S6000 Beltpack

Instruction Manual

TRANTEC
SYSTEMS

Introduction:

Thank you for purchasing your Trantec S6000 Beltpack.

If you require additional copies of these instructions, they can be obtained from our web site, http://www.trantec.co.uk, along with other information about the Trantec range.

- **Background Information:**

The S6000 Beltpack is a microprocessor controlled UHF transmitter, which can operate on up to 64 different channels. The exact selection of channels available will depend on how your system has been configured. The ability to change operating channel will be immediately useful when configuring for a multi-user site or where the presence of other radio microphone users may cause problems when using a fixed channel system.

- **General Radio Microphone Operating Guidelines:**

Always try to locate the receiver as close as possible to the transmitter, as this minimises the chance of there being any drop out. Although this is most unlikely with a diversity system, the greater the transmitting range, the greater the chance of problems. Always try to ensure a line of sight signal path between the transmitter and receiver - obstacles such as walls can significantly reduce the radio signal strength. Obviously the transmitter and receiver must be on the same channel. If you are using more than one system simultaneously, choose a set of intermodulation free frequencies. Please refer to the channel listings at the end of these instructions as a guide to finding a suitable set of frequencies. Note that although your system may be capable of operating on channels other than the license exempt ones, it is illegal to do this in the UK without first obtaining a license. It is wise to avoid placing the receiver near to computer or mobile telephone equipment, as this can create unwanted radio interference. As emphasised in these instructions, always operate any radio microphone system with its antennas fully extended. Always test a radio microphone system in the location where it is to be used by doing a 'walk test'. This is where the system is tested as the transmitter is walked around the area in which it is to be used. This will normally show up any problem areas, allowing you to try a new receiver location. By adjusting the location of the receiver, or even just the alignment of its antennas, it should be possible to obtain trouble free operation over the desired area, provided that it is not too large to exceed the transmitter's range, which is typically around 100m.

- **Guarantee:**

All Trantec products are guaranteed for a period of one year from date of purchase against defects in materials and workmanship. In the event of a claim under guarantee the system should be returned to your dealer in its original packaging and with proof of purchase. Defects caused by modification, misuse or accident are not covered by the guarantee.

Due to our continual policy of research and development we reserve the right to alter specifications without prior notice.

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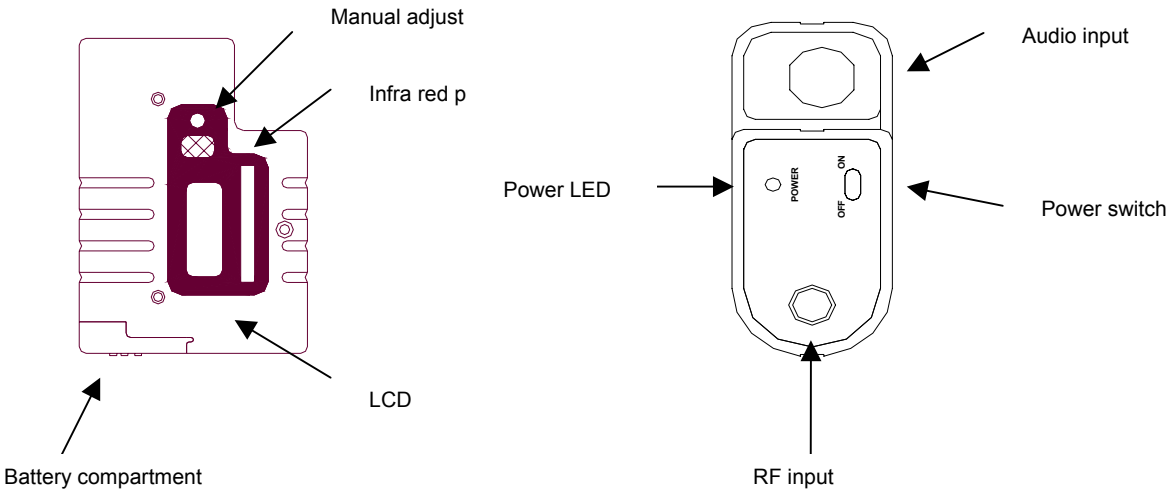
S6000L Transmitter Set-up:



Screw the external antenna into the antenna connector on the top of the beltpack. Under no circumstances should the length of a wire antenna be shortened, coiled up or wrapped with the audio lead as this will reduce the performance of the radio system.

