1. INTRODUCTION

This manual provides maintenance instructions for the Site Master S114B/S332B Antenna, Cable, and Spectrum Analyzer. It describes the product and provides performance verification procedures, parts replacement procedures, and a replaceable parts list.

2. DESCRIPTION

The Site Master (Figure 1) is a hand held SWR/RL (standing wave ratio/return loss), and Distance-To-Fault measurement instrument. It combines a synthesized source, VSWR Bridge, and receiver on a single printed circuit board (PCB). An optional power monitor is also available.

3. PERFORMANCE VERIFICATION

Paragraphs 4 through 9 contain tests that can be used to verify the performance of the Site Master models S114B and S332B having any version of firmware.

3.1. Initial Setup for Testing

1. Press and hold the ESCAPE/CLEAR key, then press the ON/OFF key to turn on the Site Master. (This sets the instrument to the factory preset state.)

2. Release the ESCAPE/CLEAR key and use the Up/Down arrow key to adjust the contrast to give a readable display.
4. SITE MASTER FREQUENCY ACCURACY

The following test can be used to verify the CW frequency accuracy of the Site Master. Measurement calibration of the Site Master is **not** required for this test.

**a. Equipment Required:**

- Spectrum Analyzer Anritsu Model MS2663C or equivalent

**b. Procedure:**

1. Press and hold the **ESCAPE/CLEAR** key, then press the **ON/OFF** key to turn on the Site Master. (This sets the instrument to the factory preset state.)

   **NOTE**
   Before continuing, allow a five minute warm up for the internal circuitry to stabilize.

2. Press the **FREQ/DIST** key, then press the **F1** soft key and set F1 to 1000 MHz, then press the **ENTER** key.

3. Press the **F2** soft key, set F2 to 1000 MHz, then press the **ENTER** key.

4. Connect the RF cable from the Site Master Reflection Test Port to the RF Input on the MS2663C or equivalent.

5. Set up the Spectrum Analyzer as follows:
   
   (a) Press the Preset key, then select Preset All (F1).
   
   (b) Press the **Frequency** key.
   
   (c) Press the 1 key and then the **GHz** key to change the Center Frequency to 1 GHz.
   
   (d) Press the **Span** key.
   
   (e) Press the 2, 5, 0, and kHz keys sequentially to change the Frequency Span to 250 kHz.
   
   (f) Press the **RBW** key.
   
   (g) Press the 3, 0 and kHz keys sequentially to change the RBW to 30 kHz.
   
   (h) Press the **VBW** key.
   
   (i) Press the **Amplitude** key.
   
   (j) Press the **Filter Off** soft key (F3) to turn the VB filter off.
   
   (k) Press the **Span** key.
   
   (l) Press the **Log Scale** soft key (F5)
   
   (m) Select 2 dB/Div (F3) and the press the return soft key (F6).
   
   (n) Press the **Marker** key.
   
   (o) Press the **Zone Width** soft key (F5).
   
   (p) Select the **Spot** soft key (F1).

6. On the Site Master, press the **SYS** key, the **OPTIONS** soft key and then the **FIXED CW** soft key to turn Fixed CW on.

   **NOTE:**
   If the Site Master has gone into the hold mode, press the **RUN/HOLD** key to return to normal mode.

7. When a sweep is completed, a smooth response should appear on the Spectrum Analyzer.

8. Press the Marker Peak Search key on the Spectrum Analyzer. Verify that the marker peak readout value is 1000 MHz ±75 kHz.

9. On the Site Master, press the **SYS** key, the **OPTIONS** soft key and then the **FIXED CW** soft key to turn Fixed CW Off.

5. RETURN LOSS VERIFICATION

The following test can be used to verify the accuracy of return loss measurements. Measurement calibration of the Site Master is required for this test.

**a. Equipment Required:**

- 20 dB offset, Anritsu SC5270
- 6 dB offset, Anritsu SC5237
- Open/Short, Anritsu 22N50
- 50 Ohm Termination, Anritsu 28N50-2 or SM/PL
b. **Procedure:**

1. Press and hold the **ESCAPE/CLEAR** key, then press the **ON/OFF** key to turn on the Site Master. (This sets the instrument to the factory preset state.)

