

User Manual BP-319 / BP-351 User Station



RTSTM

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Customer Support

Technical questions should be directed to:

Customer Service Department
RTS/Telex
12000 Portland Ave South
Burnsville, MN 55337 U.S.A.
Telephone: (800) 392-3497
Fax: (800) 323-0498

Shipping to Manufacturer for Repair or Adjustment

All shipments of RTS products should be made via United Parcel Service or the best available shipper, prepaid. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock absorbing material. All shipments must be sent to the following address and must include the Return Authorization.

Factory Service Department
Telex Communications, Inc
8601 East Cornhusker Hwy
Lincoln, NE 68507

Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper collect.

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DO NOT RETURN ANY EQUIPMENT DIRECTLY TO THE FACTORY WITHOUT OBTAINING A RETURN AUTHORIZATION. Be prepared to provide the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

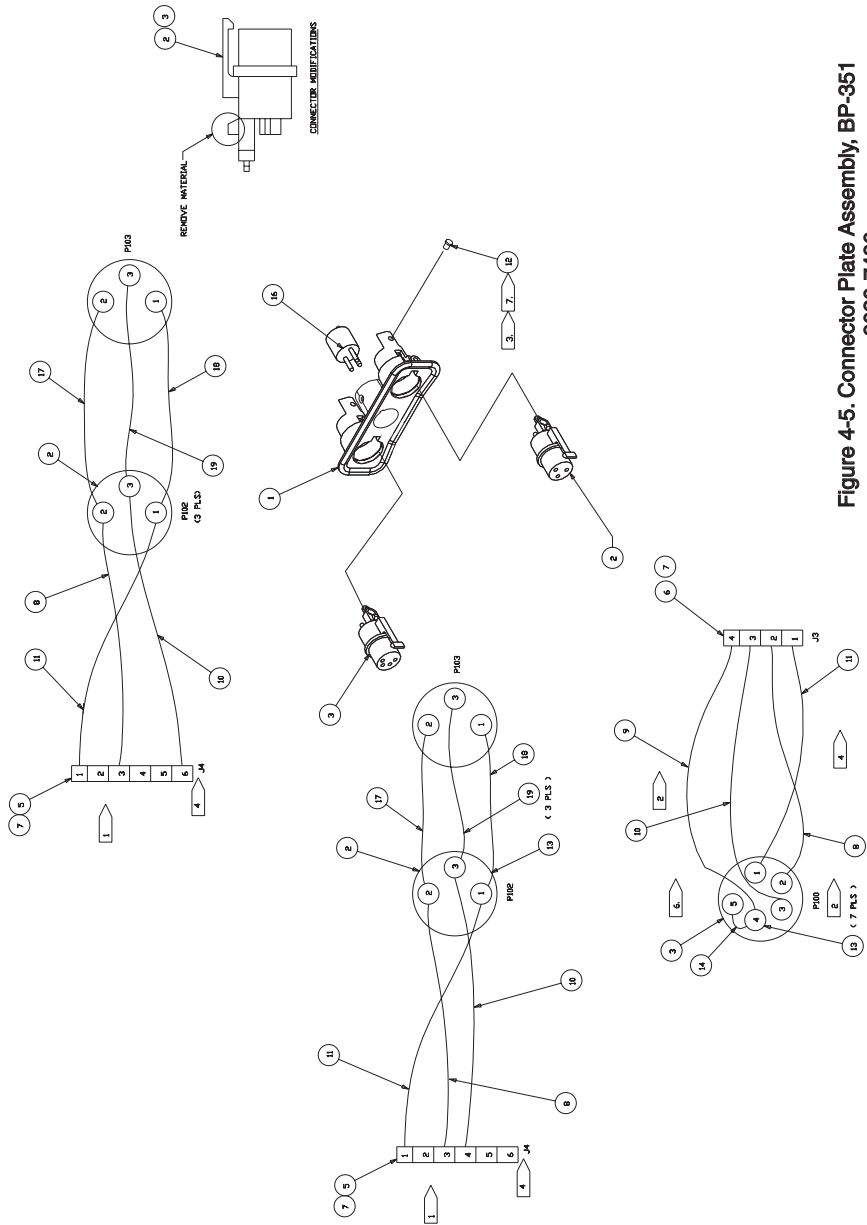


Figure 4-5. Connector Plate Assembly, BP-351
9020-7486

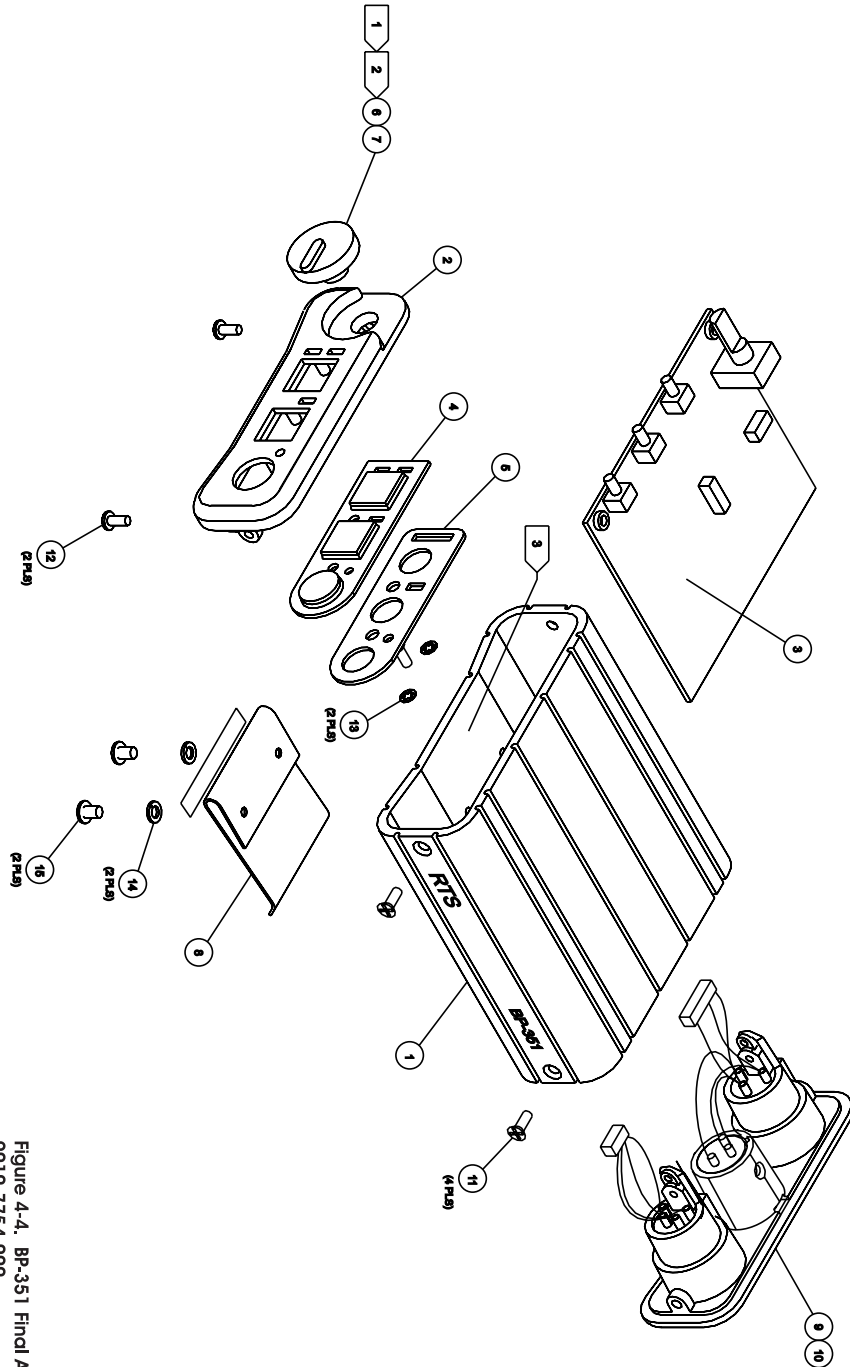
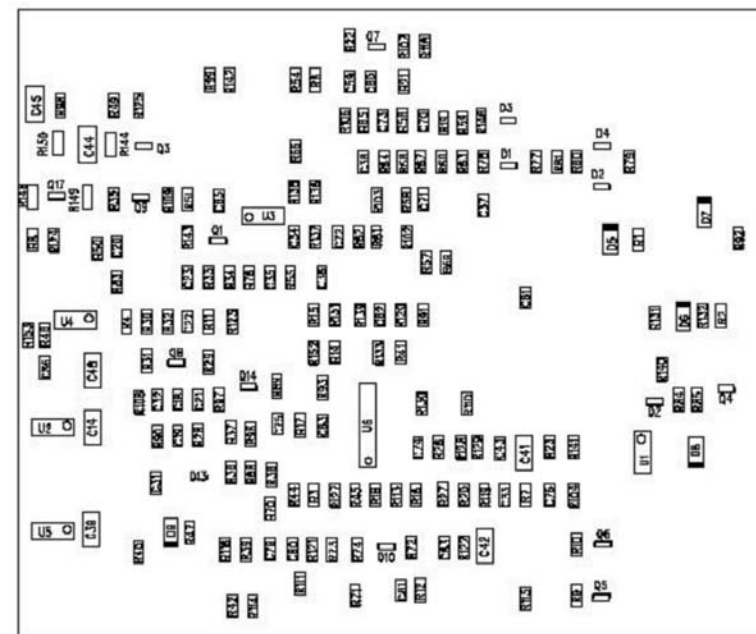


