Telex Model BTR-80N Base Station

Owners / Users Manual
(Preliminary Information)

General Description:

The Telex model BTR-80N base station transceiver is a component of the BTR-80N wireless intercom system. The BTR-80N is a rack mountable, full duplex, wireless intercom radio for use in a professional installation such as television or cinema production.

Each BTR-80N base station can be used with one to four TR-80N or TR-82N beltpacks. The BTR-80N transmits within the 482 to 608 MHz range (TV Channels 16-36). It receives in the 614 to 722 MHz range (TV Channels 38-55). The BTR-80N transmitters operate within an 18 MHz wide section of the transmit frequency range. The receiver also operates with a single front-end that is 18MHz wide and then block down-converts the received frequencies to four IF strips.

The RF coverage range of the BTR-82N communicating to beltpacks may be up to 200 meters (656 ft).

The transmitters have three selectable conducted output power levels; Off, 10mW, 50mW, 100mW and 249mW. This user selectable power level allows intermodulation reduction plus the lower of transmit power to just meet the communication link's need.

Operating frequencies can be selected from pre-set groups or the user can select special operating frequencies within the 18 MHz wide allotments.

From the front panel LCD display and buttons the following menus may be obtained:

- Group and Channel
- Transmit Frequencies
- Receive Frequencies
- Volume and Microphone Gain Setting
- Transmit power level (Off, 10mW, 50mW 100mW, 249mW)
- Receiver Squelch Level
- Intercom type
- Intercom input/output levels
- Auxiliary input/output levels
- Stage announce output level

The on/off control, talk button, talk light, low battery indicator, microphone overmod. light, audio channel 1 or 2 button and lights, auxiliary and intercom level indicator lights, portable station connection buttons are all on the front panel.

The BTR-80N base station can be powered by 100 – 240 VAC, 50 – 60Hz, via an IEC receptacle. The unit may also be powered via a 12 - 15VDC receptacle on the rear panel.

Controls and Connections

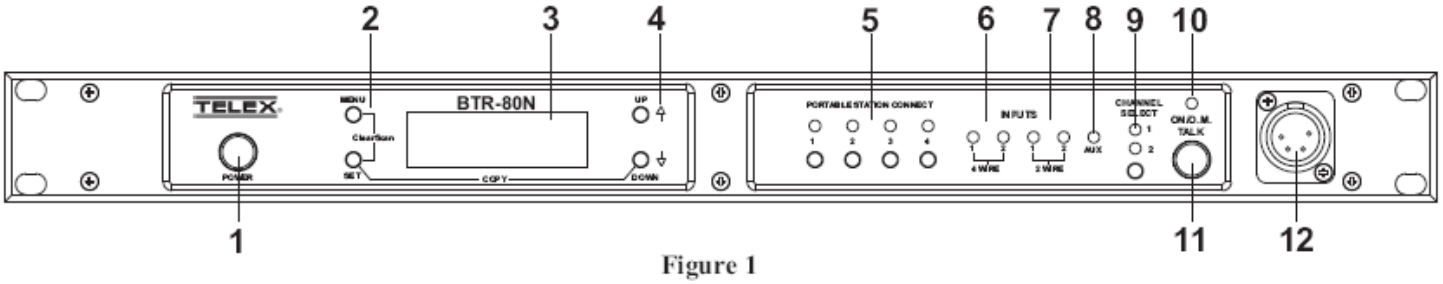

Figure 1
BTR-80N - Front Panel

1. **Power switch**.

2. **[Menu] and [Set] buttons** – Used to select menus and set options on the LCD.

3. **Backlit Graphics LCD (Liquid Crystal Display).**

4. **[Up] and [Down] buttons** – Used to select base station options on the LCD.

5. **Portable Station Connect** – Buttons used to enable or disable the respective receiver's audio. GREEN LED = Audio enabled, LED OFF = Audio disabled.

6. **4-wire Selection/Peak Input Indicators** - Dispays which 4-wire intercoms are active with a green indication. A red indication means the intercom input level may be too high.

7. **2-Wire Selection/Peak Input Indicators** - Displays which 2-wire intercoms are active with a green indication. A red indication means the intercom input level may be too high.

