LOW SPEED SIGNALING SYSTEM
USING DATA SET 115A
TEST PROCEDURES

1. GENERAL

1.01 This section describes the test procedures to be followed when investigating trouble conditions in the low speed signaling system using data set 115A. This section is to be used in conjunction with Section 312-812-300. The procedures given in this section are each independent tests used to verify the operability of individual units as required to support trouble isolation procedures.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 A KS-20538 volt-ohm-milliammeter (VOM), or equivalent, with at least 10,000Ω/volt resistance, will be used for all measurements required while performing the procedures in this section.

1.04 Identification of terminals of the D5A terminal strips on the 43A1 data mounting and the 233C mounting plate and the interface driver (AE45 CP) is given in Section 312-812-200. In this practice, when reference is made to terminals on a D5A terminal strip, only the row number of the terminal is given.

2. TEST PROCEDURES

Caution: Use extreme care when making measurements and connections to contact only the specified terminals.

DATA SET 115A

2.01 The following procedure is used to verify the operation of data set 115A. This test requires that the data set to be tested is not in use and a spare nest location is available in the 43A1 data mounting. This test will not impair customer service. All measurements in this procedure are made at the appropriate D5A terminal strip on the 43A1 data mounting except as noted.

(a) Verify that −48V is present at row 2 and ground is present at row 1. Verify that −43V is present at terminal 13 of the data set connector.

(b) Install data set 115A in the spare nest location in the 43A1 data mounting and observe that the $\overline{N}$ indicator is illuminated and that the G indicator remains extinguished.

(c) Measure the voltage between terminals 7 (negative) and 8 (positive). The meter should indicate approximately 48V.

Note: This voltage is not referenced to ground.

(d) Clip the positive VOM lead to ground and, using X10 ohms scale, measure the resistance at each of the following terminals:

TERMINAL	RESISTANCE
3	1KΩ ±100Ω
4	1KΩ ±100Ω
5	1KΩ ±100Ω
6	>20KΩ

(e) Temporarily connect terminal 7 to terminal 8 and observe that $\overline{N}$ and G indicators are extinguished.

(f) Measure the resistance (positive VOM lead to ground) at each of the following terminals:

TERMINAL	RESISTANCE
3	>20KΩ
4	>20KΩ
5	>20KΩ
6	>20KΩ

(g) With temporary connection made in (e) still installed, temporarily connect terminal 7 or terminal 8 to ground and observe that the G indicator is illuminated and that the $\overline{N}$ indicator remains extinguished.

(h) Measure resistance (positive VOM lead to ground) at each of the following terminals:

TERMINAL	RESISTANCE
3	1KΩ ±100Ω
4	1KΩ ±100Ω
5	>20KΩ
6	1KΩ ±100Ω

(i) Remove all temporary connections from the terminal strip and remove the data set from the nest.

CK2 CIRCUIT PACK (CP)

2.02 The following procedure is used to verify the operation of the CK2 CP in the 43A1 data mounting. The test is made with the CP installed normally. This test will not impair customer service.

(a) Verify that −48V is present at terminal E1, −43V at E4, and ground is present at terminal E2 of the CK2 CP.

(b) Measure the voltage from terminal E3 on the CK2 CP to ground. With no alarm signal input, the meter indicates approximately −25V. With an alarm present, the meter indicates approximately −1V.

(c) With no alarm input or output at the CK2 CP, briefly (less than 8 seconds) ground terminal E3. Relay K1 remains operated. (Open circuit between terminals E4 and E5.)

(d) Ground terminal E3. After 8 seconds, relay K1 releases. (Closed circuit between terminals E4 and E5.) When ground is removed, relay K1 operates after 8 seconds. (Open circuit between terminals E4 and E5.)

INTERFACE DRIVER (AE45 CP)

2.03 The following procedure is used to verify operation of the interface driver. This test interrupts service to the customer; hence, ***it must be performed only with the knowledge and permission of the customer or when the interface driver (AE45 CP) is out of service.*** All measurements in this procedure are made at the interface driver (AE45 CP).

(a) Verify that −48V is present at terminal E1 and ground at terminal E4.

(b) Establish communication with the alarm company personnel.

(c) Disconnect and tag leads on terminals E6 and E8 of the interface driver or, if the input to the interface driver is from a data set 405B, disconnect the cord from connector P1 on data set.

(d) Measure the voltage between terminals E3 and E7. The meter indicates 0V, the alarm company sees a loop normal condition, and the N′ and G′ indicator LEDs are extinguished.

(e) Temporarily ground terminal E6 and measure the voltage between terminals E3 and E7. The meter indicates 30 to 130V, the alarm company sees a loop $\overline{N}$ condition (loop open), and the N′ indicator LED illuminates.

(f) Remove ground from terminal E6.

(g) Temporarily ground terminal E8 and measure the voltage between terminal E7 and ground. The meter indicates 0V, the alarm company sees a loop ground condition, and only the G′ indicator LED illuminates.

(h) Remove ground from terminal E8.

(i) Restore service by reconnecting leads disconnected in (c) or reconnecting cord to connector P1 on the data set 405B.