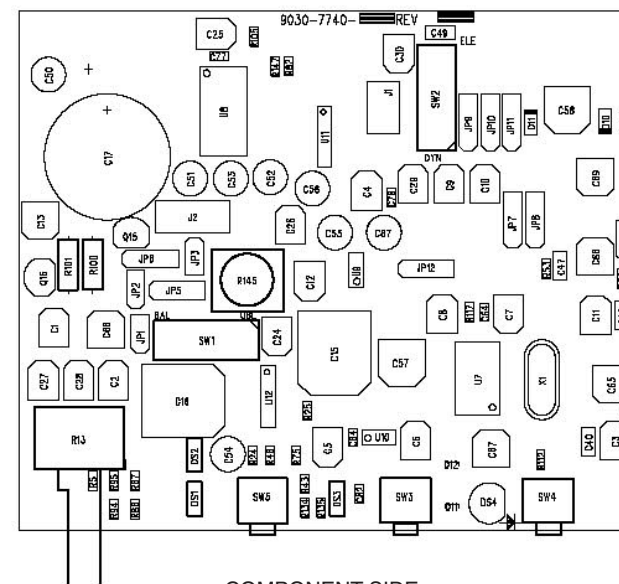
Figure 4-4. BP-351 Final Assembly
9010-7754-000