Insert the Lemo connector for the lapel microphone into the audio connector using the two red idents as a polarity guide. Do not twist this connector. Keep the audio lead and the antenna separated at all times.

Open the battery compartment of the beltpack and insert a 1.5v 'AA' alkaline battery this should be inserted negative end first, positive end toward the battery compartment door.

Switch on the beltpack using the switch on the top. The LED will light and the LCD will display the current gain setting followed by the current loaded frequency.

- **Changing the Transmitting Frequency**

Next to the LCD there is a screwdriver adjust, this is actually a dual function digital switch. When the beltpack is initially turned the LCD first shows the current gain then the current loaded frequency. For approximately 10 seconds the decimal point will flash, during this flashing period the user can use a screwdriver to adjust the frequency. The decimal point will then stop flashing and the screwdriver adjust can now be used to configure the gain. The operating frequency is stored permanently in non-volatile memory so it will remain the same even if the battery is replaced.

The frequencies loaded into the transmitter can be changed through the infrared port on either the receiver front panel, or a PALM pilot both these are described later

The exact selection of channels available will depend on how the transmitter has been programmed in the factory. It can contain up to 64 unique channels, but your transmitter will not necessarily contain this many channels.

- **Changing the gain**

After the decimal point has stopped flashing the screwdriver adjust can now be used to configure the gain. The LCD displays between 0 and 9, 0 being the minimum gain and 9 the maximum. The gain is stored permanently in non-volatile memory so it will remain the same even if the battery is replaced

- **Optimising the Gain of your system:**

In order to achieve the best possible audio performance from your radio system, it is worth spending a few minutes setting the optimum gain level.

Adjust the gain of your transmitter, as described in the appropriate section. The optimum setting for this will be found by first adjusting the transmitter gain so that when the maximum audio signal expected just lights the receiver AF bar display to the +3 dB. If this level is surpassed then distortion is likely. The optimum setting will vary according to who is using the microphone and how close the microphone is placed to the mouth.

Once the transmitter gain is optimised, it is necessary to match the receiver's output level to your mixing desk or PA system.

- **Battery monitoring**

  The battery voltage is displayed on the LCD of the transmitter and is shown in three segments, the first goes out when 60% of the battery life has expired, the second goes out at 80%. The battery level is encoded with as a very low frequency signal and sent over the RF link so the actual battery voltage can be monitored from the receiver.

- **Using a S5000 transmitter with the S6000 receiver**

Both the S5000 and S6000 transmitters are high quality and will work well with the S6000 receiver. As S6000 beltpack has been designed using the latest circuit techniques, this means we had to make some fundamental changes to the operation of the companding (noise reduction) circuitry. In order to make the S6000 receiver audio circuit compatible with S5000 we have included both types of companding circuit on each receiver. The other difference between the two types is the battery monitoring, the S5000 has a single threshold when the battery status is deemed to be low, whilst the S6000 continually reports the actual voltage level throughout the life of the battery. Either type of transmitter being used can be selected for each receiver from the monitor interface.

