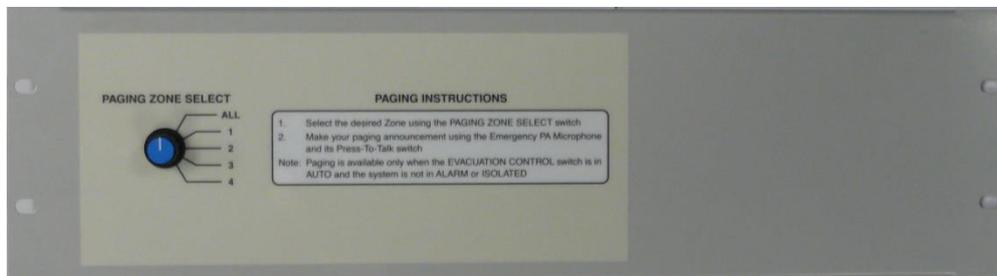


Figure 5. Label position

8. Remove the shake-proof washer, nut and cap from the rotary switch on LM0565.
9. Insert the rotary switch through the 10mm hole in the 3U blank panel.
10. Align the anti-rotation pin on the rotary switch into the 4mm hole.
11. Fit the shake-proof washer and nut to the rotary switch and tighten.
12. Rotate the switch to its most clockwise position.
13. Fit the knob and the cap so that it aligns with position "4" (Figure 6).
14. Connect the other end of the loom (RJ45 plug) to the PAGING CONSOLE input of the BOWS Interface Board (Figure 9).
15. Fasten the loom to the cabinet with the cable ties and holders.
16. Set the Paging and Emergency Mic priority links on the BOWS Interface board to HI and the Remote Audio priority link to LOW. Set the Paging Override Tones link to the desired operation according to the instructions in the BOWS Installation and Operation Manual (LT0554).

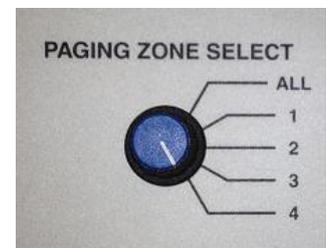


Figure 6.

Rotary switch alignment

Refer to the BOWS Installation and Operation Manual (LT0554) for instructions on operating the paging.



Figure 4.

BOWS with FP1024  
Paging Kit installed

### SDM-4 Installation

1. Screw the 4 Barrel Nuts into the 4 threaded inserts in the corners of the SDM-4 mounting bracket as per Figure 7.
2. Mount the SDM-4 on the barrel nuts using the M3 x 6 screws as per Figure 8.
3. Mount the SDM-4 mounting bracket to the left-hand side of the BOWS gearplate using the two M4 x 10 screws as per Figure 9.

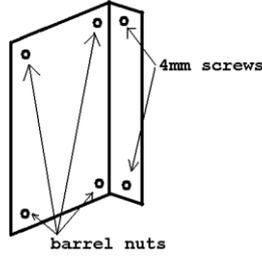


Figure 7. SDM-4 bracket assembly

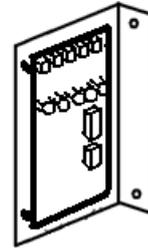


Figure 8. SDM-4 mounting

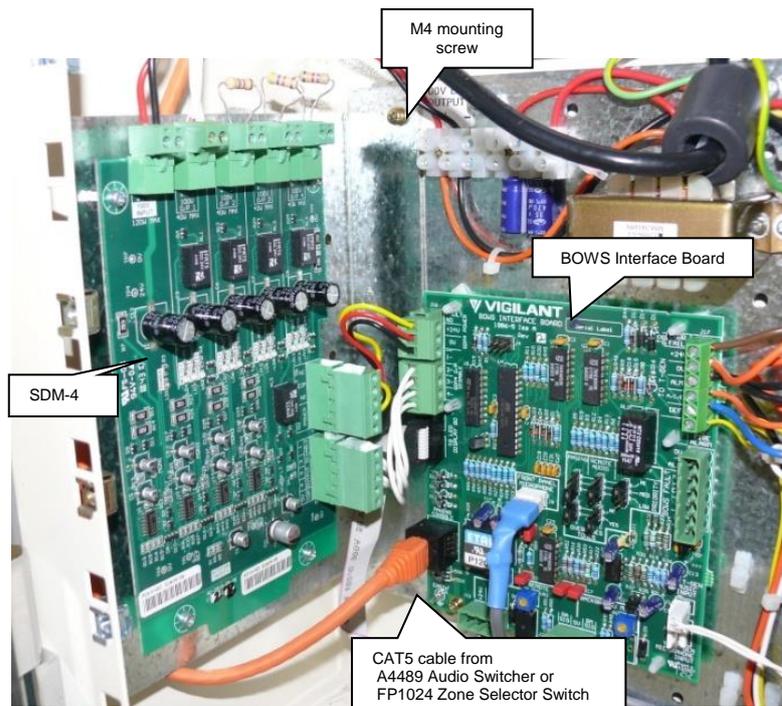


Figure 9. SDM-4 mounting

4. Wire the two SDM-4 5-way demountable connectors to the BOWS 3- and 4-way demountable connectors as shown in Figure 10.