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FOIL SIDE



COMPONENT SIDE

Figure 4-3. PC Board Assembly BP-319 and BP-351

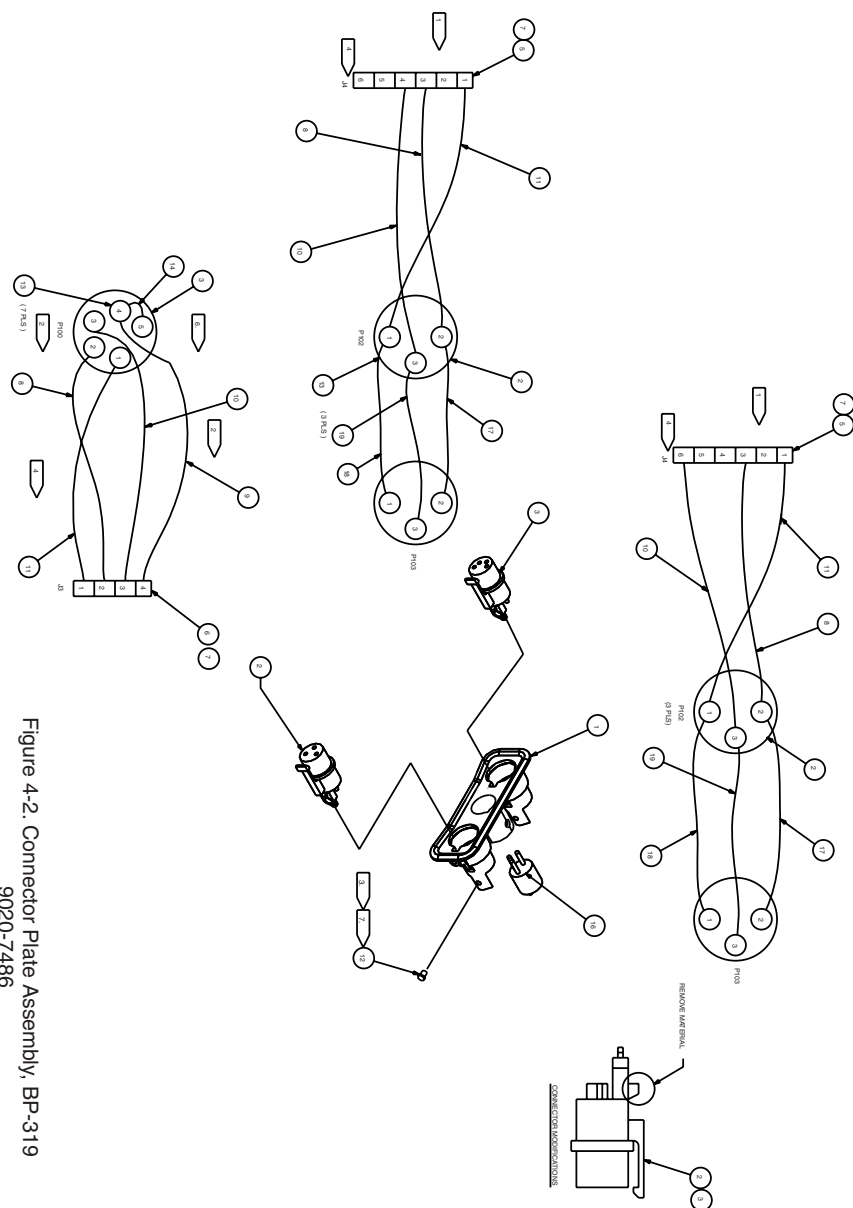


Figure 4-2. Connector Plate Assembly, BP-319
9020-7486

1 Description and Specifications

DESCRIPTION

General

The BP-319/351 is a portable user station for use with RTS 2-wire intercom systems. The BP-319 is a microprocessor controlled one-channel intercom, where the BP-351 is a microprocessor controlled two-channel select intercom belt pack. Both have connections for headset/earset microphones (Dynamic or Electret). The factory setting is for Dynamic.

FEATURES

Features of the BP-319/351 include:

- 1) Call function that allows the user to send or receive call signals to other devices on the intercom channel, including Audible Call Alert on the listen side.
- 2) Microprocessor controlled Microphone Kill Detect.
- 3) Powered externally, via the intercom system power supply on channel one.
- 4) Headset/earset 4 or 5-pin XLR connection set for intercom operation.

CONNECTIONS & CONTROLS

The BP-319/351 has the following connections and controls:

Intercom volume control.

Headset connectors that accept an XLR type 4 or 5-pin male connector.

Line connector that accepts an XLR type 3-pin male connector for the intercom line and power input.

A loop through connection connects several belt packs in a chain. Since this is often the preferred method of connection, a line loop connector has been added to new units (see figure Figure 1).

SPECIFICATIONS

General

Channel Supplied Power Requirements

30 VDC nominal (standard RTS line), 45 to 70 mA.

Environmental Requirements

Storage: -20°C to 80°C; to 95% humidity, non-condensing

Operating: 0°C to 50°C; 0% - 95% humidity, non-condensing.

Dimensions: 4.75" (120.7 mm) H x 3.5" (95.3 mm) W x 1.6" (40.6 mm) D

Weight: Approximately 13 oz. (364 g).

INTERFACE REQUIREMENTS

Headset/Earset:

50 to 200 Ω dynamic microphone

50 to 600 Ω headphones

RTS Intercom Channel:

Output Level: 0.775 Vrms (0dBu) nominal

Input Level: 200 Ω $\pm 5\%$

Bridging

Impedance: greater than 10,000 Ω .

Call Signaling:

Send 20kHz ± 100 Hz, 240 Vrms $\pm 10\%$

Receive 20kHz ± 800 Hz, 100 mVrms $\pm 10\%$

Mic-Off Frequency Detect:

24kHz ± 800 Hz, 100 mVrms

Noise Contribution

less than -60 dB on the line.

