

BSRU100™

UHF Base-Station Radio Transceiver

User Guide

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BSRU100™ has five sets of connectors: J1, J2, J3, J4, J5 (see Figure 1).

BSR front

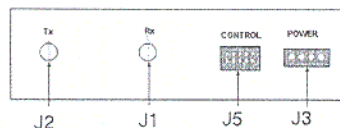
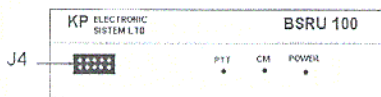


Figure 1: BSRU100™ Connectors

- **J1:** BNC connector connects an Rx UHF antenna.
- **J2:** BNC connector connects an Rx/Tx UHF antenna.*
- **J3:** 12.5 VDC power supply

- **J4:** A 10-pin contact connector connects:
 - +VB
 - GND
 - RS232 IN
 - RS232 OUT
 - PTT
 - AUDIO IN
 - DIAGNOSTIC MODE
 - AUDIO OUT * (optional)
- **J5:** A D-type 15-pin rear panel connector connects:
 - PTT
 - PTT2 OUT
 - RS232 IN
 - RS232 OUT
 - GND
 - AUDIO OUT
 - AUDIO IN
 - CHANNEL MONITOR
 - RSSI OUT
 - RSSI TO AI
 - DATAOUT

Preparing for Operation

Before installing BSRU100™, perform the following preparations:

- Setting communication parameters
- Connecting assembly cables and power supply connector.
- Self Test

Setting Communication Parameters

(See BSRU100™ Programming Guide.)

Connecting Assembly Cables

To Connect the $\rho=50$ Ohm Cable:

1. Connect one end of the $\rho=50$ Ohm cable to J2, the Rx/Tx BNC connector.
2. Connect the other end of the $\rho=50$ Ohm cable to the 50 Ohm load, according to its application wiring diagram.

To Connect the DC plug to the J4 DC Power Connector:

1. Connect one end of the cable to J5, the D-type 15-pin rear panel connector.
2. Connect the other end of the cable, according to its application wiring diagram.

Self Test:

1. Connect the 12.5 VDC power supply to the DC current wires.
2. Observe the Self-Test LEDs (see Figure 2).

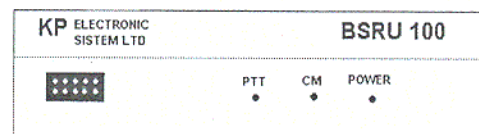


Figure 2: Self-Test LEDs

Table 1: Self-Test LEDs

LED Indicator	Status
LED PTT	
ON (red)	Tx mode
OFF	Rx mode
2 Flashes	Overload*
3 Flashes	Predriver/Driver
1 Flash	Time out timer
4 Flashes	PLL
4 Flashes	Synthesizer
Power LED	
Green	Normal
Red	Dead Battery
CM LED	
Green	Free
Red	Channel Monitor
Flashes red/-green	RF/IF Amplifiers

In addition to the signals in Table 1, there is an error-status word in the Gup10™ Utility Program.

BSRU100™ General Description

The BSRU100™ UHF transceiver operates as a two-way base-station radio in half duplex mode at remote central stations and repeaters. It is modulated by an FSK signal.

Functions:

- Receives and transmits:
 - FSK (frequency shift keying) modulated signals
 - DF (direct frequency) modulation
- Performs receiving and transmitting frequency programming changes
- RSSI output
- Measurement analog output
- Visual control*
- Channel monitor control
- PTT control
- On/Off indicator

*See Table 1: Self-Test LEDs

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BSRU100™ Programming Guide

Using KP's Gup10™ Utility Program, the BSRU100™ parameter values listed below can be programmed or modified. An RSINT001 adapter connects between BSRU100 and a PC (see Figure 3).

- Transmit frequency (MHz)
- Receiver frequency (MHz)
- Tx time out (0-240 sec.)

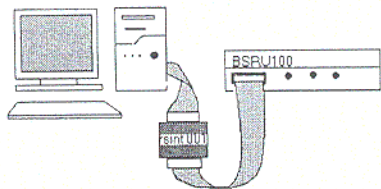


Figure 3: BSRU100™
PC Connection Configuration

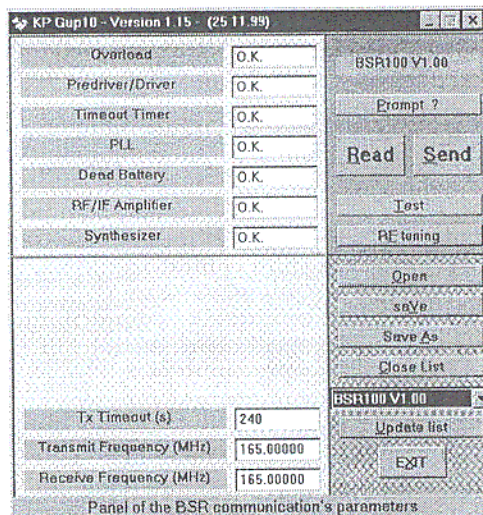


Figure 4: Gup10™ Main Screen

Technical Specifications:

Operating Frequency	450-470 MHz
Space Channel	12.5 kHz
Nominal Operating Voltage	12.5 VDC
Standby Current	120mA max.
Tx Current	2.4A max.
Nominal Power Output	10W
Frequency Stability (at operating temp. range)	±2.5ppm
Sensitivity	-117 DBm (12 Db sinad)
Adjustment Channel Selectivity	58 DB
Operating Temp.	-23°F - 141°F (-30°C - 60°C)
Storage Temp.	-40°F - 158°F (-20°C - 70°C)
Weight	1.44 lbs. (655 gr.)

*on the middle frequency of the working band

Troubleshooting

See Figure 4 for diagnostic results.

Operating Instructions

- Connecting BSRU100™ to Gup10™ (utility program)
- Loading Parameter Values
- Changing Parameter Values
- Updating Parameter Value Changes
- Confirming Parameter Value Changes
- Activating Self Test

Connecting BSRU100™ to Gup10™

1. Connect BSRU100™ to a PC using the RSINT001 adapter (see Figure 3).
2. Click **Start** > **Programs** > **KP Utilities** > **GUP10**.

The **GUP10** main screen displays, showing the device type, version, and suitable default parameters.

Loading Parameter Values

Parameter values must be loaded after connecting the Gup10™ utility software.

To Load Parameter Values

1. From the Gup10 main screen, click **Prompt ? (Alt P)**.
2. Click **Read (Alt R)**. The name of the device type, version, and suitable parameters are displayed.

Changing Parameter Values

Parameter values can be changed, as required:

- Type the new parameter value in the designated parameter text box.

Updating Parameter Value Changes

1. Click **Send (Alt S)**. The **Send Warning** dialog box displays "Are you sure?"
2. Choose one:
 - Click **Yes**, to update parameter changes.**OR**
 - Click **No**, to return to the Gup10 main screen without updating changes.

Confirming Parameter Changes

Ensure that any parameter value changes made are updated.

To Confirm Parameter Changes

From the Gup10 main screen, click **Read (Alt R)**.

The Gup10 main screen displays the updated parameter values.

Performing SELF TEST

After parameter values are loaded, perform SELF TEST:

1. Disconnect BSRU100™ from the PC.
2. Press the Self-Test button.
3. Observe the Self-Test LED. (Refer to Table 2 for SELF-TEST results.)

On-Screen HELP

To view a brief explanation of any BSRU100™ parameter, click the required parameter text box. The cursor will appear in the designated text box, and the valid parameter range, with a brief explanation, displays at the bottom of the screen.

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