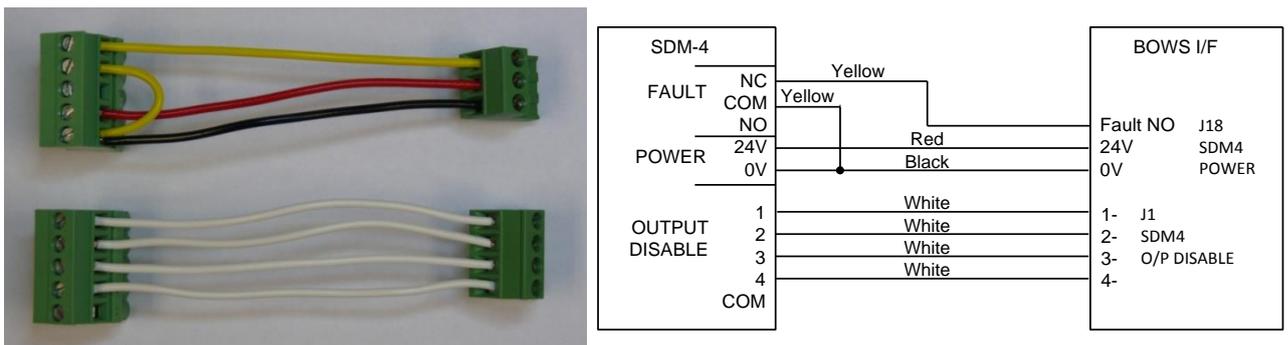
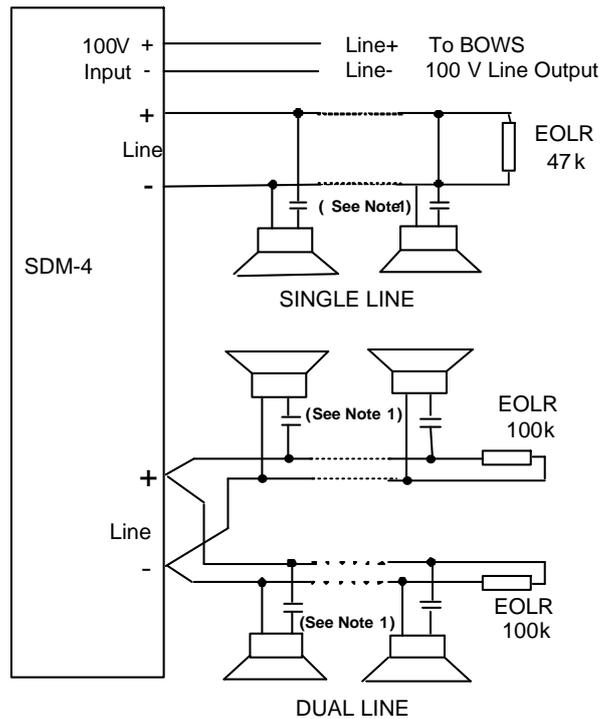


Figure 10. SDM-4 to BOWS Interface board looms

5. Plug the looms into the SDM-4 module and the BOWS Interface board as shown in Figure 9.
6. Wire the 100V speaker line output (from the T-GEN on the 50W BOWS or from the screw terminal block on the 100W BOWS) to the 100V INPUT connector on the SDM-4 as shown in Figure 11.



Note 1: Capacitor 10V bipolar. Value 1-5 $\mu$ F per watt of speaker load.

Figure 11. SDM-4 100V Speaker Line Wiring

Each of the four 100V speaker line outputs of the SDM-4 module must be terminated with a 47k EOL resistor for SINGLE LINE or with two 100k EOL resistors for DUAL LINE configurations.

The EOL resistor must be fitted whether or not speakers are connected.

Four 47k EOL resistors are supplied with the SDM-4.

## **A 4489 Audio Switcher Installation**

**Warning:** Do not plug the Redback A 4488 Paging Console directly into the BOWS Interface board as the console may be damaged.