Headphone Amplifier

Voltage Gain:

18 ± 3 dB from the line

Maximum Output:

60 mW into 150 Ω

Frequency Response:

200Hz to 8kHz ± 1 / -4dB nominal

Audible Alert:

1kHz, at the headset/earset

Total Harmonic Distortion

Less than 0.2% nominal at 50mW from the line

Dynamic Microphone Amplifier

Voltage Gain:

Mic to Channel; 45 ± 3 dB, before limiting.

Mic to Headphone; adjustable, 65dB $\pm 10\%$ range into 150 Ω

Frequency Response:

200Hz to 8 kHz +1/-4dB
nominal.

Total Harmonic Distortion:

Less than 0.2% nominal at
Channel output

Electret Microphone Amplifier:

Voltage Gain:

Mic to Channel; 27 \pm 3 dB,
before limiting
Mic to Headphone; adjust
able, 45dB \pm 10% into 150 Ω

Frequency Response:

200 Hz to 8kHz +1/-4dB
nominal.

Total Harmonic Distortion:

Less than 0.2% nominal at
channel output

**CONNECTOR PIN
CONFIGURATIONS****Intercom Channel Connector****XLR-3 M/F**

Loop Thru	BP-319	BP-351
Pin 1	Common	Common
Pin 2	+30 VDC IN	+30 In/ Syst Chan 1
Pin 3	Syst Chan 2	Syst Chan 2

Headset Connector

Type: XLR-4F

Pin 1	Headset microphone low
Pin 2	Headset microphone high
Pin 3	Headphone common
Pin 4	Headphone Chan 1 or Chan 1 and Chan 2 audio

Type: XLR-5F

Pin 1	Headset microphone low
Pin 2	Headset microphone high
Pin 3	Headphone low
Pin 4	Headphone high
Pin 5	No Connection

