

TUNE-UP AND ADJUSTMENTS

Refer to Location of Adjustments Drawing No. 702-116 and appropriate schematic diagrams for each module.

This equipment was thoroughly tested and inspected at the factory prior to shipment. The actual equipment performance was recorded on the **SRPT-40A TRANSMITTER FACTORY TEST REPORT**. Adjustments should rarely be necessary in the field and should be attempted only by highly trained technicians familiar with this type equipment. Laboratory grade test equipment is required and is listed under **TEST EQUIPMENT AND TOOLS**. For location of adjustments and test points in the SRPT-40A Transmitter refer to Adjustment Location Diagram, 702-116.

NOTE

FOR ALL ADJUSTMENTS, REMOVE THE TOP COVER FROM THE SRPT-40A CHASSIS.

REPLACE THE COVER WHEN THE ADJUSTMENT PROCEDURE IS COMPLETE.

Switching Power Supply Voltage Adjustment

The input to the switching power supply can be from 90 - 264 VAC, 50/60 Hz. The DC B+ (measured off of any red wire) output can be slightly adjusted at B+ ADJUST. The recommended B+ reading should be around 13.5 to 14.5 volts.

B+ Adjustment When Using 15-30VDC External Supply

CAUTION

THIS ADJUSTMENT HAS BEEN SET AT THE FACTORY AND SHOULD *NOT* REQUIRE ANY FURTHER ADJUSTMENTS.

1. Remove AC line voltage from SRPT-40A.
2. Connect up external supply to the 15-30VDC pins of the AUXILLARY connector (see the **ACCESSORY Input Connector** paragraph in the **CONTROL & CONNECTOR FUNCTIONS** section).
3. Turn on external supply and adjust to approximately 18 VDC.
4. Using a VOLT METER, with negative lead connected to ground (chassis), connect the positive lead to a B+ location (refer to any schematic – B+ wiring is red and goes to every PC board).
5. On the TWO-STAGE RF POWER AMPLIFIER board adjust B+ ADJUST (pot R5) in the direction required to achieve a B+ reading of 13.5 Volts. This voltage should be adjusted with the TRANSMIT/STANDBY switch in “STANDBY” position.

WARNING

IF THE 15-30 VOLT SUPPLY IS LESS THAN 16 VOLTS, THE B+ ADJUST SHOULD BE SET TO 12 VOLTS.

THIS MAY LIMIT THE MAXIMUM OUTPUT POWER AND FREQUENCY RANGE.

Frequency Measurement

The RF output frequency of this transmitter should be measured as often as necessary to insure on-frequency operation and to comply with regulations. Monitor the RF output with a frequency counter via an RF coupler or Watt meter.

WARNING

NEVER CONNECT THE FREQUENCY COUNTER DIRECTLY TO THE RF OUTPUT CONNECTOR OF THE SRPT-40A.

THE FREQUENCY COUNTER SHOULD BE COUPLED OFF OF AN RF COUPLER OR A WATT METER.

EXCEEDING THE INPUT POWER RATING OF THE FREQUENCY COUNTER COULD DO INTERNAL DAMAGE TO IT.

Frequency Fine-Tune Adjust

CAUTION

THIS ADJUSTMENT HAS BEEN SET AT THE FACTORY AND SHOULD *NOT* REQUIRE ANY FURTHER ADJUSTMENTS.

1. Set the SRPT-40A on frequency while transmitting.
2. Remove the TRANSMITTER SYNTHESIZER cover.
3. On the TRANSMITTER SYNTHESIZER board tweak the FINE TUNE FREQ ADJ (U15) while viewing a frequency counter.
4. Re-install the TRANSMITTER SYNTHESIZER cover.

Front Panel Meter Adjust – Forward Power

CAUTION

THIS ADJUSTMENT IS ALSO MADE DURING THE FORWARD POWER CALIBRATION ADJUSTMENT.

IT IS NOT RECOMMENDED TO PERFORM THE FORWARD POWER CALIBRATION JUST TO ADJUST THE FRONT PANEL METER - FORWARD POWER.