### **Required Items**

- Redback A 4489 Audio Switcher
- CAT5 Cable (1-2m in length)
- 20cm of thin black wire
- 2.1mm dc plug (optional)

### **Instructions**

1. Determine where you are going to mount the relay module in the BOWS cabinet. If only 1 T-GEN is fitted it may be mounted in the 2nd T-Gen position.
2. Plug one end of the CAT5 cable into the BOWS Interface board and cut the cable so that the wires will reach both the 24VC IN socket and the AUDIO IN connector on the audio switcher (typically about 1m).
3. Unplug the CAT5 cable, then strip about 15cm of the sleeving off the cut end of the cable and strip the ends of the 8 wires exposing about 5mm of wire.
4. Check the wire colours inserted into the RJ-45 plug match those shown in Figure 12, with the Orange/white wire connected to pin 1.

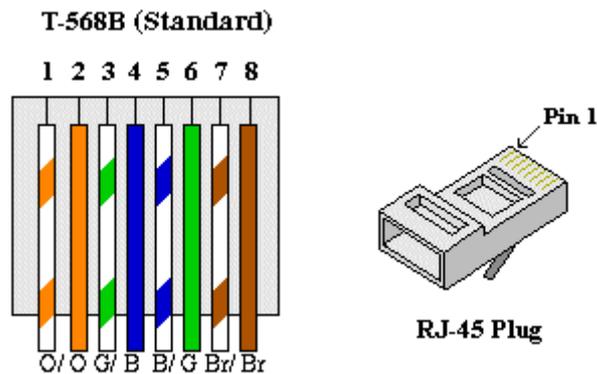


Figure 12. CAT5 (T-568B) wire Colours – Note: Wire colours may vary from those shown.

5. Connect the wires to the audio switcher as shown in Table 1 and Figures 14 and 15. If the wire colours are in a different order to those shown in Figure 12 connect the wires to the relay module according to the pin position rather than the wire colour.
6. For powering the audio switcher you can either purchase a 2.1mm dc plug and solder the wires to it as shown in Figure 15 or cut the mains adapter lead (supplied with the relay module) about 10cm from the dc plug and connect the plug to the wires using a connector block or by soldering.
7. Unplug the dc socket and connectors from the audio switcher.
8. Plug the CAT5 cable into the BOWS Interface board and turn on the BOWS.
9. With a meter check that the voltage between the centre pin and the outside of the dc plug is between 24V and 28Vdc, and that the centre pin is +.
10. Turn off the BOWS and plug the connectors into the audio switcher.
11. Plug the paging console into the audio switcher (either socket).
12. Turn on the power to the BOWS and turn on the audio switcher's power switch. Check that the green ON indicator on the audio switcher turns on and the zone indicators on the paging console turn on for about a second.
13. Using the console select each zone in turn and verify that speech from the microphone is broadcast over

the correct zone, is at a suitable volume, is not distorted and not broadcast over the other unselected zones. Note the paging volume can be adjusted at the BOWS via the VR3 PAGING volume control located on the BOWS Interface Board, and via volume controls located on the paging console (refer to the paging console manual for details).

Note up to 2 paging consoles may be connected to the audio switcher.

**Table 1. Wiring Details**

CAT5 Cable To BOWS Interface Board		Signal	A 4489 Audio Switcher
Pin	Colour (T-568B)		
1	O/W	+24V	+24VDCin
2	O	0V	-24VDCin and Audio In -
3	G/W	Line+	Line Out+
4	B	Line-	Line Out-
5	B/W	Zone 1-	Zone 1-
6	G	Zone 2-	Zone 2-
7	Br/W	Zone 3-	Zone 3-
8	Br	Zone 4-	Zone 4-