** Sometimes pin 4 and 5 connect
together when using a dual-sided
headset.

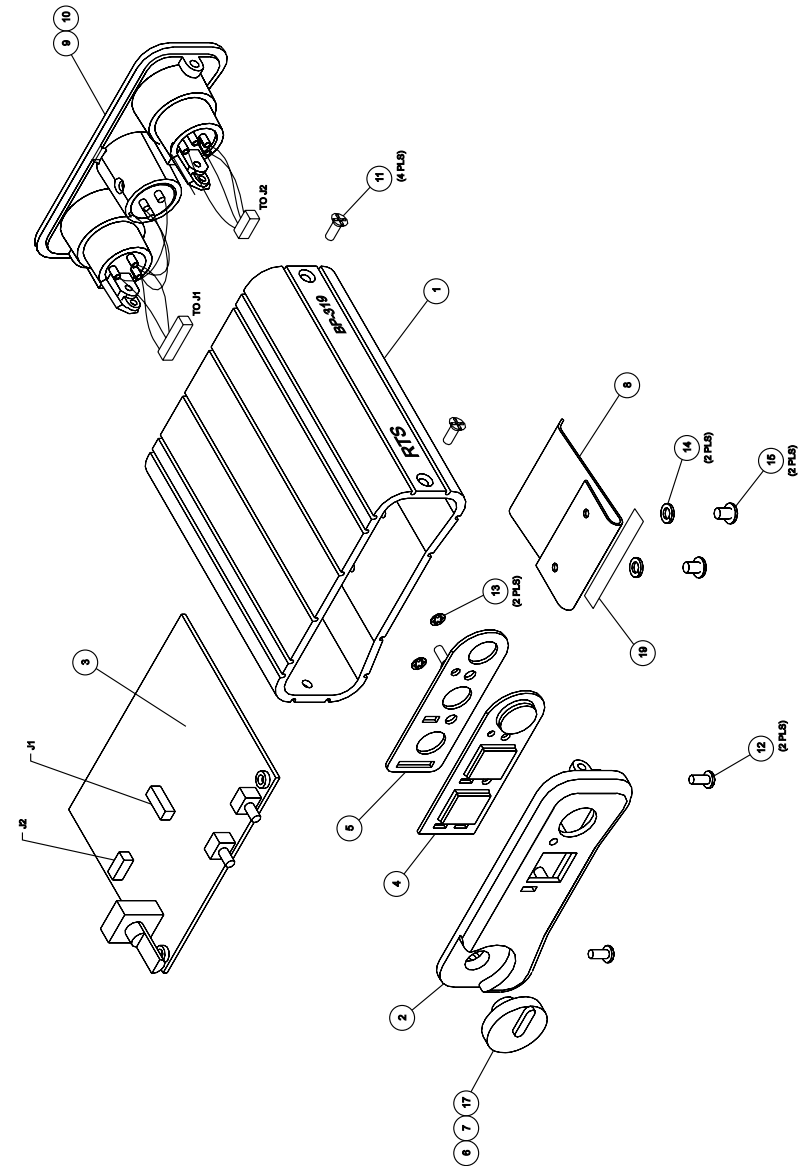


Figure 4-1. Final Assembly, BP-319
9010-7753-000

4 Diagrams

Drawing Number	Title
9010-7486-000	Figure 4-1. Final Assembly, Model BP-319
9020-7486-000	Figure 4-2. Connector Plate Assembly, Model BP-319
9030-7486-000	Figure 4-3. PC Board Assembly, Model BP-319 and BP-351
9010-7754-000	Figure 4-4. Final Assembly, Model BP-351
9020-7486-000	Figure 4-5. Connector Plate Assembly, Model BP-351

2 OPERATION EXTERNAL CONNECTIONS & CONTROLS

Note: The numbers refer to the callouts in Figure 1.

- Volume Control:** Use this control to adjust the headset/earset listen level.
- Chan Select Button (BP-351 only):** The Chan button allows the user to select which intercom channel is active. The yellow indicator next to 1 or 2 lights to show the active channel. Press Chan button to change the channel selection.
- Call Button and Indicator:** The Call function allows the user to send or receive signals to other devices on the intercom channel selected. The Call button operates in two ways:
CALL RECEIVE: When there is an incoming call signal, the indicator is red. (If Audible Call Alert is enabled, incoming calls will cause beeps in the headset.)
CALL SEND: To send a call signal to all stations on a selected channel, press and hold the Call button until a verbal response is received. The indicator will glow red.
- Talk Button and Indicator:** The Talk button activates the headset microphone and operates in two ways:
LATCHED MODE: Tap the button once to talk. The indicator will glow green. Tap the button again when finished with a conversation.
MOMENTARY MODE: Press and hold the button to talk momentarily. Release the button when finished talking.
- Sidetone Control:** When using a headset, this control adjusts your own voice level heard in the earphones. To adjust the level, tap the Talk button once to turn on the headset microphone. Then, use a small flathead screwdriver to increase or decrease your voice level while talking into the microphone. (This control is accessible by removing one screw of the belt clip.
- Headset Connector:** This connector accepts an RTS boom microphone.

- Intercom Channel Connector:** The BP-319/351 intercom channel is connected via a 3-pin female connector with a 3-pin male loop through connector. The BP-319/351 is powered from the intercom system power supply.

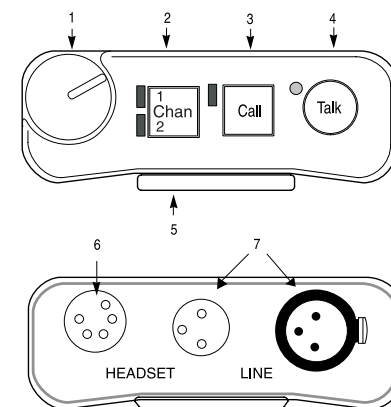


Figure 1. Connections and Controls, BP-319 and BP-351

SETTING MODES OF OPERATION:

Perform the following steps to change the BP-319/351 mode of operation.

- Both the *Talk* and *Call* indicators should be off.
- Press and hold both the *Talk* and *Call* keys, then release both keys. The Call indicator should now glow red. (The number of beeps heard in the headset indicates the current mode of operation.)
- Press the *Call* key to change to the next mode of operation. Each press of the *Call* key causes the BP-319/351 to change to the next mode of operation.
- When the desired mode is reached, press the *Talk* key to select the mode and exit.

Note: Each time the intercom system power is turned on, the BP-319/351 will reset to the default mode of operation (Mode 2, see Table 1.)

MODE (beeps)	MIC KILL	AUDIBLE CALL ALERT
1	Disabled	Disabled
2 (Default)	Enabled	Disabled
3	Disabled	Enabled
4	Enabled	Enabled

Table 1. Operating Modes

BP-319-351 OPERATION PROGRAMMING

The BP-319/351 uses four modes of operation to control the Mic Kill and Audible Call Alert features (see table 1, page 8).

