MAINTENANCE MANUAL

Site Master™ S810A, S818A

Antenna and Coax/Waveguide Analyzers

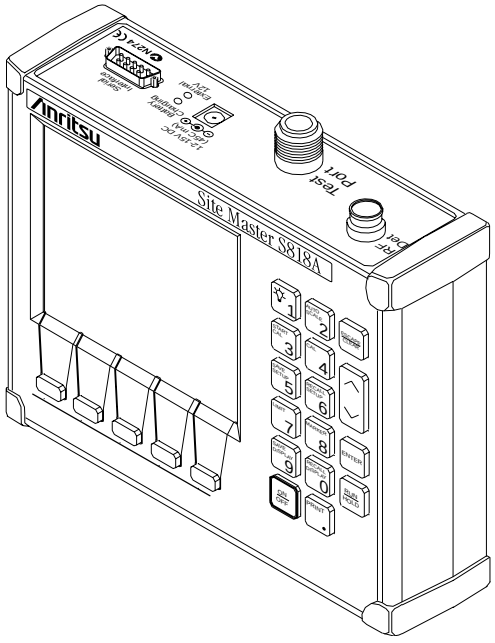


Figure 1. *Site Master S818A*

1. INTRODUCTION

This manual provides maintenance instructions for Site Master S810A, S818A Antenna and Coax/ Waveguide Analyzers. 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. A block diagram is shown in Figure 2.

3. PERFORMANCE VERIFICATION

Paragraphs 4 through 7 contain tests that can be used to verify the performance of the Site Master models S810A and S818A 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.

Anritsu

490 JARVIS DRIVE ♦ MORGAN HILL, CA 95037-2809

P/N: 10580-00022
REVISION C
PRINTED: JANUARY 2001

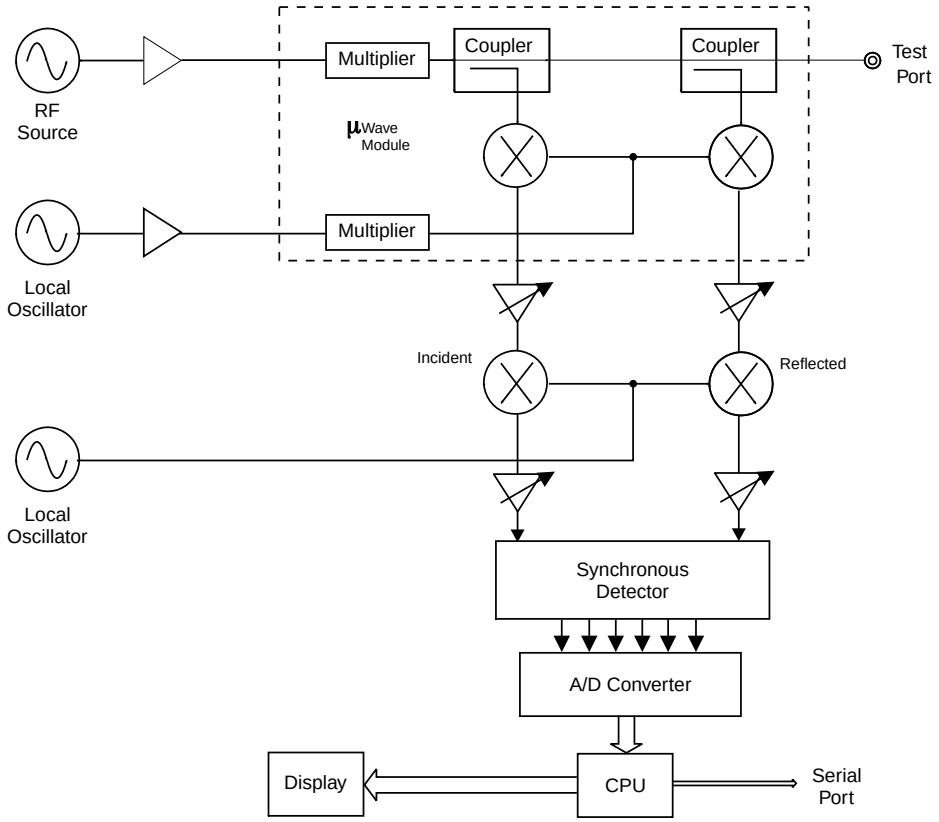


Figure 2. *Site Master Block Diagram*

4. 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 MS2602A

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** soft key.
3. Press the **F1** soft key, set to 9 GHz, then press the ENTER key.
4. Press the **F2** soft key, set to 9 GHz, then press the ENTER key.
5. Connect the RF cable from the Site Master Test Port to the RF Input on the MS2602A.
6. Set up the Spectrum Analyzer as follows:
   (a) Press Preset.
   (b) Press Center and enter 1 GHz.
   (c) Press the Max Hold button.
7. If the Site Master has gone into the hold mode, press the RUN/HOLD key to make the measurement.
8. Use the Spectrum Analyzer marker to measure the center of the response. The frequency should be 1 GHz ±75 kHz.

