

Talkback Substation

**With vibrator and beeper.
Optional Digital Remote Control.
Clearcom and Jands compatible.**

Model DTB/r



Features

- Selectable vibrator and/or beeper indication of calls.
- Bright, wide angle flashing call light uses multiple LEDs.
- Microcomputer controlled.
- Can be assigned to one of four "call groups"
- Microphone and beeper mute from *any* other beltpack.
- Microphone compressor.
- Momentary or latching microphone button.
- Powder coated die cast aluminium case. No plastic.
- Virtually indestructible spring steel belt clip.
- Replaceable standard metal XLR connectors. No plastic shell to break.
- Works with industry standard headsets.
- Switchmode power supply for reduced current drain.
- Optional Digital Remote Control of advanced features.

Description

A microprocessor controlled Talkback Substation (Intercom Beltpack) designed to make communication easier.

Attention getting beeper and vibrator makes contacting crew more reliable.

Beeper and vibrator are individually selectable on each beltpack.

1 Headphone volume control.

The headphone amplifier is capable of driving industry standard headsets to sufficient levels to enable it to be used in high ambient noise environments.

A typical headset is the Beyer DT109 with 2 by 400 ohm earphones. These are wired in parallel. Single sided headsets use just one 400 ohm earphone. The headphone amp will drive loads anywhere from 50 ohms and higher.

2 Call button.

Pressing the call button sends a DC *call* signal over the audio circuit.

3 Call Light.

Flush mounted wide viewing angle LED light flashes in response to the DC *call* signal. The DC *call* signal is compatible with that used by Clearcom and Jands talkback substations.

4 Microphone button.

Turns the microphone on or off.

A short press of the button will latch the microphone either on or off.

A continuous press longer than 100mS will provide a non-latching function and turn the microphone on for as long as the button is depressed.

A double press of the button will also latch the microphone on for those operators who are accustomed to this function on Clearcom substations.

The microphone amplifier also incorporates a compressor to even out loud and soft users.

5 Mode button.

This button selects the beeper and/or the vibrator. When selected, the vibrator and/or beeper will operate when a call signal is received.

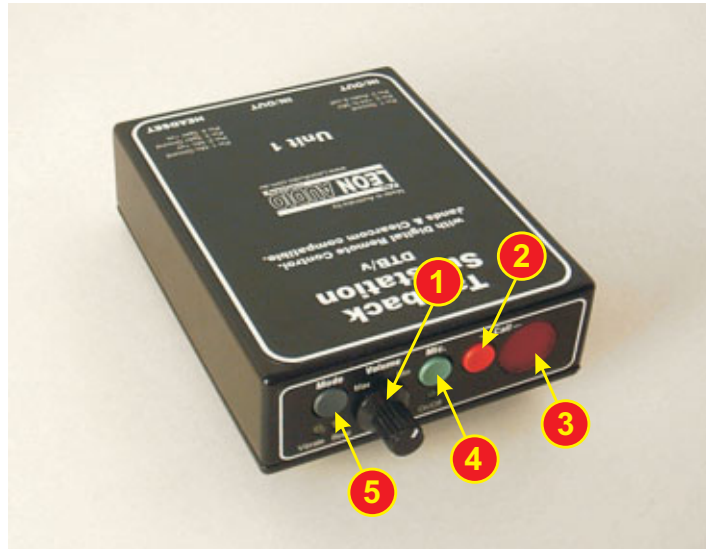
There are two yellow LEDs adjacent to the Mode Button, one for each of the beeper and vibrator. Four presses of the Mode Button will cycle through all 4 possible combinations of beeper and vibrator.

1st press: Beeper on.

2nd press: Vibrator on.

3rd press: Both on.

4th press: Both off.



Other Features.

Microphone Mute.

Any substation can be used to mute open microphones on other substations.

No special master station or option boxes are needed.

Microphone mute is achieved simply with a timed 5 to 6 second call. Press any Call Button for 5 to 6 seconds and all the microphones will mute. You don't even need to count, as the Call Light will flash fast at the 5 second mark as a prompt.

All beepers are also deselected with this command. Beepers are just turned off but not locked out. Beepers can only be locked out via the Control Unit.

Calls of less than 5 seconds, or more than 6 seconds, will not activate the microphone mute function.

The substation will also respond to Clearcom's *mic kill* where the power supply is interrupted for 100mS.



Substation's belt clip and connectors.

Packaging.

- Satin black powder coated diecast aluminium case.
- Roadie proof spring steel belt clip.
- Common industry standard metal XLR connectors.
- Volume control has a metal shaft mounted direct to the case.

Basically, there's very little plastic.

Remote Control.

An optional remote control unit is available to control a number of advanced features. A brief summary of the remotely controlled features follows. See the Remote Control Unit for full details.

Mute Mics.

Mute microphones on all substations.