1. With the SRPT-40A powered on and transmitting, tweak the front panel POWER ADJUST pot fully clockwise for maximum power out.
2. Turn the front panel knob to FORWARD POWER.
3. On the FRONT PANEL CONTROL & METER board, tweak the FWD PWR pot (R48) to correlate the front panel METER (using WATTS scale) to the WATT METER connected to the ANTENNA connector.

Front Panel Meter Adjust – Reverse Power

WARNING

THIS ADJUSTMENT SHOULD ONLY BE MADE DURING REVERSE POWER CALIBRATION.

Front Panel Meter Adjust – PA Current

1. With the SRPT-40A powered on and transmitting, tweak the front panel POWER ADJUST pot fully clockwise for maximum power out.
2. On the FRONT PANEL CONTROL & METER board measure the voltage across P6 pin 8 and P6 pin 4, with the positive lead on P6 pin 8.
3. Divide this voltage by 0.05. The result is the PA current.
4. Turn the METER SELECT knob to PA CURRENT.
5. On the FRONT PANEL CONTROL & METER board adjust the PA CURRENT pot (R50) to set the front panel METER (using the AMPS scale) to equal the calculated current.

Maximum Power Adjust

CAUTION

THIS ADJUSTMENT IS ALSO MADE DURING THE FORWARD POWER CALIBRATION ADJUSTMENT.

IT IS NOT RECOMMENDED TO PERFORM THE FORWARD POWER CALIBRATION JUST TO ADJUST THE MAXIMUM POWER.

1. Remove the cover from the SYNTHESIZER.
2. On the SYNTHESIZER tweak the MAX PWR pot (R74) fully counter-clockwise.
3. With the SRPT-40A powered on and transmitting, tweak the front panel POWER ADJUST pot fully clockwise.
4. On the SYNTHESIZER tweak the MAX PWR pot (R74) clockwise to the desired maximum output power, but do not exceed 50 Watts.

5. Replace the SYNTHESIZER cover.

Encoder Adjustments

1. Connect dummy load with sampling attenuator to ANTENNA connector of SRPT-40A.
2. Connect an accurate standard FM deviation meter and frequency counter to sampling attenuator.
3. Place TRANSMIT/STANDBY switch in “TRANS-MIT” position.
4. Place ENCODE switch in “ON” position and adjust encode level pot R33 on COMPRESSOR AUDIO board, 800-166 for 1.0 KHz deviation.

Audio Adjustments

1. With no audio input, switch METER to AUDIO COMPRESSION position and set ZERO VU ADJUST pot (R22) on COMPRESSOR AUDIO board, 800-166 to read 0 VU on the meter.
2. With ENCODE switch “OFF”, connect a harmonic distortion analyzer to the audio output of the Marti receiver being used with the SRPT-40A.
3. Feed a 100 microvolt signal from the transmitter into the receiver RF input via the sampling attenuator.

WARNING

NEVER FEED THE OUTPUT OF THE SRPT-40A DIRECTLY INTO A RECEIVER!

THE INPUT STAGE OF THE RECEIVER WILL BE DESTROYED INSTANTLY!

4. Modulate the transmitter with a 2500 Hz tone at 3 dB compression.
5. Turn LIMIT LEVEL pot (R26) on the COMPRESSOR AUDIO board, 800-166 to maximum counter-clockwise position. Note distortion. It should be less than 2%. Slowly turn R26 clockwise until an additional 0.1% distortion is indicated on the distortion meter.
6. With ENCODE switch “ON” and using a Marti receiver having a subaudible decoder which has been set to 27 Hz by an audio generator of at least 1% accuracy, adjust ENCODE FREQ pot (R37) for maximum indication on the “DECODE SIGNAL LEVEL” meter of the receiver.
7. Connect an audio voltmeter to the output terminals of the Marti receiver. Feed a 100 microvolt signal into the receiver from an RF attenuator/sampler connected to the output of the transmitter.
8. Using an audio signal generator connected to MIC INPUT 4 (HIGH LEVEL) of the transmitter with a level 20 dB below compression level at 2500 Hz, sweep the audio over the audio response range for the transmitter model number being aligned. Refer to the **SPECIFICATIONS & ORDERING** section for correct response for designator on your transmitter.
9. At the maximum specified response frequency, adjust the FREQ RESPONSE tuning slug in coil L1 on COMPRESSOR AUDIO board, 800-166 for maximum level or best response curve.