   NOTE
   Nominal power is approximately 0 - 10 dBm at 1 GHz.

5. RETURN LOSS VERIFICATION

The following test can be used to verify the accuracy of return loss measurements. Verification is performed by measuring the Source Match and Corrected Directivity. This method eliminates the uncertainties of measuring standard offset. Measurement calibration of the Site Master is required for this test.

Refer to the RF Measurement Chart on page 13, and the Return Loss Verification worksheet on page 14.

a. *Equipment Required:*

- PC with Site Master Software Tools
- Null-modem Serial Interface Cable (800-441)
- 18N50 Precision Airline
- 22A50 Open / Short
- 22N50 Open / Short
- 29A50-20 Precision Offset Termination
- 28N50-2 Precision Termination

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. Connect the Site Master to the PC through a null-modem cable.
3. Perform an OSL calibration over the frequency range of the unit using the 22N50 Open/Short and the 28N50-2 Precision Termination. Verify that noise spikes are below 44 dB and that the trace is smooth. Repeat as required.
4. Remove the 28N50-2 Termination.
5. Connect a 18N50 Precision Airline to the test port.
6. Connect a 22A50 Short to the open end of the airline.
7. Press the AUTOSCALE key.
8. Open the Site Master Software Tools program.
9. Select the "Start a Plot Capture" icon, or select Capture|Start Capture from the menu.
10. Observe that the "Waiting for Data" message appears on screen.
11. On the Site Master, capture and store a new trace.
12. Recall the stored trace.
13. Press ENTER to start the screen capture. The trace should appear on the PC screen.
14. Measure and record the worst case peak-to-peak ripple.
15. Use the RF Measurement Chart (page 13) to correlate the peak-to-peak ripple reading to a return loss value in dB. The measured value should be:
    ≤ 17 dB (3.3 - 10.5 GHz)
    ≤ 14 dB (10.5 - 18 GHz).
16. Remove the 22A50 Open / Short.
17. Connect the 29A50-20 Precision Offset Termination to the open end of the airline.
18. Press the AUTOSCALE key.
19. Measure and record the worst case peak-to-peak ripple.
20. Add this value to the mean value of the 29A50-20 Precision Offset Termination.
21. Use the RF Measurement Chart to correlate the reading to a return loss value in dB. The measured value should be:
    ≤ 37 dB (3.3 - 10.5 GHz)
    ≤ 34 dB (10.5 - 18 GHz).
22. Remove the airline and Precision Offset Termination.

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, Weinshel 1R-10
- 30 dB Attenuator, Weinshel 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. (Refer to Figure 3.)
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.
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.