- **Differences between S5000 and S6000 transmitters**

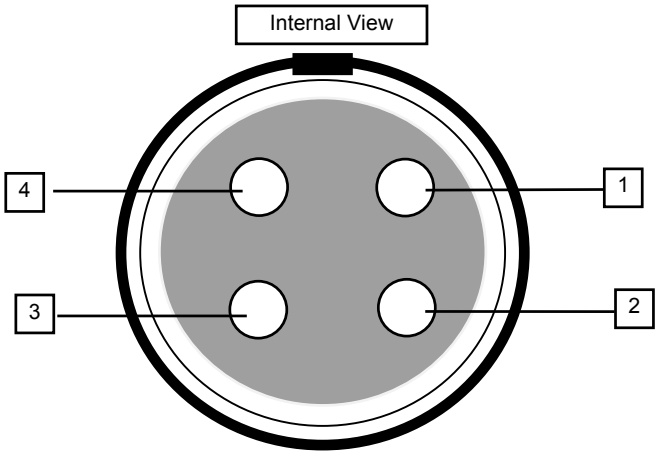
  Apart from the obvious size difference between the two units the circuits vary fundamentally in the following ways: -

	S5000	**S6000**
Operating frequency range	24 MHz	70 MHz
Battery type	1 x "PP3" cell	1 x "AA" cell
Battery life	8 hours	8 hours
Frequency setup	Data cable	Infra red
Battery monitoring	Threshold	Full range
Tone grip	32 kHz	32 kHz
Control disable	no	yes
Power disable	no	yes
Smart power circuit	no	yes
RF power switch	no	yes

For S6000LTX Transmitter Lemo Connector Details see Appendix 2

Appendix 1.

S6000LTX Transmitter Lemo Connector Details:



Pin Connections : Pin 1 Ground, Pin 2 +9v, Pin 3 Audio/+9v, Pin 4 Audio

Trantec TS259:	**Trantec TS33:**	**Trantec TS44:**
Pin 1 Screen	Pin 1 Screen	Pin 1 Screen
Pin 2 Not connected	Pin 2 Not Connected	Pin 2 Red
Pin 3 White	Pin 3 White and Red	Pin 3 Not Connected
Pin 4 Not Connected	Pin 4 Not Connected	Pin 4 White
Trantec TS55:	**Trantec TS912:**	**Sennheiser MKE2:**
Pin 1 Screen	Pin1 Screen	Pin 1 Screen
Pin 2 Red	Pin 2 Red	Pin 2 Not connected
Pin 3 Not Connected	Pin 3 Not Connected	Pin 3 Red
Pin 4 White	Pin 4 Yellow	Pin 4 Not Connected
Sony ECM77:	**Sanken COS-11PT:**	**Beyer MCE5:**
Pin 1 Screen plus Clear	Pin 1 Screen	Pin 1 Screen
Pin 2 Not Connected	Pin 2 Black	Pin 2 Red
Pin 3 Red	Pin 3 Not Connected	Pin 3 Not Connected
Pin 4 Not Connected	Pin 4 White	

Appendix 2.

Frequency Guide:

See web site for US freq plans.

- **Technical Specifications**

Frequency Range: 590-806MHz excluding 608-614Mhz.
Available in 3 Groups 734-806, 662-734, 590-662MHz
Frequency Arrangement: 64 Frequencies on a 25kHz grid
Output Power: 13dBm @ 50 Ohm
Nominal Deviation: 15
RF Harmonic & Spurious Radiation: < -45dBC
Frequency Stability: < 50ppm -30 – 50degrees C
Power Consumption: 150mA, 1.5V "AA" Alkaline Battery
Battery End Point: 1.0V
Operating Time: 8 hours (Typical)
AF Frequency Response: 70Hz-18kHz
Audio Input: LEMO FGG304, Pin 1 - 0v, Pin 2 - DC 9v Bias, Pin 3 - Audio + Plus, Pin 4 - AC Coupled Audio
AF Gain: 10 Step Gain (Input level 0dB to -22dB)
Dimensions: 50 x 68 x 20
Weight: 68g
Regulatory information: Fully meets requirements of FCC pts 74 subpart H

- **Accessories**

Spare Lemo connector (audio)	**-**	Trantec part number xxxx
Spare Lemo connector (RF)	**-**	Trantec part number xxxx
Sennheiser MKE2 lavalier microphone – Lemo	-	Trantec Part number xxxx
¼ wave whip antenna	-	Trantec part number xxxx
Leather carry case for transmitter	-	Trantec part number XXXX