Figure 13. Redback A 4489 Audio Switcher

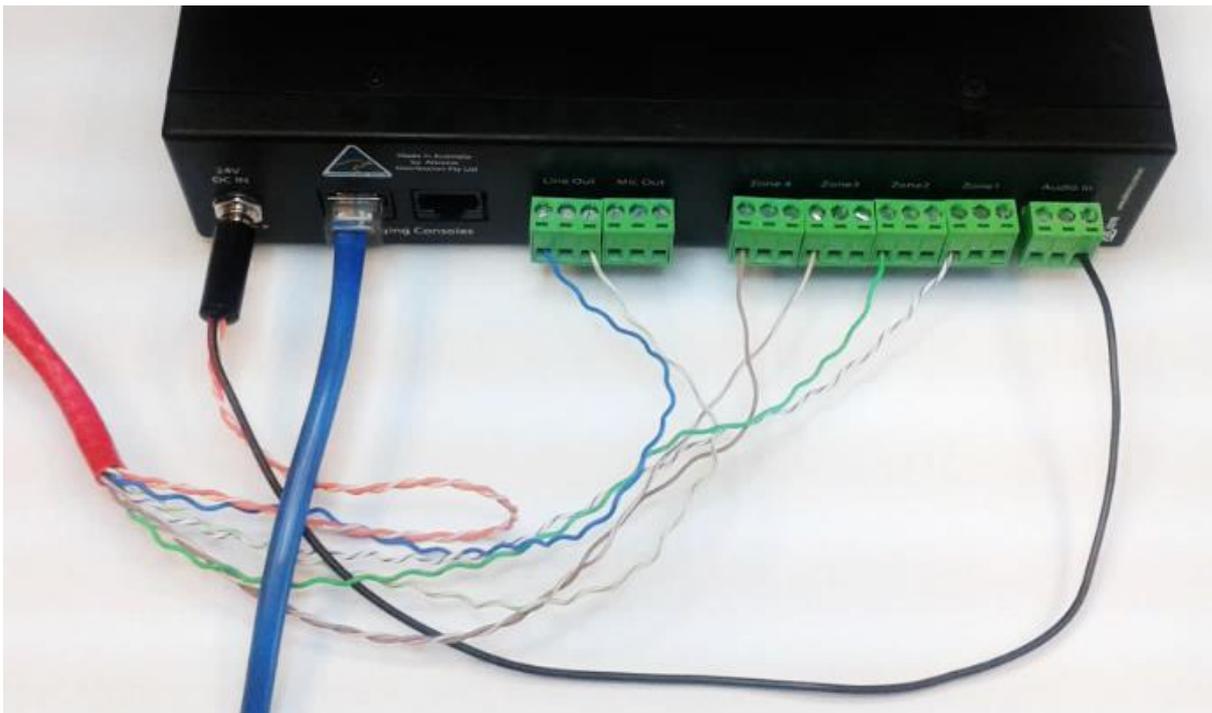


Figure 14. Redback A 4489 Audio Switcher – Wiring

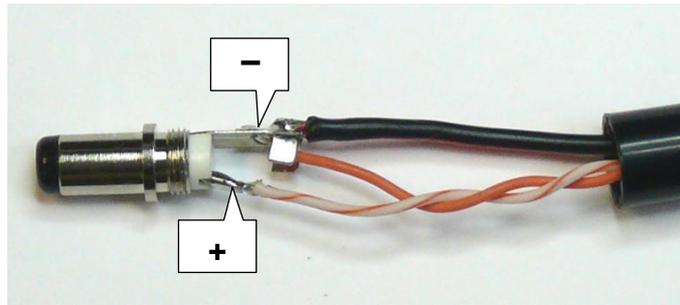


Figure 15. Redback A4489 Audio Switcher – DC Plug Wiring

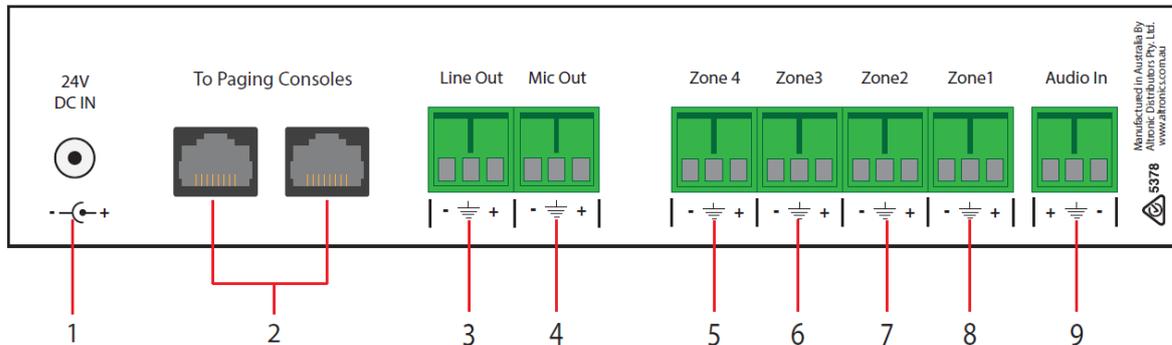


Figure 16. Redback A 4489 Audio Switcher – Rear View

### A 4489 Rear Panel Connections

#### 1. 24V DC IN connector

2.1mm DC jack (centre pin positive). Connect the Orange/White wire to the centre pin (+), and the Orange wire to outside (0V) plus the black wire to Audio In '-'. Refer Figures 14 and 15.