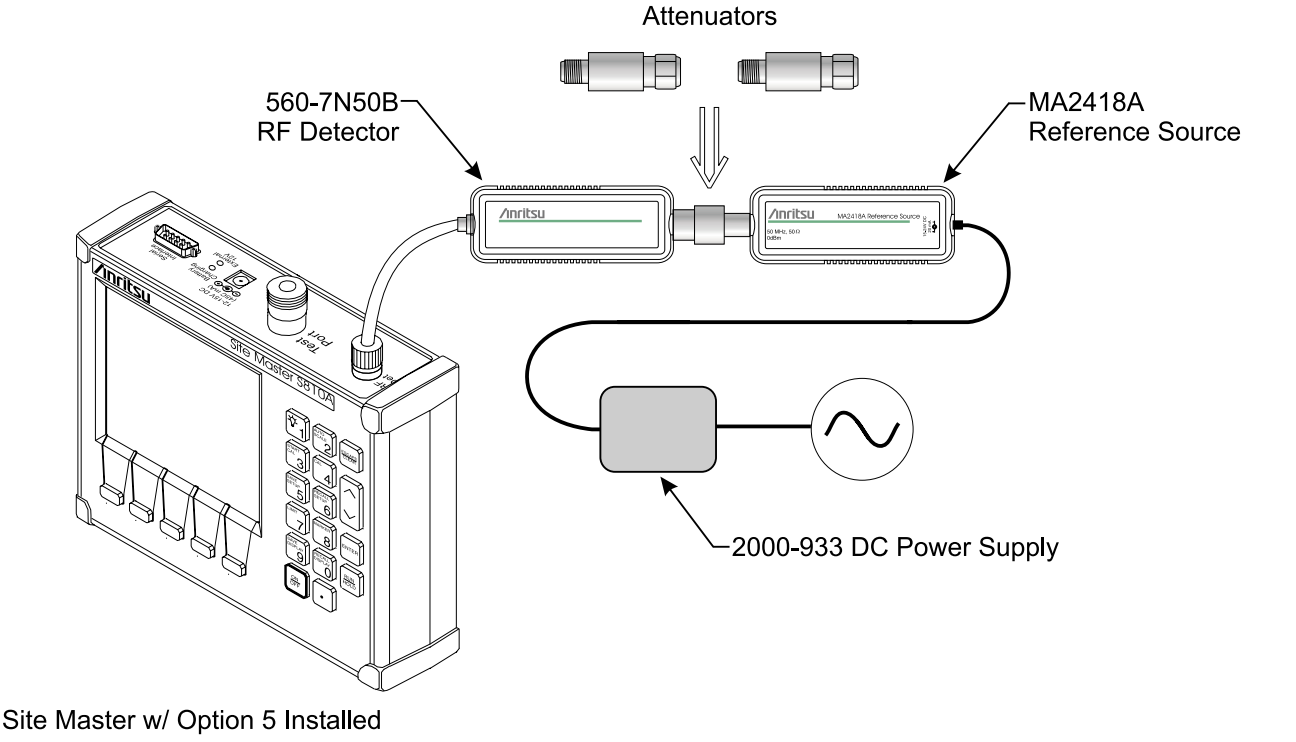


Figure 3. *Power Monitor Verification*

10. Connect the output of the MA2418A Reference Source to the two attenuators so as to add 40 dB of attenuation (Figure 3).
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. TERMINATION VERIFICATION

This test can be used to verify the accuracy of terminations used with the Site Master. The test uses 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 26N50
- Source Adapter, Anritsu 34NN50A

b. *Procedure*

1. Connect the test equipment as shown in Figure 3.
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 18.0 GHz. Press the Enter key.

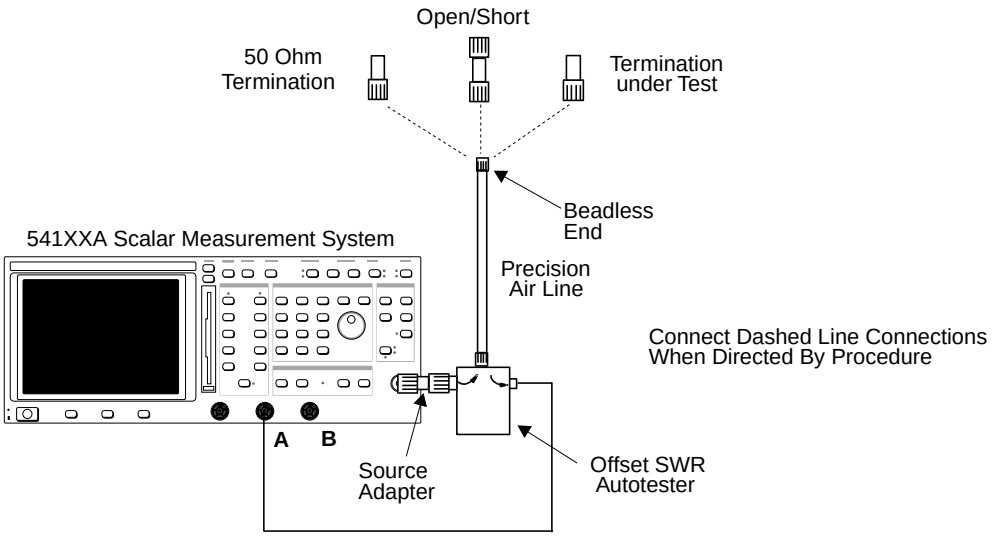


Figure 4. *541XXA Precision Return Loss Test Setup*

7. Press the Channel 2 Display On/Off key to Off.
8. Press the Channel 1 Menu key.
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. At the PRECISION RETURN LOSS CALIBRATION menu display prompt, connect the Offset SWR Autotester to Input A, if you have not done so yet.
14. 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.

NOTE

Ensure that the beadless end of the precision airline is at the measurement connection point.

15. Press the Select key when ready.
16. At the PRECISION RETURN LOSS CALIBRATION menu prompt, connect the Open to the beadless end of the airline. Press the Select key to start the calibration.
17. Verify that the display resembles that shown in Figure 5.