**NOTE**
Before continuing, allow a five minute warm up for the internal circuitry to stabilize.

2. Press the **MODE** soft key.

3. Use the Up/Down Arrow key to highlight **RETURN LOSS**, then press **ENTER**.

4. Press the **START CAL** key.

5. Follow the instructions on the screen to perform a calibration using a 22N50 Open/Short and 28N50-2 or SM/PL Termination.

6. Connect the 20 dB offset to the Refl Test Port and verify that the reading is 20 dB ± 1.7 dB.

7. Connect the 6 dB offset to the Refl Test Port and verify that the reading is 6 dB ± 1.2 dB.

---

6. **POWER MONITOR VERIFICATION**

If the Power Monitor (Option 5) is installed in the Site Master, the following test can be used to verify the accuracy of the power measurements. Measurement calibration of the Site Master is not required for this test.

a. **Equipment Required:**

- RF Detector, 10 MHz to 20 GHz, Anritsu 560-7N50B
- 10 dB Attenuator, Weinschel 1R-10
- 30 dB Attenuator, Weinschel 1R-30
- RF Reference Source, 0.050 GHz, Anritsu MA2418A
- DC Power Supply, Anritsu 2000-933

b. **Procedure**

1. Connect the DC power supply to the MA2418A Reference Source (Figure 2).

2. Connect the MA2418A Reference Source to the input of the 560-7N50B RF detector.

3. Connect the RF Detector output to the RF Detector input of the Site Master.

---

**Figure 2.** Power Monitor Verification
4. Connect the DC power supply to the appropriate line voltage to supply power to the MA2418A Reference Source.

5. Press and hold the ESCAPE/CLEAR key, then press the ON/OFF key to turn on the Site Master. (This sets the instrument to the factory preset state.)

6. Press the MODE soft key.

7. Use the Up/Down Arrow key to highlight POWER MONITOR, then press ENTER.

8. Press the ZERO soft key to zero the power monitor. When complete, ZERO ADJ:ON is displayed in the message area.

9. Verify that the power monitor reading is 0.0 dBm ± 1 dB.

10. Connect the output of the MA2418A Reference Source to the two attenuators so as to add 40 dB of attenuation (Figure 2).

11. Connect the MA2418A Reference Source and the attenuators to the input of the 560-7N50B RF detector.

12. Verify that the power monitor reading is now –40.0 dBm ± 2 dB.

7. SPECTRUM ANALYZER FREQUENCY ACCURACY

The following test can be used to verify the CW frequency accuracy of the Site Master Spectrum Analyzer.

a. **Equipment Required:**
   - Anritsu 68047C Synthesized Signal Source, with options 11 and 15A
   - 10 MHz Reference Standard

b. **Procedure:**

1. Connect the 10 MHz reference source to the Anritsu 68047C Synthesized Signal Source.

2. Connect the output of the source to the RF Input of the Site Master.

3. Connect the external power supply (Anritsu part number 40-115) to the Site Master.

4. Press and hold the ESCAPE/CLEAR key, then press the ON/OFF key to turn on the Site Master. (This sets the instrument to the factory preset state.)

5. Turn on the 10 MHz reference source and the Anritsu 68047C Synthesized Signal Source.

6. Set the 68047C output to 1000 MHz, with an RF output level of 0 dBm.

   **NOTE**

   Before continuing, allow a 30-minute warm up for the internal circuitry to stabilize.

7. On the Site Master, press the AMPLITUDE key and the REF LEVEL soft key.

8. Enter 20 and press the ENTER key to set the Reference Level to 20 dBm.

9. Press the FREQ/SPAN key and the CENTER soft key.

10. Enter 1000 and press the ENTER key to set the center frequency to 1000 MHz.

11. Press the SPAN soft key and enter 0.1. Press the ENTER key to set the span to 0.100 MHz.

12. Press the SWEEP key.

13. Press the RBW soft key and use the Up/down arrow key to select 10 kHz. Press ENTER to set the resolution bandwidth to 10 kHz.