8. **Auxiliary Selection/Peak Input indicator** - Display if auxiliary input is 'ON" with a green indication. A red indicaiton means the intercom input level may be too high

9. **Headset Intercom Select** – Controls the intercom to which the local headset is connected. Each press of the button changes the connection; channel 1, channel 2, both.

10. **Talk/Peak Light** – LED is green when talk button #11 is active. A normal mic gain setting will cause the LED to flash red on the loudest speech levels. If the gain is too high, the LED will be red at normal speech volumes.

11. **Talk Button** – Press to enable the audio path from the local headset. LED #10 will turn green when enabled. A quick press and release latches button on. If the talk function is latched on, pressing the talk button again will turn it off.

12. **Local Headset Connector** – Male XLR connector for Telex units, Female XLR connector for RTS units. A dynamic or electret headset microphone is automatically detected. Microphone gain and volume are settable in the software menus.

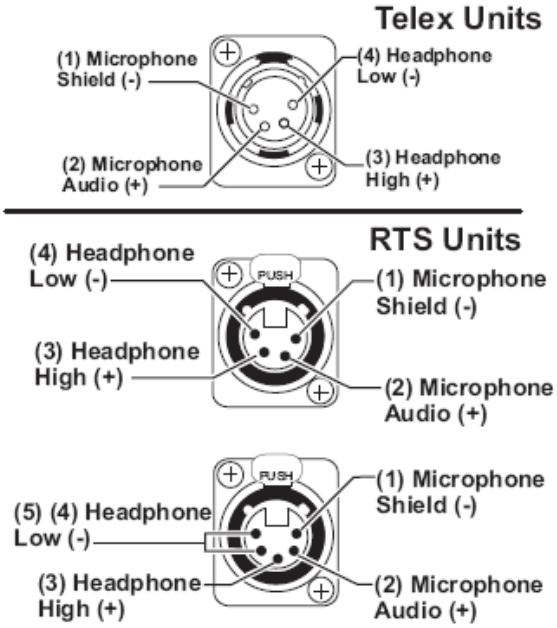

Figure 2
Local Headset Wiring

Controls and Connections

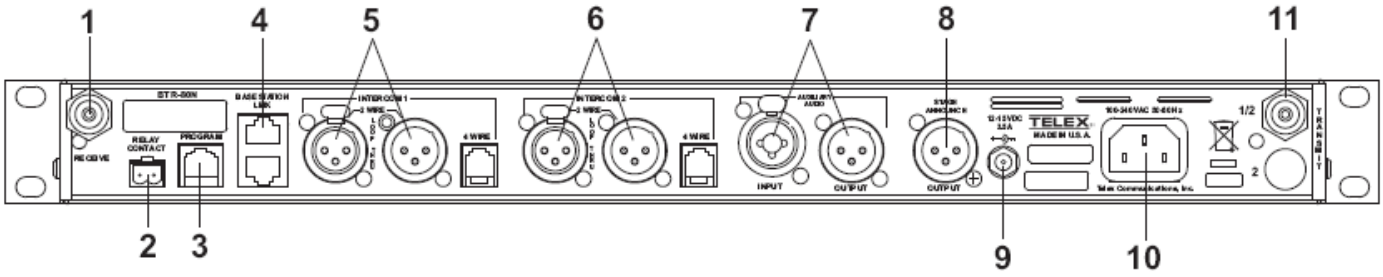

Figure 3
BTR-80N - Rear Panel

1. **Receive Antenna** - Female "TNC" Connector. Color band on antenna must match color dot on base station.

2. **Relay Contact** – A dry contact closure which is activated when a beltpack user presses the stage announce (SA) button. Normally Open (NO). One amp at 24V maximum.

3. **Program Connector** - use to update flash in unit.

4. **Base Station Link Jacks** – When multiple base stations are connected through this jack, it allows wireless talk around (WTA) from the beltpacks to be routed from the system with it's transmitters off to the system(s) with it's transmitters on.

5. **Intercom A** – Interface to wired intercom system 1.
   2-Wire – Male and female 3-pin XLR connectors wired in parallel. The connectors are switched to the appropriate intercom configuration via the I/C Select Switch.