CAUTION

During both calibration and measurement, be sure to properly align the beadless connector of the airline. When the connectors are mis-aligned, a spike will usually be visible on the display.

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

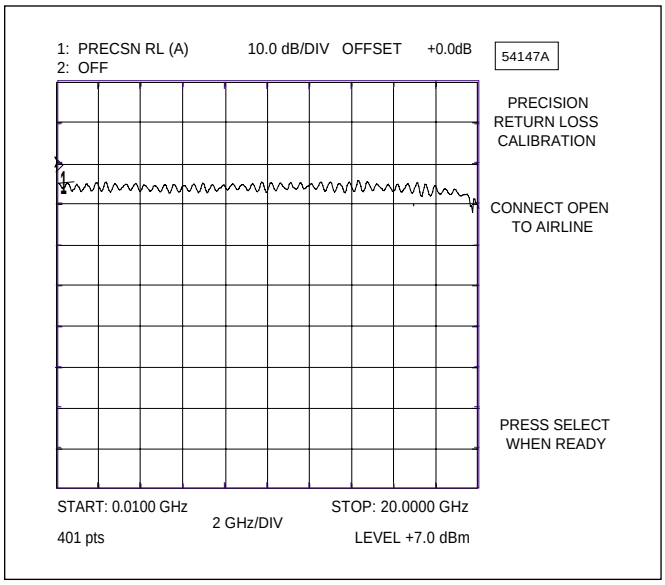


Figure 5. *Example of a Good Connection*

19. At the next menu prompt, remove the Short and connect the 50 Ohm Termination to the beadless end of the air line. Press the Select key to start the calibration process.
20. When the calibration is complete, remove the 50 Ohm Termination.
21. Connect the Termination under Test 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 6.

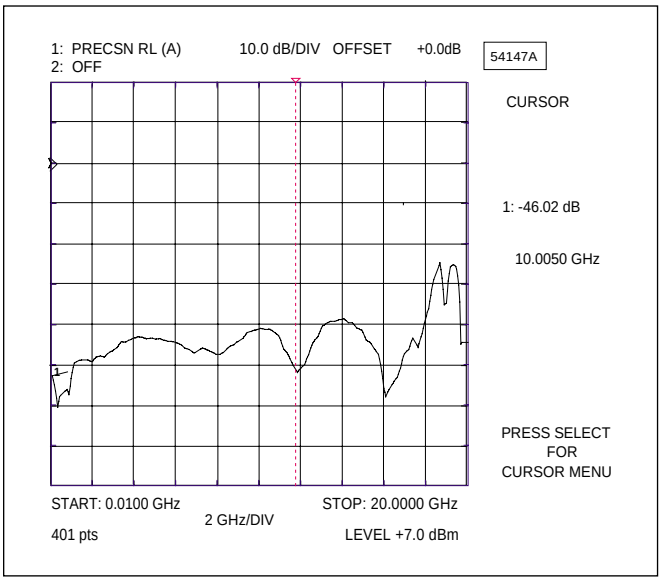


Figure 6. *Direct Readout of the Precision Return Loss*

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

24. Observe the CURSOR menu readout for the return loss reading. The minimum return loss reading for the 28N50-2 termination should be 40 dB.

8. BATTERY PACK REMOVAL

This procedure provides instructions for removing the battery pack. Refer to Figure 7 during this procedure.

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

2. Remove the four corner rubber bumpers (1).

3. Remove the four screws (PN 900-811) (2).

4. While holding the two halves of the Site Master together, turn it over and set it face down on the work surface.

CAUTION

In the next step, the Main RF PCB assembly (3) and test port panel (4) must stay with the front panel.

5. Remove the bottom half (5) and fold it over to lay upside down on the work surface.

6. Disconnect the red/black cable of the battery pack from J6 (6) of the Main RF PCB assembly (3).

7. Remove the four screws (7) holding the battery bracket (8) in place and lift the bracket clear.

8. Remove the battery assembly (9).

9. BATTERY PACK REPLACEMENT

This procedure provides instructions for replacing the battery pack. Refer to Figure 7 during the procedure.

1. Install the new battery assembly (9).
2. Replace the battery bracket (8) and insert the four screws (7) to hold the battery bracket in place.
3. Reconnect the red/black cable of the battery pack battery to J6 (6) on the main RF PCB assembly (3).
4. Set the bottom half in place.
5. While holding the two halves together, turn the Site Master over and lay it face up on the work surface.
6. Reinstall the four screws (2).
7. Install the rubber bumpers (1) on all four corners of the instrument.