Modulation Adjustment

1. Connect a modulation (or deviation) meter to the output of the SRPT-40A.

WARNING

NEVER CONNECT THE MODULATION METER DIRECTLY TO THE RF OUTPUT CONNECTOR OF THE SRPT-40A.

THE MODULATION METER SHOULD BE COUPLED OFF OF AN RF COUPLER OR A WATT METER.

EXCEEDING THE INPUT POWER RATING OF THE MODULATION METER COULD DO INTERNAL DAMAGE TO IT.

2. Remove the TRANSMITTER SYNTHESIZER cover.
3. Inject a tone into the transmitter at maximum audio modulation (in most cases this is 7.5 KHz) at 3 dB compression.
4. Adjust pot R63 on the TRANSMITTER SYNTHESIZER while viewing the modulation meter. Turning the pot clockwise to increase modulation and turn it counter-clockwise to decrease it.

WARNING

INCREASING THE MODULATION WILL INCREASE THE TRANSMITTER BANDWIDTH!

5. Replace the TRANSMITTER SYNTHESIZER cover.

Procedure for Removing Pre-Amp Mixer Board, 800-251

1. Remove knobs and hardware from four level control pots on front panel.
2. Notice the Neutrik mic. connector has a small hole near the center in addition to the three pin receptacles. This hole contains a tiny locking mechanism. Using a small (0.75" wide) flat blade screwdriver, insert tool into hole and turn slowly until screwdriver engages connector lock. Use care!
3. Turn screwdriver counter-clockwise (1/8 turn) until mic. insert releases.
4. After following the above procedure on each input, gently push the black plastic inserts out of the metal shells while simultaneously pushing the gain adjust pots inward until the board releases from the front panel.
5. Remove board from the chassis and service. To re-install board reverse the above procedure. Be careful! The locking mechanism is delicate.

Forward Power Calibration

CAUTION

THIS ADJUSTMENT HAS BEEN SET AT THE FACTORY AND SHOULD *NOT* REQUIRE ANY FURTHER ADJUSTMENTS.

WARNING

TO MAINTAIN CALIBRATION, NEVER ADJUST THE FP CAL (R20) POT ON THE TWO-STAGE RF PA BOARD, OTHERWISE THE FORWARD POWER MUST BE RECALIBRATED.

IF IT BECOMES NECESSARY TO RECALIBRATE, READ AND STUDY THIS SECTION CAREFULLY BEFORE PROCEEDING.