Mic Kill:

When this feature is enabled and a Mic Kill signal is received from the intercom channel, the BP-319/351 microphone will be turned off the Mic Kill signal will have no affect on microphones attached to the BP-319/351.

Audible Call Alert

When this feature is enabled, an audible beep is heard in the headset whenever there is an incoming call from the same intercom channel.

When this feature is disabled, no audible beep is heard for incoming calls.

INTERNAL SWITCHES, JUMPERS, AND ADJUSTMENTS

There are several internal switches, jumpers and adjustments that affect operation. These are described below. To gain access to the switches, jumpers, and adjustments, disconnect all power and line connections. Remove two screws from the top of each side of the case and two screws from the bottom of each side of the case. The jumper and switch locations are shown in Figure 2.

Sidetone Adjustment

The side tone adjustment is accessible either internally (see Figure 2) or by removing the belt clip mounting screw shown in Figure 1.

To adjust the level of your own voice heard in the earphones, tap the Talk button once to turn on the headset microphone. Then, use a small flathead screwdriver to increase or decrease your voice level while talking into the microphone.

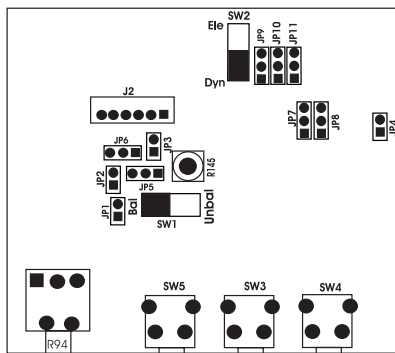


Figure 2. Internal Jumpers and Switches

Jumper Switch Number	Jumper or Switch Function	Default Setting
JP6	Power Source Selection Pins 1 & 2 shorted: no connection. Pins 2 & 3 shorted: channel 1 power source	Pins 2 & 3 shorted
JP9	Differential, single-ended, dynamic mic Single-ended Mic: Pins 1 & 2 shorted Differential Mic: Pins 2 & 3 shorted	Pins 1 & 2 shorted

Table 2. Internal Jumpers

3 Replacement Parts Where To Obtain Parts

Parts may be obtained directly from Telex at:
Telex/RTS Systems
12000 Portland Ave. S.
Burnsville, MN 55337
(877) 863-4169
(800) 323-0498 (fax)

Final Assembly (BP-319) (Refer to 4-1 for Item No. locations)

Item No.	Description	Part No.
1	Case, BP-319	90607374-016
2	Top Plate	90707374-007
3	Not Used	
4	Circuit Board Assembly	90307740-100
5	Knob, Nylon Body	91605636-01
6	Knob, Boot	91605636-02
7	Screw, 4-40 x 0.25, Flat Head	800124-001
8	Belt Clip	9107600-000
9	Screw, 4-40 x 0.25, Pan Head	51845-038
10	Keypad	19067374-001
11	Plate	91107374-001
12	Pushnut	51900-002
13	Screw, 6-32 x 3/16, Pan Head	51845-073
14	Washer, Lock, Split, #6	50086-001

Final Assembly (BP-351) (Refer to 4-4 for Item No. locations)

Item No.	Description	Part No.
1	Case, BP-351	90607374-017
2	Top Plate	90707374-006
3	Circuit Board Assembly	90307740-200
4	Keypad	19067374-001
5	Plate	91107374-001
6	Knob, Nylon Body	91605636-01
7	Knob, Boot	91605636-02
8	Belt Clip	9107600-000
9	Connector Plate (5-pin)	90207486-003
10	Connector Plate (4-pin)	90207486-013
11	Screw, 4-40 x 0.25, Flat Head	800124-001
12	Screw, 4-40x0.25, Pan Head	51845-038
13	Pushnut	51900-002
14	Washer, Split, #6	50086-001
15	Screw, 6-32 x3/16, Pan Head	51845-073

Connector Plate Assembly (BP-319) (Refer to Figure 4-2 for Item No. locations)

Item No.	Description	Part No.
1	Connector Plate	90807486-000
2	Connector, XLR-4F	40055-10
3	Connector, XLR-5F	40055-15
5	Connector, 6-pin	59958-006
6	Connector, 4-pin	59958-004
7	Contact, Connector	59958-200