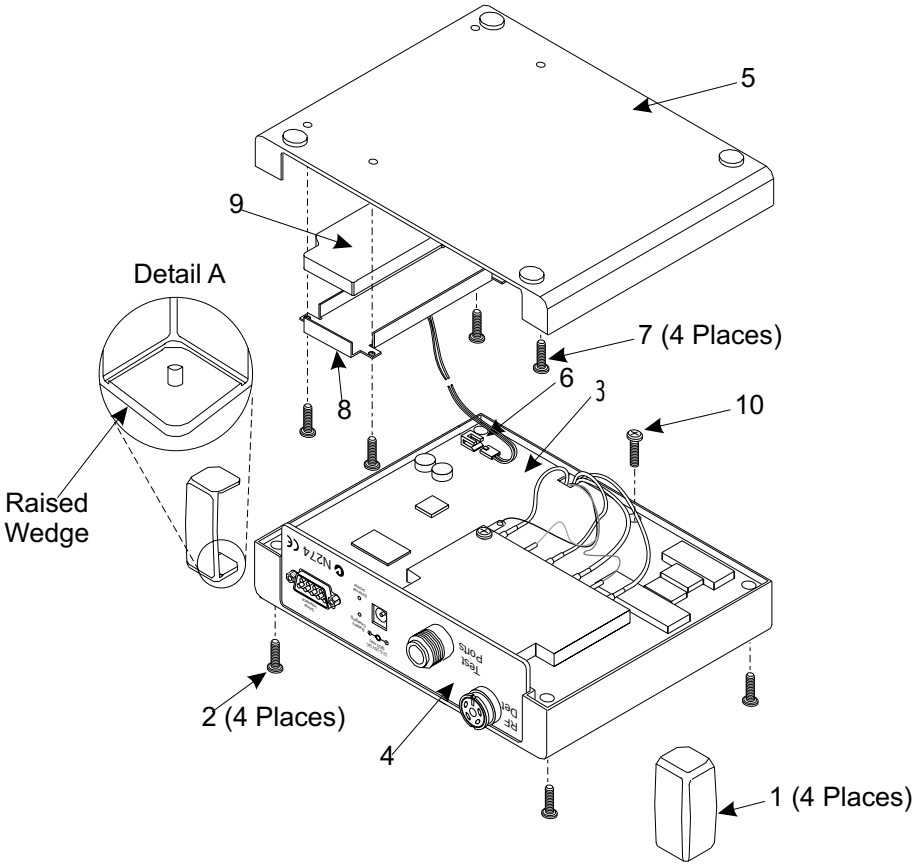


Figure 7. *Site Master Battery Removal*

10. BATTERY DISPOSAL

The battery used in the Site Master is a rechargeable nickel-cadmium (NiCd) battery and is covered by the Battery Directive (91/157/EEC). As such, the battery is marked as follows to indicate controlled disposal.

This marking indicates that the battery is a recyclable product.

NiCd

This marking indicates that the battery requires separate collection and shows the chemical system (Nickel/ Cadmium).

Component	% of Cell Weight
Nickel	19 to 26%
Cadmium	17 to 22%

This marking indicates the heavy-metal component concentration as a percentage of battery cell weight.

Spent nickel-cadmium batteries are valuable resources. Because they are reusable, do not throw them away. Arrange for proper return for recycling in your locality. If you do not have access to proper disposal methods, return the battery pack to your Anritsu service center. Service centers will dispose of the unit at no charge. Anritsu Service Centers are listed on page of this manual.

11. KEY PAD MEMBRANE REPLACEMENT

This procedure provides instructions for replacing the key pad membrane. Refer to Figure 7 (page 8) during this procedure.

1. Place the Site Master face up on a work surface.
2. Remove the four corner rubber bumpers (1).
3. Remove the four screws (PN 900-811) (2).
4. While holding the two halves of the Site Master together, turn it over and set it face down on the work surface.

CAUTION

In the next step, the PCB Assy (3) and test port panel (4) must stay with the front panel.

5. Remove the bottom half (5) and fold it over to lay upside down on the work surface.
6. Disconnect the red/black cable of the battery pack from the main PCB assembly connector J6 (6).
7. Remove the screw (10) located on the bottom side of the main PCB assembly next to the RF Bridge assembly .
8. Pull the PCB assemblies clear from the top half of the case.
9. Lift the keypad membrane clear from the keypad assembly.
10. Install a new membrane.

NOTE

Carefully use pliers to pull the rubber tabs tight to ensure that the membrane is flush with the PCB.