14. Press the VBW soft key and use the Up/down arrow key to select 3 kHz. Press ENTER to set the video bandwidth to 3 kHz.

15. Press the MARKER key, then the M1 soft key.

16. Select the EDIT soft key and use the Up/down arrow key to center the marker on the waveform. Verify that the marker frequency is 1000 MHz, ± 2 kHz.
8. SPECTRUM ANALYZER MEASUREMENT ACCURACY

Measurement accuracy involves testing the Site Master over three frequencies at four power levels. Table 1 provides a guide to the frequencies, power levels and reference levels required for each measurement, and can be used to record the readings.

a. Equipment Required:
   - Anritsu 68047C Synthesized Signal Source, with options 11 and 15A

b. Procedure:

1. Connect the output of the source to the Site Master RF input.
2. Connect the external power supply (Anritsu part number 40-115) to the Site Master.
3. Press and hold the ESCAPE/CLEAR key, then press the ON/OFF key to turn on the Site Master. (This sets the instrument to the factory preset state.)

   NOTE
   Before continuing, allow a 30-minute warm up for the internal circuitry to stabilize.

4. Press the BW/SWEEP key.
5. Press the RBW soft key and use the Up/down arrow key to select 10 kHz. Press ENTER to set the resolution bandwidth to 10 kHz.
6. Press the VBW soft key and use the Up/down arrow key to select 3 kHz. Press ENTER to set the video bandwidth to 3 kHz.
7. Press the FREQ/SPAN key.
8. Press the SPAN soft key and enter 5, then press the ENTER key to set the span to 5 MHz.
9. Press the AMPLITUDE key.
10. Press the REF LEVEL soft key and enter 20. Press ENTER to set the reference level to +20 dBm.

11. Press the FREQ/SPAN key and the CENTER soft key.
12. Enter 1000 and press the ENTER key to set the center frequency to 1000 MHz.
13. Set the 68047C output to 1000 MHz and the power level to +10 dBm.
14. Press the MARKER key, then the M1 soft key.
15. Select the MARKER TO PEAK soft key to position the marker at the center of the response for the test frequency.

   NOTE
   Optionally, markers 2, 3 and 4 may be set to OFF for a cleaner display.

16. Verify that the M1 reading is ± 2 dB maximum from the input signal.
17. Set the 68047C power level to –10 dBm.
18. Verify that the M1 reading is ± 2 dB maximum from the input signal.
19. Press the AMPLITUDE key.
20. Press the REF LEVEL soft key and enter –20. Press ENTER to set the reference level to –20 dBm.
21. Set the 68047C power level to –30 dBm.
22. Verify that the M1 reading is ± 2 dB maximum from the input signal.
23. Set the 68047C power level to –50 dBm.
24. Verify that the M1 reading is ± 2 dB maximum from the input signal.
25. Repeat steps 9 through 24 for frequencies of 1800 MHz and 2700 MHz (S332B only).
9. SPECTRUM ANALYZER PHASE NOISE VERIFICATION

a. Equipment Required:

- Anritsu 68047C Synthesized Signal Source, with options 11 and 15A

b. Procedure:

1. Connect the output of the source to the Site Master RF Input.
2. Connect the external power supply (Anritsu part number 40-115) to the Site Master.
3. Press and hold the ESCAPE/CLEAR key, then press the ON/OFF key to turn on the Site Master. (This sets the instrument to the factory preset state.)
4. Set the 68047C output to 1000 MHz, with an RF output level of -30 dBm.
5. Press the BW/SWEEP key.
6. Press the RBW soft key and use the Up/down arrow key to select 10 kHz. Press ENTER to set the resolution bandwidth to 10 kHz.
7. Press the VBW soft key and use the Up/down arrow key to select 3 kHz. Press ENTER to set the video bandwidth to 3 kHz.
8. On the Site Master, press the FREQ/SPAN key and the CENTER soft key.
9. Enter 1000 and press the ENTER key to set the center frequency to 1000 MHz.
10. Press the SPAN soft key and enter 0.100. Press the ENTER key to set the span to 0.100 MHz.
11. Press the AMPLITUDE key.
12. Press the REF LEVEL soft key and enter -27. Press ENTER to set the reference level to -27 dBm.
13. Press the MARKER key, then the M1 soft key.
14. Press EDIT and enter 1000. Press ENTER to set the M1 marker frequency to 1000 MHz.
15. Press the BACK soft key and the M2 soft key.
16. Press EDIT and enter 1000.030. Press ENTER to set the M2 marker frequency to 1000.030 MHz (30 kHz higher than the center frequency).
17. Press the DELTA (M2-M1) soft key.
18. Press the RUN/HOLD key and read and record the amplitude of the signal at the M1 30 kHz offset.
19. Press the RUN/HOLD key to read and record five values, then calculate the average of the five recorded values.
20. Add -40 dB to the average value and verify that the result is ≤ -74 dBc/Hz.
21. (For example: -35 dBc measured + (-40 dB) = -75 dBc/Hz.)

<table>
<thead>
<tr>
<th>Freq (MHz)</th>
<th>Power Level (dBm)</th>
<th>Ref Level (dBm)</th>
<th>M1 Reading</th>
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<tr>
<td>1000</td>
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<td>+20</td>
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<td>-50</td>
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</table>

Table 1. Measurement Accuracy Settings
10. TERMINATION VERIFICATION

This test verifies the accuracy of the Site Master SM/PL termination using the precision return loss mode of the 541XXA Scalar Measurement System. Measurements of terminations using this mode provide results that are traceable to the NIST (National Institute of Standards and Technology) standards for the precision airline.

a. **Equipment Required:**
   - Scalar Measurement System, Anritsu 541XXA
   - Offset SWR Autotester, Anritsu 560-97A50-20
   - Precision Airline, Anritsu 18N50
   - Open/Short, Anritsu 22N50
   - 50 Ohm Termination, Anritsu 28N50-2
   - Source Adapter, Anritsu 34NN50A

b. **Procedure**
   1. Connect the test equipment as shown in Figure 3, page 7.
   2. Press the **Power** key on the 541XXA to **On**.
   3. Press the **System Menu** key.
   4. Using the Menu up-down keys: Highlight **RESET**, then press the **Select** key.
   5. At the **RESET MENU** display, use the Menu up-down keys to highlight **RESET TO FACTORY DEFAULTS**, then press the **Select** key.
   6. Set the signal source for the frequency range as follows:
      (a) Press the **Frequency** key.
      (b) Using the Data Entry Keypad or Data Entry Knob, set the Start frequency to 0.01 GHz. Press the **Enter** key.
      (c) Using the Data Entry Keypad or Data Entry Knob, set the Stop frequency to 4.0 GHz. Press the **Enter** key.
   7. Press the Channel 2 Display On/Off key to **Off**.
   8. Press the Channel 1 Menu key.

---

**Figure 3.** 541XXA Precision Return Loss Setup
9. Using the Menu up-down keys: Highlight PRECISION RL, then press the Select key.

10. At the PRECISION RETURN LOSS menu display, use the Menu up-down keys to highlight FINAL, then press the Select key.

11. Press the Calibration key.

12. At the CALIBRATION menu display, use the Menu up-down keys to highlight START CAL, then press the Select key.

13. Connect the precision air line to the Offset SWR Autotester test port. Position the air line pointing vertically upward. Downward or horizontal positions make connector pin alignment difficult.

14. Connect the Offset SWR Autotester to Input A, if you have not done so yet.

15. Press the Select key when ready.

16. At the PRECISION RETURN LOSS CALIBRATION menu display prompt, connect the Offset SWR Autotester to Input A, if you have not done so yet.