1. Power down the SRPT-40A (i.e., turn off AC LINE switch or turn off external supply).
2. Make sure that the WATT METER is connected to the ANTENNA connector and that the WATT METER is terminated with a 50-Ohm load rated at 50 Watts minimum.
3. Remove cover from SYNTHESIZER.
4. On the SYNTHESIZER make sure that the P2 jumper is in the FP position (FP is the normal position).
5. On the TWO-STAGE POWER AMPLIFIER board, tweak the FP CAL pot (R20) fully clockwise (approximately 20 turns).
6. On the SYNTHESIZER, tweak the MAX PWR pot (R74) fully counter-clockwise (approximately 20 turns).
7. Power up SRPT-40A, but leave front panel TRANSMIT/STANDBY switch in the “STANDBY” position. Wait for SRPT-40A to become locked on frequency.
8. Measure the B+ voltage. Adjust the B+ if necessary by referring to **Switching Power Supply Adjustment** or **B+ Adjustment When Using 15-30VDC External Supply**. If using a 12-15 volt external supply, adjust its voltage to 13.5 to 14.5 volts. It is recommended that the VOLT METER is monitoring B+ throughout this procedure.
9. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 3, and 4 “OFF” and switch 2 “ON”.
10. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = “1”
 - DECIMAL 6 = “any number”
 - DECIMAL 5 = “any number”
 - DECIMAL 4 = “2”
 - DECIMAL 3 = “6”
 - DECIMAL 2 = “3”
 - DECIMAL 1 (far right digit) = “any number”
11. Depress and release the front panel EXECUTE pushbutton switch. The SRPT-40A is now in the Forward Power Calibration mode.
12. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 2, and 4 “OFF” and switch 3 “ON”.
13. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = “1”
 - DECIMAL 6 = “any number”
 - DECIMAL 5 = “any number”
 - DECIMAL 4 = “any number”
 - DECIMAL 3 = “any number”
 - DECIMAL 2 = “any number”
 - DECIMAL 1 (far right digit) = “any number”
14. Depress and release the front panel EXECUTE pushbutton switch. This command will set the internal power control pot to maximum and the position of the POWER ADJUST pot is ignored.
15. Put the TRANSMIT/STANDBY switch in the “TRANSMIT” position. The output power (as indicated by the WATT METER) should be close to 0 Watts.
16. The front panel TRANSMIT LED should be off. On the SYNTHESIZER, tweak the MAX PWR pot (R74) clockwise until the TRANSMIT LED just comes on. The output power should increase as indicated by the WATT METER.

NOTE

THE HIGH VSWR LED MAY BLINK FROM TIME TO TIME, BUT SIMPLY IGNORE IT DURING THIS CALIBRATION PROCEEDURE.

17. On the TWO-STAGE POWER AMPLIFIER board, tweak the FP CAL pot (R20) counter-clockwise (slowly) until the output power (as indicated by the WATT METER) reaches 56 Watts.

WARNING

THE FP CAL POT (R20) IS NOW CALIBRATED.

DO NOT ADJUST IT ANYMORE!

18. On the FRONT PANEL CONTROL & METER board, if not already in these positions, adjust S1 dip-switches with switch 1, 2, and 4 "OFF" and switch 3 "ON".
19. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = "2"
 - DECIMAL 6 = "any number"
 - DECIMAL 5 = "0"
 - DECIMAL 4 = "any number"
 - DECIMAL 3 = "any number"
 - DECIMAL 2 = "any number"
 - DECIMAL 1 (far right digit) = "any number"
20. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 0".
21. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 49.0 Watts.
22. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "1".
23. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 1".
24. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 42.0 Watts.
25. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "2".
26. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 2".
27. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 35.0 Watts.
28. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "3".
29. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 3".
30. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 28.0 Watts.
31. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "4".
32. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 4".
33. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 21.0 Watts.
34. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "5".
35. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 5".
36. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 14.0 Watts.
37. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "6".
38. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at "segment 6".
39. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 7.0 Watts.
40. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = "7".

41. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at “segment 7”.
42. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 0.0 Watts.
43. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “8”.
44. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw power into an internal calibration table at “segment 8”.

NOTE

THE INTERNAL FORWARD POWER CALIBRATION TABLE IS NOW COMPLETE.

45. On the SYNTHESIZER, tweak the MAX PWR pot (R74) to the desired *maximum* output power, but do not exceed 50 Watts.

NOTE

AT THIS POINT WE WILL NOW CALIBRATE THE FRONT PANEL METER – FORWARD POWER.

46. Turn the front panel knob to FORWARD POWER.
47. On the FRONT PANEL CONTROL & METER board, tweak the FWD PWR pot (R48) to correlate the front panel METER (using WATTS scale) to the WATT METER connected to the ANTENNA connector.
48. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 3, and 4 “OFF” and switch 2 “ON”.
49. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = “1”
 - DECIMAL 6 = “any number”
 - DECIMAL 5 = “any number”
 - DECIMAL 4 = “4”
 - DECIMAL 3 = “0”
 - DECIMAL 2 = “3”
 - DECIMAL 1 (far right digit) = “any number”
50. Depress and release the front panel EXECUTE pushbutton switch. The SRPT-40A is now in the Normal Operation mode, with Control Switches in their default settings. The power may change depending on the position of the front panel POWER ADJUST pot.
51. Tweak the front panel POWER ADJUST pot fully clockwise to verify that the output power goes to the set maximum power. Tweak the POWER ADJUST pot counter-clockwise verifying that the output power drops as tweaking. The output power should be close to 0 Watts when the POWER ADJUST pot is fully counter-clockwise.
52. Adjust the POWER ADJUST pot to the desired output power.
53. If you are not satisfied with the maximum output power, first adjust the front panel POWER ADJUST pot fully clockwise for maximum power, then adjust the MAX PWR pot (R74) on the SYNTHESIZER to the desired maximum output power.
54. Replace the cover on the SYNTHESIZER.