11. Reverse the above procedure to re-assemble the Site Master.

12. LCD REPLACEMENT

This procedure provides instructions for replacing the Liquid Crystal Display (LCD). Refer to Figure 7 (page 8) during this procedure.

1. Place the Site Master face up on a work surface.
2. Remove the four corner rubber bumpers (1).
3. Remove the four screws (PN 900-811) (2).
4. While holding the two halves of the Site Master together, turn it over and set it face down on the work surface.

CAUTION

In the next step, the PCB Assy (3) and test port panel (4) must stay with the front panel.

5. Remove the bottom half (5) and fold it over to lay upside down on the work surface.
6. Disconnect the red/black cable of the battery pack from the main PCB assembly connector J6 (6).
7. Remove the screw (10) located on the bottom side of the main PCB assembly next to the RF Bridge assembly .
8. Pull the PCB assemblies clear from the top half of the case.
9. Remove the grey/brown cable of the LCD assembly from the main PCB assembly connector J8.
10. Remove the four screws from the LCD PCB assembly.
11. Carefully remove the 20-way ribbon cable from the connector on the keypad PCB assembly.
12. Install the new LCD PCB assembly. Use thread locker on the LCD mounting screws.
13. Reverse the above procedure to re-assemble the Site Master.

13. MAIN PCB AND RF MODULE ASSEMBLY REPLACEMENT

This procedure provides instructions for replacing the main PCB and RF module assembly. Refer to Figure 7 (page 8) during this procedure.

NOTE

The test port panel is replaced as part of the main PCB assembly.

1. Place the Site Master face up on a work surface.
2. Remove the four corner rubber bumpers (1).
3. Remove the four screws (PN 900-811) (2).
4. While holding the two halves of the Site Master together, turn it over and set it face down on the work surface.

CAUTION

In the next step, the PCB Assy (3) and test port panel (4) must stay with the front panel.

5. Remove the bottom half (5) and fold it over to lay upside down on the work surface.
6. Disconnect the red/black cable of the battery pack from the main PCB assembly connector J6 (6).
7. Remove the screw (10) located on the bottom side of the main PCB assembly next to the RF Bridge assembly.
8. Pull the PCB assemblies clear from the top half of the case.
9. Disconnect the grey/brown cable of the LCD assembly from the main PCB assembly connector J8.
10. Remove the four screws holding the LCD assembly, but do **NOT** disconnect the 20-way connector from the keypad PCB assembly.
11. Use pliers to gently squeeze the nine plastic spacer heads to release them from the Keypad PCB assembly and carefully pull the Keypad PCB with the LCD assembly from the main PCB assembly.

12. Remove the four standoffs and the EMI shield cloth.

NOTE

If the Power Monitor (Option 5) is installed, remove the two screws holding the Option 5 PCB assembly to the test port panel and unsolder the wires from pins 1 through 4 of the RF Detector connector on the test port panel.

13. Carefully remove the serial number from the test port panel.

14. Install the serial number on the replacement test port panel.

15. Reverse the above procedure to re-assemble the Site Master.

14. REPLACEABLE PARTS

Replaceable parts for the Site Master are listed in Table 1 on page 12.

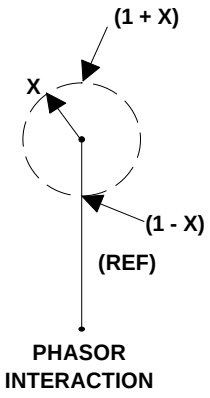
Table 1. *Parts List*

Part Number	Description	Qty
Accessories		
10580-00014	User's Guide, Site Master S810A, S818A	1
10580-00007	Battery Replacement and Disposal Guide	1
2300-211	Software Tools, Site Master	1
40-115	Power Supply	1
806-62	Cable Assy, Cig Plug, Female	1
800-441	Serial Interface Cable Assy	1
D41955	Carrying Case	1
Replaceable Parts		
B42893	EMI Shield	1
C41761	Liquid Crystal Display Assy	1
ND45417	Battery Pack Kit	1
ND 47538	Main PCB Assy, S810A with μwave module and cables	1
ND45369	Main PCB Assy, S818A with μwave module and cables	1
D41766-3	Keypad PCB Assy	1
D40864-2	Membrane Keypad, Main	1
C41767	Membrane, Soft Keys	1

Part Number	Description	Qty
Hardware		
790-171	Silicon Pad	1
761-10	Cap Vinyl, Black, round, 0.625 ID	1
790-52	Washer, #4, Shoulder, Nylon	1
900-257	Pan Head Screw, 0.312	4
790-445	Spacer PCB, 0.625, Self Mount	9
900-800	Pan Head Screw, #4, 0.312	1
900-811	Pan Head Screw, #4	4
900-326	Nut, Kep, 4-40, 0.312	4
900-697	Pan Head Screw, 4-40, 0.312	3
900-138	Screw, Pan, 2-56/patchlock, 0.18	4
B41753	Gasket, LCD	1
Case Parts		
D40861-3	Case	1
C40863	Bumper	4
B44351	ID, Model S810A Label	1
B45030	ID, Model S818A Label	1

Table 2. *RF Measurement Chart*

Conversion tables for Return Loss, Reflection Coefficient, and SWR with tabular values for interaction of a small phaser *x* with a large phaser (unity reference) expressed in dB related to reference.