Lockout BEEPERS.

Turns off and locks out beepers on all substations. Handy before a show starts.

Groups.

The belpacks can be programmed to respond to calls from any one of four call groups. (There is only one audio circuit).

Call + Beeper.

Call substations on any or all of the 4 possible groups and sound their beeper, even if it has been locked out or deselected at the substation.

Call + Vibrate.

Call substations on any or all of the 4 possible groups and operate their vibrator, even if it has been deselected at the substation.

Reset.

Resets all substations to Group #1
Re-enables all beepers if locked out.

S/M Talk.

Mute all mics and turn on stage manager's mic with just one button.

Cast Call.

Allows the Stage manager to mute all microphones and turn his mic on with just one button. An optional *Cast Call* unit activates, passing talkback audio to the Cast Call (dressing room) PA system.

Belpack Commands.

Setting Belpack's Group Number:

- 1: Press and hold grey button.
- 2: Yellow LEDs flash current group number after 3 seconds.
- 3: Press Green button 1-4 times to select new group, or just release the grey button to leave it as is.
- 4: Yellow LEDs flash new group number.
- 5: Release grey button.

Reset:

Press all 3 buttons for 3 seconds.
Resets to Group #1
Re-enables the beeper if locked out.

Group number, beeper and vibrator enable status, and "S/M's substation" configuration, are all remembered when the system is powered down.

Digital Commands.

The remote functions are controlled from the Digital Talkback Controller by sending digital data over the intercom wiring to the substations.

To maintain compatibility with existing talkback substations, the data is encoded by a modem into pulses of supersonic tones around 39kHz. These tones are superimposed on the audio circuit.

A modem in the belpack converts these tones back into data ready for processing by the microcomputer.

39kHz was chosen as it not audible and does not interfere with speech. It is far enough away from audio frequencies to enable simple filtering to separate the data from the speech. Cable attenuation is low enough to permit operation over very long cable runs.

Each command consists of one byte of data. Transfer rate is 300 baud for high reliability.

Long cables.

Very long cable runs may produce an excessive voltage drop, especially when multiple substations are at the far end of a long cable run and/or the cable is thin. When the voltage drop is too great, the vibrators will disable themselves. The Call LEDs may also run at reduced intensity to lower power consumption.

Four Substations, with vibrators selected, will work over 300 metres of 24 AWG cable.

Four Substations, without vibrators selected, will work over 1,000 metres of 24 AWG cable.

24 AWG is pretty thin stuff. Typically it is 3mm diameter microphone cable. It is also the same gauge as CAT5 cable.

Expected performance will generally be much better than this as the size of the earth conductor in a microphone cable will be much greater than 24 AWG.

If more substations are required at the far end, or the cable needs to be longer, try the following...

- 1: Use heavier gauge cables to reduce voltage drop.
- 2: Use shorter cables to reduce voltage drop.
- 3: Relocate the Power Supply to the far end of the cable.
- 4: Avoid using the vibrators. They are power hungry.
- 5: Use multiple cable runs with fewer substations on each run.

Specifications.

Power.

Recommended 24-36V DC
The substations will operate on as little as 9 volts, although the microphone and headphone amplifiers may distort prematurely with loud signals.

Idle Current: 25mA
Average Talk: 30mA
Signalling with light only: 35mA
Signalling with beeper and vibrator enabled: 70mA

Headphones.

Typically 200 to 400 ohms per side.
Minimum load 50 ohms.

Microphone.

Low impedance Dynamic.
Typically 200 ohms.

Connectors.

Headset. 4 pin XLR chassis male
Pin 1: Microphone Ground
Pin 2: Microphone +ve
Pin 3: Headphone Ground
Pin 4: Headphone +ve

Intercom Line: 3 pin XLR M+F
Pin 1: Ground
Pin 2: 24-36V DC power
Pin 3: Audio + call signalling

Remote Control.

Digital data via 39kHz FM signal.

Dimensions.

Diecast case excluding knob and connectors:
Width: 95mm (3.8")
Height: 120mm (4.7")
Depth: 34mm (1.3")

Weight.

0.47kg (16.8 ounces)

Models.

2 different models are available.

DTB/b Basic Model.

No remote control ability.

DTB/r Remote model.

For use with or without the Remote Control unit.

Each of these 2 models is available with or without either the beeper or vibrator.

A no frills 30 volt 1 amp power supply is also available.

Warranty

The Leon Audio Talkback Substation is guaranteed for two years from date of original purchase against defects in workmanship and materials. If such malfunction occurs, the item will be repaired or replaced (at our option) without charge for materials or labour if delivered prepaid to THE LEON AUDIO COMPANY. Unit will be returned prepaid. Warranty does not cover finish or malfunction due to abuse or operation at other than specified conditions. Repairs by other than THE LEON AUDIO COMPANY or authorized agents will void this guarantee.