17. Verify that the display resembles that shown in Figure 4, page 8.

18. At the next menu prompt, remove the Open and connect the Short to the beadless end of the air line. Press the Select key to start the calibration process.

19. At the next menu prompt, remove the Short and connect the 50 Ohm Termination to the beadless end of the air line.

20. When the calibration is complete, remove the 50 Ohm Termination.

21. Connect the SM/PL termination to the beadless end of the air line and press the Select key to begin the measurement.

22. Observe that the waveform displayed resembles that shown in Figure 5.

23. Press the Cursor On/Off key to On.

24. Observe the Cursor menu readout. The minimum return loss reading for the SM/PL termination should be 42 dB.
11. BATTERY PACK REMOVAL AND REPLACEMENT

This procedure provides instructions for removing and replacing the Site Master battery pack.

1. With the Site Master standing upright on a stable surface, locate the battery access door (Figure 6).

2. Lift up the access door handle and rotate it 90 degrees counterclockwise, as illustrated in Figure 7.

3. Lift the door and remove, as illustrated in Figure 8.

4. Grasp the battery lanyard and pull the battery straight up and out of the unit, as illustrated in Figure 9.

5. Replacement is the opposite of removal. Note the orientation of the battery contacts, and be sure to insert the new battery with the contacts facing the rear of the unit (Figure 10).
12. BATTERY INFORMATION

The following information relates to the care and handling of the Site Master battery, and NiMH batteries in general.

The Nickel Metal Hydride (NiMH) battery supplied with the Site Master is shipped in a discharged state. Before using the Site Master, the internal battery must first be charged for three hours, either in the Site Master or in the optional battery charger (Anritsu part number: 2000-1029).

- Use only Anritsu approved battery packs.
- Recharge the battery only in the Site Master or in an Anritsu approved charger.
- With a new NiMH battery, full performance is achieved after three to five complete charge and discharge cycles.
- When the Site Master or the charger is not in use, disconnect it from the power source.
- Do not charge batteries for longer than 24 hours; overcharging may shorten battery life.
- If left unused a fully charged battery will discharge itself over time.
- Temperature extremes will affect the ability of the battery to charge: allow the battery to cool down or warm up as necessary before use or charging.
- Discharge an NiMH battery from time to time to improve battery performance and battery life.
- The battery can be charged and discharged hundreds of times, but it will eventually wear out.
- The battery may need to be replaced when the operating time between charging becomes noticeably shorter than normal.
- Never use a damaged or worn out charger or battery.
- Storing the battery in extreme hot or cold places will reduce the capacity and lifetime of the battery.
- Never short-circuit the battery terminals.
- Do not drop, mutilate or attempt to disassemble the battery.
- Do not dispose of batteries in a fire!
- Batteries must be recycled or disposed of properly. Do not place batteries in household garbage.
- Always use the battery for its intended purpose only.
13. FRONT PANEL ASSEMBLY REMOVAL AND REPLACEMENT

This procedure provides instructions for removing and replacing the Site Master front panel assembly. With the front panel assembly removed, the LCD display, keypad PCB, keypad membrane, and main PCB assemblies can be removed and replaced.

1. Place the Site Master face up on a work surface.

2. Remove the four rubber corner bumpers by carefully sliding the bumpers off of the case corners (Figure 12).

3. With the bumpers removed, the access holes for the case screws are revealed. Use a Phillips screwdriver to remove the four screws securing the two halves of the Site Master case together.

4. Carefully lift up on the right side (as viewed from the front) of the front half of the case and begin to separate the two halves.

CAUTION
Do not force or pull the two halves of the case apart as there are delicate cables attached between the two halves that must be disconnected first.

5. Carefully depress the latch tab and disconnect the LCD display cable from J12 on the main PCB.

6. Carefully disconnect the keypad interface cable from J1 on the main PCB.

7. Carefully disconnect the LCD display backlight cable from J15 on the main PCB.

8. Remove the front panel assembly.

9. Reverse the above steps to replace the front panel assembly.

NOTE
The corner bumpers only mount one way. That is, the raised area inside one end of the bumper (Figure 13) is made to conform to the contour of the front cover only.
14. LCD ASSEMBLY REPLACEMENT

This procedure provides instructions for removing and replacing the Liquid Crystal Display (LCD) once the front panel assembly has been separated from the Site Master.