Reverse Power Calibration

CAUTION

THIS ADJUSTMENT HAS BEEN SET AT THE FACTORY AND SHOULD *NOT* REQUIRE ANY FURTHER ADJUSTMENTS.

WARNING

TO MAINTAIN CALIBRATION, NEVER ADJUST THE RP CAL (R17) POT ON THE TWO-STAGE RF PA BOARD, OTHERWISE THE REVERSE POWER MUST BE RECALIBRATED.

IF IT BECOMES NECESSARY TO RECALIBRATE, READ AND STUDY THIS SECTION CAREFULLY BEFORE PROCEEDING.

1. Power down the SRPT-40A (i.e., turn off AC LINE switch or turn off external supply).
2. Make sure that the WATT METER is connected to the ANTENNA connector.

NOTE

IT IS PRESUMED THAT A BIRD WATT METER OR EQUIVALENT IS USED.

3. Disconnect the 50-Ohm load from the Bird WATT METER.
4. Rotate the element in the Bird Watt Meter 180 degrees counter-clockwise for measuring reverse power.
5. Remove cover from SYNTHESIZER.
6. On the SYNTHESIZER place jumper on P2 in the RP position.
7. On the TWO-STAGE POWER AMPLIFIER board, tweak the RP CAL pot (R17) fully clockwise (approximately 20 turns).
8. On the SYNTHESIZER, tweak the MAX PWR pot (R74) fully counter-clockwise (approximately 20 turns).
9. Power up SRPT-40A, but leave front panel TRANSMIT/STANDBY switch in the "STANDBY" position. Wait for SRPT-40A to become locked on frequency.
10. Measure the B+ voltage. Adjust the B+ if necessary by referring to **Switching Power Supply Adjustment** or **B+ Adjustment When Using 15-30VDC External Supply**. If using a 12-15 volt external supply, adjust its voltage to 13.5 to 14.5 volts. It is recommended that the VOLT METER is monitoring B+ throughout this procedure.
11. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 3, and 4 "OFF" and switch 2 "ON".
12. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = "1"
 - DECIMAL 6 = "any number"
 - DECIMAL 5 = "any number"
 - DECIMAL 4 = "3"
 - DECIMAL 3 = "3"
 - DECIMAL 2 = "3"
 - DECIMAL 1 (far right digit) = "any number"
13. Depress and release the front panel EXECUTE pushbutton switch. The SRPT-40A is now in the Reverse Power Calibration mode.
14. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 2, and 4 "OFF" and switch 3 "ON".
15. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = "1"
 - DECIMAL 6 = "any number"
 - DECIMAL 5 = "any number"
 - DECIMAL 4 = "any number"
 - DECIMAL 3 = "any number"
 - DECIMAL 2 = "any number"
 - DECIMAL 1 (far right digit) = "any number"
16. Depress and release the front panel EXECUTE pushbutton switch. This command will set the internal power control pot to maximum and the position of the POWER ADJUST pot is ignored.

17. Put the TRANSMIT/STANDBY switch in the “TRANSMIT” position. The output “reverse” power (as indicated by the WATT METER) should be close to 0 Watts.
18. The front panel TRANSMIT LED should be off. On the SYNTHESIZER, tweak the MAX PWR pot (R74) clockwise until the TRANSMIT LED just comes on. The output “reverse” power should increase as indicated by the WATT METER.