   4-Wire – An RJ-11 type jack compatible with "Matrix" type intercom systems.

6. **Intercom B** – Interface to wired intercom system 2.
   2-Wire – Male and female 3-pin XLR connectors wired in parallel. The connectors are switched to the appropriate intercom configuration via the I/C Select Switch.

   4-Wire – An RJ-11 type jack compatible with "Matrix" type intercom systems.

7. **Auxiliary Input/Output** – One 3-pin female XLR/ 1/4 inch combination input connector and one 3-pin male XLR output connector.

8. **Stage Announce Output** – Passes the audio from any of the base station's beltpacks that have selected stage announce (SA).

9. **DC Input Jack** – Accepts 12-15 VDC, 3.5 Amps to power base station from a D.C. source.

10. **Power** – IEC receptacle. Accepts 100 – 240 VAC, 50 – 60 Hz.

11. **Transmit Antenna** - Female "TNC" Connector. Color band on antenna must match color dot on base station.

Specifications:

General:

Input Power……..……..100-200 VAC, 50 – 60 Hz, IEC receptacle
Antennas……one TX, one RX: 1/2-wave, TNC male connector
TX / RX……...Two TX, one RX with 4 IF strips. Frequency agile, 25kHz steps within 18MHz wide allotments
Frequency Range……TX…….482 – 608 MHz
RX…….614 – 722 MHz
(within 18MHz wide allotments)
FCC ID:……..B5DM528
IC ID:…….1321A-BTR80N

Transmitter:

RF Power Output……Selectable between levels: Off, 10mW, 50mW, 100mW, 249mW typical (terminated)
Final Voltage (249mW)……..4.75 VDC
Final Current (249mW)……..57mA
Modulation type……..….FM
Deviation…….5 kHz
Audio Frequency Response……100 Hz to 7 kHz
Microphone Sensitivity ……..……15 mV

Receiver:

Sensitivity……<0.6uV for 12 dB SINAD Typical
Audio Frequency Response……..100 Hz to 7 KHz
Audio Output (headset)…….….40 mW, 600 Ohms (1% Distortion)
RF Frequency Stability…….….Better than 0.005%
IF Selectivity…….....3 dB at 30kHz

Approval Information:

FCC
The Telex BTR-80N Transmitter/Receiver base station is type accepted under United States Federal Communications Commission Part 74.

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Licensing of Telex equipment is the users responsibility and licensability depends upon the user's classification, user's application and frequency selected. Telex strongly urges the user to contact the appropriate telecommunications authority for any desired clarification.

CAUTION: Any changes or modifications made to the above equipment could void the user's authority to operate the equipment.

Safety Instruction to Base Station Installers and Users

1. Use only manufacturer or dealer supplied antenna. Antenna minimum safe distance, as calculated from the FCC requirements, is 9.4cm. However, the FCC default for the minimum safe distance is 20cm. Antenna gain: 1.5dBi.

2. The FEDERAL COMMUNICATIONS COMMISSION has adopted a safety standard for human exposure to RF (Radio Frequency) energy, which is below the OSHA (Occupational Safety and Health Act) limits.

3. To comply with current FCC RF Exposure limits, the antenna must be installed at or exceeding the minimum safe distance show here, and in accordance with the requirement of the antenna manufacturer or supplier.

4. Antenna substitution: Do Not substitute any antenna for the one supplied by or recommended by the manufacturer or radio dealer. You may be exposing person or persons to harmful radio frequency radiation. You many contact your radio dealer or the manufacturer for further instructions.

5. WARNING: Maintain a separation distance from the antenna to person(s) of at least 20cm.

   You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure that the minimum separation distance (above) is maintained between the antenna and nearby persons for satisfying RF exposure compliance.

   The operation of this transmitter must satisfy the requirements of the General Population/Uncontrolled Exposure Environment for work-related use. Transmit only when person(s) are at least the minimum distance from the properly installed, externally mounted antenna.

Industry Canada

The Telex BTR-80N Transmitter/Receiver base station is Certified to Industry Canada RSS-123 rules.

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