1. Remove the front panel assembly as directed in section 13.

2. Place the front panel assembly face down on a protected work surface.

3. Remove the 14 Phillips screws that attach the backing plate to the front panel assembly.

4. Release the LCD display cable from the retaining clip on the front panel backing plate.

5. Remove the front panel backing plate, carefully feeding the LCD cable through the access hole to avoid damage to the cable or connector.

6. Remove the rubber cushion pad from the LCD assembly and remove the assembly.

7. Reverse the above steps to install the replacement assembly.

15. KEY PAD PCB REPLACEMENT

This procedure provides instructions for removing and replacing the key pad PCB.

1. Remove the front panel assembly as directed in section 13.

2. Place the front panel assembly face down on a protected work surface.

3. Remove the 14 Phillips screws that attach the backing plate to the front panel assembly.

4. Release the LCD display cable from the retaining clip on the front panel backing plate (Figure 15).

5. Remove the front panel backing plate, carefully feeding the LCD cable through the access hole to avoid damage to the cable or connector.

6. Remove the rubber cushion pad from the key pad PCB and remove the PCB.

7. Reverse the above steps to install the replacement assembly.

Figure 15. Front Panel Backing Plate

Figure 16. Front Panel Keypad PCB Location
16. KEY PAD MEMBRANE REPLACEMENT

This procedure provides instructions for replacing the key pad membrane.

1. Remove the front panel assembly as directed in section 13.

2. Remove the key pad PCB as directed in section 15.

3. Remove the keypad membrane by gently pulling the membrane up and out of the holes in the front panel.

4. Reverse the above steps to install the replacement membrane.

17. MAIN PCB ASSEMBLY REPLACEMENT

This procedure provides instructions for replacing the main PCB assembly with the connector panel attached. The assembly consist of two PCBs (Control and RF) which must be replaced together.

1. Remove the front panel assembly as directed in section 13.

2. Disconnect the battery connector from J13 on the main PCB.

3. Disconnect the semi-rigid coaxial cable from the RF connector on the connector panel.

4. Remove the three PCB mounting screws and remove the Control PCB assembly with the connector panel attached.

5. Remove the three .25” standoffs and four Phillips screws and remove the RF PCB.

6. Reverse the above steps to install the new main PCB.

NOTE
The main PCB connector panel fits into grooves in the two halves of the case. Make sure the panel is correctly aligned with the grooves before reassembling the two halves together.
18. REPLACEABLE PARTS

Replaceable parts for the Site Master Model S114B/S332B are listed below.