NOTE

THE HIGH VSWR LED MAY BLINK FROM TIME TO TIME, BUT SIMPLY IGNORE IT DURING THIS CALIBRATION PROCEEDURE.

19. On the TWO-STAGE POWER AMPLIFIER board, tweak the RP CAL pot (R17) counter-clockwise (slowly) until the output “reverse” power (as indicated by the WATT METER) reaches 12.8 Watts.

WARNING

THE RP CAL POT (R17) IS NOW CALIBRATED.

DO NOT ADJUST IT ANYMORE!

20. On the FRONT PANEL CONTROL & METER board, if not already in these positions, adjust S1 dip-switches with switch 1, 2, and 4 “OFF” and switch 3 “ON”.
21. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = “2”
 - DECIMAL 6 = “any number”
 - DECIMAL 5 = “0”
 - DECIMAL 4 = “any number”
 - DECIMAL 3 = “any number”
 - DECIMAL 2 = “any number”
 - DECIMAL 1 (far right digit) = “any number”
22. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 0”.
23. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 11.2 Watts.
24. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “1”.
25. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 1”.
26. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 9.6 Watts.
27. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “2”.
28. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 2”.
29. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 8.0 Watts.
30. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “3”.
31. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 3”.
32. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 6.4 Watts.
33. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “4”.
34. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 4”.
35. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 4.8 Watts.
36. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “5”.
37. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 5”.

38. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 3.2 Watts.
39. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “6”.
40. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 6”.
41. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 1.6 Watts.
42. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “7”.
43. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 7”.
44. On the SYNTHESIZER, tweak the MAX PWR pot (R74) such that the output power reads 0.0 Watts.
45. On the front panel FREQUENCY SELECT pushwheel switches, change *only* DECIMAL 5 = “8”.
46. Depress and release the front panel EXECUTE pushbutton switch. This command will store the raw reverse power into an internal calibration table at “segment 8”.

NOTE

THE INTERNAL REVERSE POWER CALIBRATION TABLE IS NOW COMPLETE.

AT THIS POINT WE WILL NOW CALIBRATE THE FRONT PANEL METER – REVERSE POWER.

47. On the SYNTHESIZER, tweak the MAX PWR pot (R74) so that the reverse output power reads 10 Watts as indicated by the Bird WATT METER.
48. Turn the front panel METER SELECT knob to REVERSE POWER.
49. On the FRONT PANEL CONTROL & METER board, tweak the REV PWR pot (R49) to correlate the front panel METER (using WATTS scale) to the WATT METER connected to the ANTENNA connector.
50. On the SYNTHESIZER, tweak the MAX PWR pot (R74) fully counter-clockwise.
51. Put the TRANSMIT/STANDBY switch in the “STANDBY” position.
52. Remove the SYNTHESIZER P2 jumper from the RP position and put the jumper in the FP position.
53. On the FRONT PANEL CONTROL & METER board, adjust S1 dip-switches with switch 1, 3, and 4 “OFF” and switch 2 “ON”.
54. Set the front panel FREQUENCY SELECT pushwheel switches as follows:
 - DECIMAL 7 (far left digit) = “1”
 - DECIMAL 6 = “any number”
 - DECIMAL 5 = “any number”
 - DECIMAL 4 = “4”
 - DECIMAL 3 = “0”
 - DECIMAL 2 = “3”
 - DECIMAL 1 (far right digit) = “any number”
55. Depress and release the front panel EXECUTE pushbutton switch. The SRPT-40A is now in the Normal Operation mode, with Control Switches in their default settings.
56. Re-connect the 50-Ohm load on the WATT METER.
57. Rotate the WATT METER element clockwise 180 degrees.
58. Put the TRANSMIT/STANDBY switch in the “TRANSMIT” position.
59. Tweak the front panel POWER ADJUST pot fully clockwise.
60. Adjust the MAX PWR pot (R74) on the SYNTHESIZER to the desired maximum output power.
61. Replace the cover on the SYNTHESIZER.

SRPT-40A ADJUSTMENT LOCATIONS 702-116