			Relative to Unity Reference			
SWR	Reflection Coefficient	Return Loss (dB)	X dB Below Reference	REF + X dB	REF – X dB	REF ± X Peak to Peak Ripple dB
17.3910	0.8913	1	1	5.5350	–19.2715	24.8065
8.7242	0.7943	2	2	5.0780	–13.7365	18.8145
5.8480	0.7079	3	3	4.6495	–10.6907	15.3402
4.4194	0.6310	4	4	4.2489	–8.6585	12.9073
3.5698	0.5623	5	5	3.8755	–7.1773	11.0528
3.0095	0.5012	6	6	3.5287	–6.0412	9.5699
2.6146	0.4467	7	7	3.2075	–5.1405	8.3480
2.3229	0.3981	8	8	2.9108	–4.4096	7.3204
2.0999	0.3548	9	9	2.6376	–3.8063	6.4439
1.9250	0.3162	10	10	2.3866	–3.3018	5.6884
1.7849	0.2818	11	11	2.1567	–2.8756	5.0322
1.6709	0.2512	12	12	1.9465	–2.5126	4.4590
1.5769	0.2239	13	13	1.7547	–2.2013	3.9561
1.4935	0.1995	14	14	1.5802	–1.9331	3.5133
1.4326	0.1778	15	15	1.4216	–1.7007	3.1224
1.3767	0.1585	16	16	1.2778	–1.4988	2.7766
1.3290	0.1413	17	17	1.1476	–1.3227	2.4703
1.2880	0.1259	18	18	1.0299	–1.1687	2.1986
1.2528	0.1122	19	19	0.9237	–1.0337	1.9574
1.2222	0.1000	20	20	0.8279	–0.9151	1.7430
1.1957	0.0891	21	21	0.7416	–0.8108	1.5524
1.1726	0.0794	22	22	0.6639	–0.7189	1.3828
1.1524	0.0708	23	23	0.5941	–0.6378	1.2319
1.1347	0.0631	24	24	0.5314	–0.5661	1.0975
1.1192	0.0562	25	25	0.4752	–0.5027	0.9779
1.1055	0.0501	26	26	0.4248	–0.4466	0.8714
1.0935	0.0447	27	27	0.3796	–0.3969	0.7765
1.0829	0.0398	28	28	0.3391	–0.3529	0.6919
1.0736	0.0355	29	29	0.3028	–0.3138	0.6166
1.0653	0.0316	30	30	0.2704	–0.2791	0.5495
1.0580	0.0282	31	31	0.2414	–0.2483	0.4897
1.0515	0.0251	32	32	0.2155	–0.2210	0.4365
1.0458	0.0224	33	33	0.1923	–0.1967	0.3890
1.0407	0.0200	34	34	0.1716	–0.1751	0.3467
1.0362	0.0178	35	35	0.1531	–0.1558	0.3090
1.0322	0.0158	36	36	0.1366	–0.1388	0.2753
1.0287	0.0141	37	37	0.1218	–0.1236	0.2454
1.0255	0.0126	38	38	0.1087	–0.1100	0.2187
1.0227	0.0112	39	39	0.0969	–0.0980	0.1949
1.0202	0.0100	40	40	0.0864	–0.0873	0.1737
1.0180	0.0089	41	41	0.0771	–0.0778	0.1548
1.0160	0.0079	42	42	0.0687	–0.0693	0.1380
1.0143	0.0071	43	43	0.0613	–0.0617	0.1230
1.0127	0.0063	44	44	0.0546	–0.0550	0.1096
1.0113	0.0056	45	45	0.0487	–0.0490	0.0977
1.0101	0.0050	46	46	0.0434	–0.0436	0.0871
1.0090	0.0045	47	47	0.0387	–0.0389	0.0776
1.0080	0.0040	48	48	0.0345	–0.0346	0.0692
1.0071	0.0035	49	49	0.0308	–0.0309	0.0616
1.0063	0.0032	50	50	0.0274	–0.0275	0.0549
1.0057	0.0028	51	51	0.0244	–0.0245	0.0490
1.0050	0.0025	52	52	0.0218	–0.0218	0.0436
1.0045	0.0022	53	53	0.0194	–0.0195	0.0389
1.0040	0.0020	54	54	0.0173	–0.0173	0.0347
1.0036	0.0018	55	55	0.0154	–0.0155	0.0309
1.0032	0.0016	56	56	0.0138	–0.0138	0.0275
1.0028	0.0014	57	57	0.0123	–0.0123	0.0245
1.0025	0.0013	58	58	0.0109	–0.0109	0.0219
1.0022	0.0011	59	59	0.0097	–0.0098	0.0195
1.0020	0.0010	60	60	0.0087	–0.0087	0.0174