Table 2. Replaceable Parts List

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
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<tbody>
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<td></td>
<td><strong>Accessories</strong></td>
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<td>10580-00028</td>
<td>User's Guide, Site Master S114B/S332B</td>
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<tr>
<td>10580-00035</td>
<td>Programming Manual, Site Master S114B/S332B (available on disk only)</td>
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<td>2300-347</td>
<td>Software Tools, Site Master</td>
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<tr>
<td>40-115</td>
<td>Power Supply</td>
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<td>2000-1029</td>
<td>Battery Charger</td>
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<td>Precision Short/Open, N Male</td>
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<td>SM/PL</td>
<td>Connector, RF Termination</td>
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<td>Liquid Crystal Display Assembly</td>
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<td>900-720</td>
<td>Screw, 4-40, 0.187</td>
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<td>900-697</td>
<td>Screw, 4-40, 0.312</td>
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<td>785-927</td>
<td>M-F Stand off, 4-40, 11/16</td>
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<td>900-326</td>
<td>Kep Nut, 4-40, 0.187</td>
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<tr>
<td>790-516</td>
<td>Hole Plug, 0.6875L</td>
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<tr>
<td>761-79</td>
<td>Cap Vinyl, Black, round</td>
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</tbody>
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<p>|             | <strong>Case Parts</strong>               |     |
| 46652-1     | Top Case only                | 1   |
| 46665       | Top Case w/ hardware         | 1   |
| 46653-1     | Bottom Case only             | 1   |
| 46664       | Bottom Case w/ hardware      | 1   |
| 48231-1     | Battery Door                 | 1   |
| 790-509     | Battery Door Latch (3 pieces) | 1   |
| 790-510     |                                |     |
| 790-511     |                                |     |
| 46655       | Case Corner Bumpers          | 4   |
| 46662       | LCD Retainer Plate           | 1   |
| 48241       | Foam, LCD Corners            | 8   |
| 48278       | Foam, LCD Window             | 1   |
| 46659       | Foam, LCD Backing            | 1   |
| 46661       | Foam, Keypad Backing         | 1   |
| 48246       | Foam, Battery Door           | 4   |
| 48271       | Foam, Battery Compartment    | 1   |
| 720-19      | Cable Clamp                  | 1   |
| 790-515     | Spring, Battery Compartment  | 1   |
| 48244       | ID Label, Model S114B        | 1   |
| 48245       | ID Label, Model S332B        | 1   |</p>
<table>
<thead>
<tr>
<th>Country</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td><strong>Anritsu Service Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anritsu Company</strong></td>
<td>685 Jarvis Drive, Morgan Hill, CA 95037-2809</td>
<td>(408) 776-8300</td>
<td>1-800-ANRITSU</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>408-776-1744</td>
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<tr>
<td>France</td>
<td><strong>Anritsu S.A.</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>9 Avenue du Quebec, 91951 Les Lilis Cedex, France</td>
<td>016-44-66-546</td>
<td>016-44-61-065</td>
</tr>
<tr>
<td>Germany</td>
<td><strong>Anritsu GmbH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grafenberger Allee 54-56 D-40237 Dusseldorf, Germany</td>
<td>0211-68550</td>
<td>0211-685555</td>
</tr>
<tr>
<td>Japan</td>
<td><strong>Anritsu Corporation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1800 Onma Atsugi-shi, Kanagawa-Prf. 243 Japan</td>
<td>0462-23-1111</td>
<td>0462-25-8379</td>
</tr>
<tr>
<td>Singapore</td>
<td><strong>Anritsu (Singapore) Pte Ltd.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Shenton Way #24-03, Shenton House, Singapore</td>
<td>2265206</td>
<td>2265207</td>
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<tr>
<td>South Africa</td>
<td><strong>Etecsa</strong></td>
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<tr>
<td></td>
<td>12 Surrey Square Office Park 330 Surrey Avenue, Ferndale, Randburg, 2194</td>
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<tr>
<td>Sweden</td>
<td><strong>Anritsu AB</strong></td>
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</tr>
<tr>
<td></td>
<td>Botvid Center S-1585 Stockholm, Sweden</td>
<td>(08) 534-717-00</td>
<td>(08) 534-717-30</td>
</tr>
<tr>
<td>Brazil</td>
<td><strong>Anritsu Electronica Ltda.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Praia de Botafogo, 440, Sala 2401 CEP22250-040, Rio de Janeiro, RJ, Brasil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(021) 28-69-141</td>
<td>(02) 50-22-4252</td>
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</tr>
<tr>
<td>Canada</td>
<td><strong>Anritsu Instruments Ltd.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>215 Stafford Road, Unit 102 Nepean, Ontario K2H 9C1</td>
<td>(613) 828-4090</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(613) 826-5400</td>
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<tr>
<td>China</td>
<td><strong>Instrimex</strong></td>
<td></td>
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<tr>
<td></td>
<td>Anritsu Product Service Station No. 1515 Beijing Fortune Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Dong San Huan Bei Lu Chao Yang Qu Beijing, China</td>
<td></td>
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<tr>
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<td>(10-6590-9230)</td>
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</tbody>
</table>

**Table 3.** Anritsu Service Centers