#### 2 RJ45 connectors

For connecting to the A 4488 Paging Console. The relay module supports up to 2 consoles. If only 1 console is required it can be plugged into either port.

#### 3 Line Out

Line level audio output from the paging console/s. This is connected to the green/white and blue wires as per Table 1.

#### 4 Mic Out

This is the low level audio output from the paging console/s. Not used.

#### 5-8 Zone 1-4 Audio Outputs

These are the relay outputs activated by the paging console zone buttons. The '-' terminals are connected to the wires as shown in table 1.

#### 9 Audio In

Connect the '-' terminal to 0V (orange wire).

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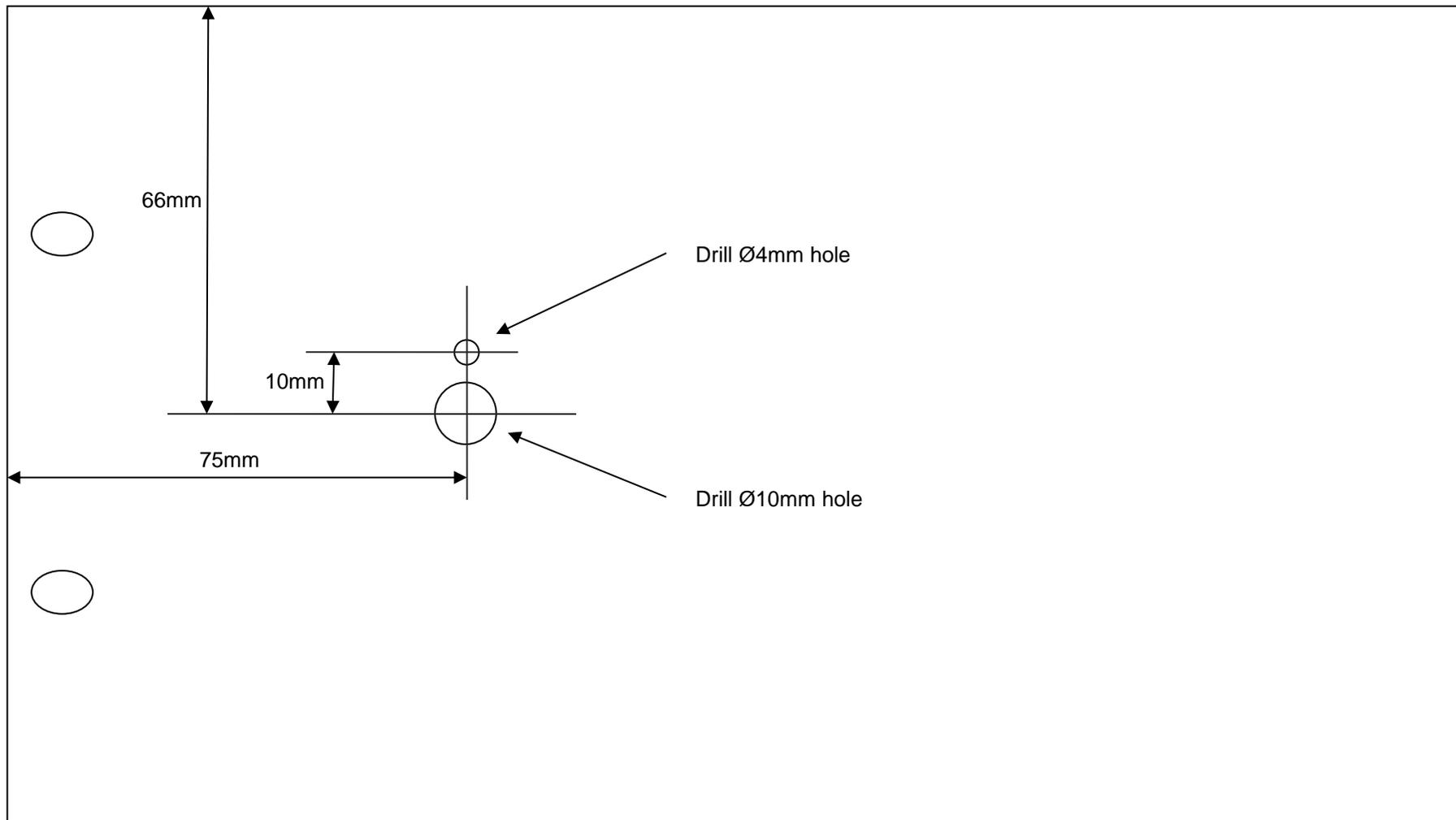


Figure 17. Emergency Mic Zone Paging Selector Switch Drill Hole Template