RETURN LOSS VERIFICATION WORKSHEET

	3.3 GHz	**10.5 GHz**	**16 GHz**
Source Match Specification:	20 dB	18 dB	18 dB
Peak-to-Peak Ripple:			
Return Loss Value:			
Corrected Directivity Specification:	40 dB	36 dB	36 dB
Peak-to-Peak Ripple:			
Return Loss Value:			

NOTES

Table 3. *Anritsu Service Centers*

UNITED STATES
ANRITSU COMPANY
685 Jarvis Drive
Morgan Hill, CA 95037-2809
Telephone: (408) 776-8300
1-800-ANRITSU
FAX: 408-776-1744

ANRITSU COMPANY
10 New Maple Ave., Unit 305
Pine Brook, NJ 07058
Telephone: (201) 227-8999, 1-800-ANRITSU
FAX: 201-575-0092

ANRITSU COMPANY
1155 E. Collins Blvd
Richardson, TX 75081
Telephone: 1-800-ANRITSU
FAX: 972-671-1877

AUSTRALIA
ANRITSU PTY. LTD.
Unit 3, 170 Foster Road
Mt Waverley, VIC 3149
Australia
Telephone: 03-9558-8177
FAX: 03-9558-8255

BRAZIL
ANRITSU ELECTRONICA LTDA.
Praia de Botafogo, 440, Sala 2401
CEP22250-040, Rio de Janeiro, RJ, Brasil
Telephone: 021-28-69-141
FAX: 021-53-71-456

CANADA
ANRITSU INSTRUMENTS LTD.
215 Stafford Road, Unit 102
Nepean, Ontario K2H 9C1
Telephone: (613) 828-4090
FAX: (613) 828-5400

FRANCE
ANRITSU S.A
9 Avenue du Quebec
Zone de Courtaboeuf
91951 Les Ulis Cedex
Telephone: 016-44-66-546
FAX: 016-44-61-065

GERMANY
ANRITSU GmbH
Grafenberger Allee 54-56
D-40237 Dusseldorf, Germany
Telephone: 0211-68550
FAX: 0211-685555

INDIA
MEERA AGENCIES (P) LTD.
A-23 Hauz Khas
New Delhi 110 016
Telephone: 011-685-3959
FAX: 011-686-6720

ISRAEL
TECH-CENT, LTD.
Haarad St. No. 7, Ramat Haahayal
Tel-Aviv 69701
Telephone: (03) 64-78-563
FAX: (03) 64-78-334

ITALY
ANRITSU Sp.A
Roma Office
Via E. Vittorini, 129
00144 Roma EUR
Telephone: (06) 50-22-666
FAX: (06) 50-22-4252

KOREA
ANRITSU CORPORATION LTD.
#901 Daeo Bldg. 26-5
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Seoul Korea 150 010
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ANRITSU CORPORATION
1800 Onna Atsugi-shi
Kanagawa-Prf. 243 Japan
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FAX: 0462-25-8379

SINGAPORE
ANRITSU (SINGAPORE) PTE LTD.
3 Shenton Way #24-03
Shenton House
Singapore 0106
Telephone: 2265206
FAX: 2265207

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ETECSA
12 Surrey Square Office Park
330 Surrey Avenue
Ferndale, Randburt, 2194
South Africa
Telephone: 011-11-787-7200
FAX: 011-11-787-0446

SWEDEN
ANRITSU AB
Botivid Center
S-1585
Stockholm, Sweden
Telephone: (08) 534-717-00
FAX: (08) 534-717-30

TAIWAN
ANRITSU CO., LTD.
8F, No. 96, Section 3
Chien Kuo N. Road
Taipei, Taiwan, R.O.C.
Telephone: (02) 515-6050
FAX: (02) 509-5519

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200 Capability Green
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