

J94024C (24C) LOOP CHECKER GENERATOR

TESTS

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1. GENERAL

1.01 This section describes a method for testing the output level and frequency limits of the 24C loop checker generator.

1.02 This section is reissued to include references to the SD-1A218-01 circuit associated with the No. 1 two-wire Electronic Switching System (ESS).

1.03 The tests covered are:

A. Flat Output Level: This test checks the flat output of the 24C generator.

B. Shaped Output Level: This test checks the shaped output at the line link connector bank or final frame appearance.

C. Output Power at 3000-Hz End of Sweep:
This test checks the output power at the 3000-Hz end of the sweep.

D. Output Power at 1000-Hz End of Sweep:
This test checks the output power at the 1000-Hz end of the sweep.

1.04 If the requirements of this section cannot be met, refer to Section 103-344-701.

1.05 Lettered Steps: A letter a, b, c, etc, added to a step number in Parts 3 and 4

of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

All Tests

2.01 23A Transmission Measuring Set J94023A or 21A Transmission Measuring Set J94021A and a 2AB Auxiliary Transmission Measuring Set J94002AB.

2.02 Testing Cord, P3N cord, 3 feet long, equipped with one 310 plug and one 241A plug (3P17A cord).

2.03 Testing Cord, P2B cord, 6 feet long, equipped with two 310 plugs (2P4C cord).

Test B

2.04 Testing Cord, P3U cord, 7 feet long, equipped with one 310 plug and one 351A plug (3P28A cord).

2.05 Testing Cord, W2W cord, 10 feet long, equipped with one 310 plug, one 360B and one 360C tool (2W17C cord), and two KS-6278 connecting clips.

Tests B, C, and D

2.06 Blocking tools as required. Use tools and apply as covered in Section 069-020-801.

SECTION 103-344-501

3. PREPARATION

| STEP | ACTION | VERIFICATION |
|-------------|---------------|---------------------|
|-------------|---------------|---------------------|

All Tests

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|----|---|--|
| 1a | If using 23A TMS— Set DIAL-MEAS-SLV key to MEAS. | |
| 2a | Set INPUT 600-900 switch to 900. | |
| 3b | If using 21A TMS and 2AB auxiliary transmission measuring set— Calibrate 21A TMS in accordance with Section 103-221-101. | |
| 4b | Use a 3P17A cord to patch the DET IN 600Ω jack of 21A TMS to TMS jack of 2AB ATMS. | |
| 5b | On the 2AB ATMS— Operate DIAL-SLV key to normal. | |
| 6b | Operate 2DB pad key to OUT. | |
| 7b | Operate TEST switch to REC 900Ω. | |

Note: Level measurements and requirements in this section have been corrected for the 0.5-dBm loss in the 2AB ATMS.

Tests B, C, and D

- | | | |
|---|---|--|
| 8 | Block all test line circuit OS relays (SD-98100-01) or A relays (SD-1A218-01) operated. | |
|---|---|--|

4. METHOD

| STEP | ACTION | VERIFICATION |
|-------------|---------------|---------------------|
|-------------|---------------|---------------------|

A. Flat Output Level

- | | | |
|-----|--|---|
| 8 | At the loop checker generator— Observe that the CHECK switch is in its OPER position. | |
| 9a | If the 23A TMS is used— Connect the MEAS jack of the 23A TMS to the FLAT OUT CAL jack of the loop checker generator using 2P4C cord. | 23A TMS reads -8.3 to -8.5 dBm average value. |
| 10b | If the 21A TMS and 2AB ATMS are used— Connect the MEAS jack of the 2AB ATMS to the FLAT OUT CAL jack of the loop checker generator using 2P4C cord. | 21A TMS reads -8.8 to -9.0 dBm average value. |

