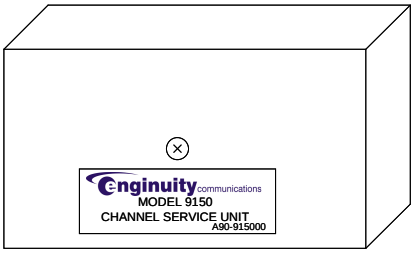
Channel Service Unit
Model 9150-00

CLEI™ Code: NCCSW111AA

Contents



1. General

1.01 The Enginuity 9150-00, Channel Service Unit, is used to terminate a 2-wire special service, private line circuit or polled network service at the customer premises. Features include over-voltage protection, current surge protection, a balanced termination, DC isolation and a switchable attenuator from 1.2 to 16.2dB in 1dB steps. A switchable polled network service capacitor is provided. The Enginuity 9150-00 is electrically equivalent to the WECO 150A CSU.

1.02 This practice is revised to reflect the Enginuity sketch of the unit.

2. Operating Description

2.01 Refer to Figure 1, the 9150-00 Block Diagram, as needed, while reading the following functional description of circuit operation.

2.02 The 9150-00 is used to couple VF signals. Its is a passive unit that provides an interface between voice-band data equipment and a 2-wire Private Line (PL) service or a polled network service such as the Dataphone Select-a-Station and the Transaction Network.

2.03 Signals to/from the line are coupled through the transformer. The transformer terminates the line in 600 Ohms and provides longitudinal balance isolation and isolation between the telephone line and the costumer equipment.

2.04 Two Zener diodes protect the circuitry from transients and limit current surges on the line side and one varistor acts as a fuse for protection against high currents on the drop side.

2.05 Two double DIP switch attenuators (S2 and S3), having values of 1dB, 2dB, 4dB and 8dB, provide overall attenuation of 1.2dB (all switches OUT) to 16.2dB (all switches IN) in 1dB increments. Switch settings are shown in Table 1. The insertion loss of the 9150-00 at 1kHz, with the attenuators set for 0dB at 600 Ohms.

Table 1. 9150-00 Attenuation Switch Settings

Desired Loss of CSU (dB)	ATTENUATOR SETTINGS				Attenuator Setting in dB (See Note)
	1.0dB Switch Pos.	2.0dB Switch Pos.	4.0dB Switch Pos.	8.0dB Switch Pos.	
0.8 to 1.7	OUT	OUT	OUT	OUT	0
1.8 to 2.7	IN	OUT	OUT	OUT	1
2.8 to 3.7	OUT	IN	OUT	OUT	2
3.8 to 4.7	IN	IN	OUT	OUT	3
4.8 to 5.7	OUT	OUT	IN	OUT	4
5.8 to 6.7	IN	OUT	IN	OUT	5
6.8 to 7.7	OUT	IN	IN	OUT	6
7.8 to 8.7	IN	IN	IN	OUT	7
8.8 to 9.7	OUT	OUT	OUT	IN	8
9.8 to 10.7	IN	OUT	OUT	IN	9
10.8 to 11.7	OUT	IN	OUT	IN	10
11.8 to 12.7	IN	IN	OUT	IN	11
12.8 to 13.7	OUT	OUT	IN	IN	12
13.8 to 14.7	IN	OUT	IN	IN	13
14.8 to 15.7	OUT	IN	IN	IN	14
15.8 to 16.7	IN	IN	IN	IN	15

Note: The 1kHz loss through CSU between 600-ohm source and 600-ohm load is equal to attenuator setting plus 1.2dB (+ or - 0.45dB).

2.06 A capacitor on the line side (switch controlled) is provided to block DC current in the tip and ring circuit only when utilizing the 9150-00 is polled network services. The switch must be closed (shorting the capacitor) for 2-wire Private Line services.

3 Inspection and Warranty

Inspection

3.01 Upon receipt of the equipment, inspect it thoroughly. If the equipment has been damaged in transit, report the damage to the transportation company and to Enginuity.

Warranty

3.02 Enginuity warrants this product to be free of defects at the time of shipment. Enginuity also warrants this product to be functional for the period specified by the terms and conditions governing the sale of the product.

3.03 This equipment should not be field repaired. Any attempt to repair or modify the equipment by anyone other than an authorized Enginuity representative will void the warranty. If the equipment is suspected of being faulty, replace it with another unit and retest. If the replacement unit operates correctly, the original unit may be faulty and should be returned for repair.

Repair and Return

3.04 Before returning equipment, a Return Material Authorization (RMA) number must first be requested from Enginuity. Once the number is obtained, please include a description of the problem then return the equipment to:

Enginuity Communications
3545 Stern Avenue
St. Charles, IL 60174
Attn: RGM Department

3.05 Enginuity will repair or replace any defective Enginuity equipment without cost during the warranty period if it is found to be defective for any reason other than abuse, improper use or improper installation. If the equipment is found to be defective, contact Enginuity. If a replacement is required, it will be shipped in the fastest manner consistent with the urgency of the situation.

3.06 Enginuity will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact Enginuity or your local Enginuity Sales Representative for details.

Technical Assistance

3.07 If technical assistance is required, contact Enginuity Technical Service Department by calling:

(630) 444-0778 or
1-800-980-ECOM (1-800-980-3266).

4. Mounting

4.01 The 9150-00 is designed to mount on a wall or other flat surface directly over an outlet box. Remove the cover from base plate by removing the screw followed by removal of the top cover. Remove the exposed PC board by pressing outward on one of the two metal tabs of the base plate. Route the wiring from the telephone line and costumer equipment through the elongated slot in the base plate. Mount the base plate to the wall with two screws (not provided) through the two key-hole slots in the base plate.

5. Installer Connections

5.01 Installer connections are made to the appropriate screw terminal of the printed circuit board in accordance with Table 2. Ensure all connections are secure and the Polled/Norm switch is in the correct position. Place wire between washer and head screw for CT and CR connections.

Lead Designation	Screw Terminal
Customer Tip (Drop Side)	CT
Customer Ring (Drop Side)	CR
Line Tip	T
Line Ring	R

Table 2

6. Testing and Alignment

6.01 Alignment consists of setting the attenuators for the attenuation desired. For example, when all switches are OUT, the 9150-00 has about 1.2dB of loss; when all switches are IN, the 9150-00 has a nominal 16.2dB of loss (refer to Table 1). For 2W Private Line service, make sure switch S1 is set to Norm. Note: This same procedure is used when the unit is connected to a Polled Network service except S1 must be set to the Polled position.

6.02 Upon completion of installation, re-position the top cover to the base plate and secure in place.

7. Specifications

- Pad Range: 1.2 to 16.2dB, in 1dB steps
- Impedance: 600 Ohms, drop and line
- Insertion Loss: 1kHz, 1.2dB nominal plus attenuator
- Insertion Loss tolerance: +.5dB -.4dB
- Over-Voltage Protection: 8.2 Volts, peak
- Surge Current: Varistor protected
- Polled Network Service: DC current blocking capacitor, line side (switch selectable)
- Operating Environment: 0° to 50°C
- Dimensions: Approx. 4" x 3" x 1 3/4"
- Weight: Approx. 10 oz.

Figure 1. 9150-00 Block Diagram