These amplitude/slope equalizer systems offer independent gain and slope adjustment in the IF and L frequency bands. These systems are designed to compensate for long cable run loss and to provide system redundancy. The DL1E Series has independent dual-channel equalizer modules (DL1E) with slope and gain adjustment. The RL Series is a 1:1 redundant system that adds redundancy with automatic and manual switchover modes of operation.

**Features**
- Hot swappable RF modules
- Fault tolerant design
- Fully redundant, hot swappable power supplies
- Remote control via RS485 or RS422 user selectable (DL1E and RL1E only)
- Remote status
- Module current fault detection
- Front panel module bias display (DL1E and RL1E only)
- Auto/manual mode (RL1E only)
- Off-line input/output access (RL1E only)

**Options**
- Remote RS232, or Ethernet
- Input/output signal monitors
- Increased gain
- Increased output power
  (1 dB compression point)
Specifications

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Dual Channel Model Numbers</th>
<th>1:1 Redundant Model Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>950 – 1450</td>
<td>DL1E-950145-H</td>
<td>RL1E-950145-H</td>
</tr>
<tr>
<td>950 – 1750</td>
<td>DL1E-950175-H</td>
<td>RL1E-950175-H</td>
</tr>
<tr>
<td>950 – 2150</td>
<td>DL1E-950215-H</td>
<td>RL1E-950215-H</td>
</tr>
</tbody>
</table>

**L-Band**

Gain ................................................................. 15 dB minimum (at center frequency and 6 dB slope adjustment), 18 dB nominal (at 0 dB slope)
Gain adjustment range ................................. 20 dB minimum
Amplitude slope adjustment range ...................... 0 to 6 dB (see Figure 2)
Amplitude flatness ........................................ 1.5 dB p-p maximum (at 0 dB slope)
Power output (P1dB) ......................................... +10 dBm minimum (at maximum gain and 0 dB slope)
Third order intercept point .............................. +20 dBm minimum (at maximum gain and 0 dB slope)
Channel-to-channel match .............................. 2.5 dB maximum
Noise figure ................................................... 10 dB maximum (at maximum gain and 0 dB slope)
Spurious (signal independent) ......................... Below thermal noise
AM/PM conversion ........................................ 0.5°/dB maximum at 0 dBm output
Isolation ......................................................... 50 dB minimum
Input/output return loss .............................. 18 dB minimum
Input/output impedance ............................... 50 ohms
Dual Channel and Redundant Amplitude/Slope Equalizer Systems with Hot Swappable RF Modules

General Specifications

Primary Power Requirements
Voltage ................................................................. 90–250 VAC
Frequency ........................................................... 47–63 Hz
Power consumption ........................................... 40 W typical

Summary Alarm
Contact closure/open for DC voltage and/or amplifier alarm
Status alarm readout on remote control bus

Physical
Weight ................................................................. 20 pounds (9.07 kg) typical
Overall dimensions ........................................... 19” [482.6mm] x 1.75” [44.5mm] panel x 22” [558.8mm] maximum
(“chassis depth 20”)
AC input receptacle ........................................... IEC-320
RF connectors (L-band) ....................................... Type SMA female
Summary alarm interface mating connector ......... DEM-9P
Remote interface ................................................... DEM-9S for RS422 and RS485,
DB-25P for RS232,
RJ-45 female for Ethernet

Environmental
Operating
Ambient temperature ........................................... 0 to 50°C
Relative humidity ............................................. Up to 95% at 30°C
Atmospheric pressure ....................................... Up to 10,000 feet
Nonoperating
Temperature ................................................... -50 to +70°C
Relative humidity ........................................... Up to 95% at 40°C
Atmospheric pressure ....................................... Up to 40,000 feet
Shock and vibration ........................................ Normal handling by commercial carriers

L-Band Slope Adjustment

![Graph: Amplitude Response (dB) vs Frequency (MHz)]
Options

1. Input monitor with -20 dBc nominal level.

2. Output monitor with -20 dBc nominal level.

11. Increased output power (L-band only).
   - Power output (1 dB compression): +20 dBm minimum (at maximum gain and 0 dB slope).
   - Third order intercept point: +30 dBm minimum (at maximum gain and 0 dB slope).
   - Output return loss: 14 dB minimum.

15. Impedance, 50 ohms (IF-band only).

16. Increased gain, 30 dB minimum (at center frequency and 6 dB slope adjustment).

17. Remote control (DL1E and RL1E only).
   - B. RS422/485 (supplied as standard).
   - C. RS232. This option will delete RS422/RS485.
   - H. 10/100Base-T Ethernet interface providing:
     - Web-browser-based configuration
     - SNMP 1.0 configuration
     - Alarm reporting via SNMP Trap
     - Telnet access
     - Password protection

Note: Missing option numbers are not applicable to this product.

Typical Panel View