| STEP | ACTION | VERIFICATION |
|-------------------------------|---|--|
| 11 | Observe the meter of the TMS for at least 30 seconds. | Deviation from average value should be less than ± 0.1 dBm. |
| 12 | Remove test cord from FLAT OUT CAL jack. | |
| B. Shaped Output Level | | |
| 9a | <p>◆ If the 23A TMS is used— At the line link, connector bank, or final frame (SD-98100-01) or at the trunk switching circuit or service link circuit (SD-1A218-01)— Using a 3P28A or 2W17C cord, connect the MEAS jack of 23A TMS to the circuit associated with the loop checker generator, which is either (a) the line link, connector bank, or final frame appearance of SD-98100-01 or (b) the trunk switching circuit or service link circuit of SD-1A218-01.◆</p> | |
| 10b | <p>◆ If the 21A and 2AB TMS are used— At the line link, connector bank, or final frame (SD-98100-01) or at the trunk switching circuit or service link circuit (SD-1A218-01)— Using a 3P28A or 2W17C cord, connect the MEAS jack of the 2AB ATMS to the circuit associated with the loop checker generator, which is either (a) the line link, connector bank, or final frame appearance of SD-98100-01 or (b) the trunk switching circuit or service link circuit of SD-1A218-01.◆</p> | |
| 11 | Refer to Section 103-344-701 for method of determining office loss. Let this value be represented by x. | |
| 12 | Operate and hold CHECK switch of loop checker generator in LEV CHK position until TMS reading is obtained. | |
| Examples: | | |
| | <p>(a) If $x = 0.7$-dB loss, then $0.7 - 0.5 = 0.2$ dBm; hence 23A TMS reading = $+0.2 \pm 0.2$ dB. (b) If $x = 1.2$-dB loss, then $1.2 - 1.0 = 0.2$ dBm; hence 21A TMS reading = $+0.2 \pm 0.2$ dB.</p> | <p>23A TMS reading $x - 0.5 \pm 0.2$ dBm average value. Record this reading. 21A TMS reading $x - 1.0 \pm 0.2$ dBm average value. Record this reading.</p> |
| 13 | Remove test cord from test line appearance. | |
| 14a | If the 23A TMS is used— At the loop checker generator— | |

SECTION 103-344-501

| STEP | ACTION | VERIFICATION |
|-------------|--|---|
| | Connect the MEAS jack of the 23A TMS to the GEN OUT CAL jack of the loop checker generator using 2P4C cord. | |
| 15b | If the 21A and 2AB TMS are used— At the loop checker generator— Connect the MEAS jack of the 2AB ATMS to the GEN OUT CAL jack of the loop checker generator using 2P4C cord. | |
| 16 | Operate and hold CHECK switch of loop checker generator in LEV CHK position until TMS reading is obtained. | TMS reading within ± 0.5 dB of reading obtained in Step 12. Record this reading. |
| 17 | Remove test cord from GEN OUT CAL jack. | |
| 18 | Remove blocking tool from test line OS relays (SD-98100-01) or A relays (SD-1A218-01). | |

C. Output Power at 3000-Hz End of Sweep

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| 9a | If the 23A TMS is used— At the loop checker generator— Connect the MEAS jack of 23A TMS to the GEN OUT CAL jack of the loop checker generator using 2P4C cord. | |
| 10b | If the 21A and 2AB TMS are used— At the loop checker generator— Connect the MEAS jack of the 2AB ATMS to the GEN OUT CAL jack of the loop checker generator using 2P4C cord. | |
| 11 | Operate CHECK switch on loop checker generator to FREQ CHK. | |
| 12 | Starting from clockwise end, slowly turn FREQ CHK potentiometer counterclockwise for maximum reading on TMS. | TMS reads 2.1 to 3.5 dB more power than reading recorded in Test B, Step 16. |
| 13 | Remove test cord from GEN OUT CAL jack. | |
| 14 | Restore CHECK switch on loop checker generator to OPER. | |
| 15 | Remove blocking tools from test line OS relays (SD-98100-01) or A relays (SD-1A218-01). | |

D Output Power at 1000-Hz End of Sweep

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|----|---|
| 9a | If the 23A TMS is used— At loop checker generator— |
|----|---|

| STEP | ACTION | VERIFICATION |
|------|--|--|
| | Connect the MEAS jack of the 23A TMS to the GEN OUT CAL jack on the loop checker generator using 2P4C cord. | |
| 10b | If the 21A and 2AB TMS are used— At loop checker generator— Connect the MEAS jack of 2AB ATMS to the GEN OUT CAL jack of the loop checker generator using 2P4C cord. | |
| 11 | Operate CHECK switch on loop checker generator to FREQ CHK. | |
| 12 | Starting from counterclockwise end, slowly turn FREQ CHK potentiometer clockwise for minimum reading on TMS. | TMS reads 5.7 to 6.3 dB less power than reading recorded in Test B, Step 16. |
| 13 | Remove test cord from GEN OUT CAL jack. | |
| 14 | Restore CHECK switch on loop checker generator to OPER. | |
| 15 | ◆ Remove blocking tools from test line OS relays (SD-98100-01) or A relays (SD-1A218-01).◆ | |

