

# 1.2 GHz Field-Adjustable Gain Subscriber Drop Amplifiers

## LRSA 1510 ADJ-x Series

LINDSAY  
BROADBAND

Lindsay's extreme bandwidth adjustable subscriber drop amplifiers are two-way 1.2 GHz devices supporting DOCSIS® 3.1 frequencies. They offer available upstream and downstream splits of 42/54 and 85/102 MHz, and field-adjustable forward and reverse gains.

Customers with long drops and excessive splitter losses benefit from advanced Gallium Arsenide (GaAs) technology delivering improved distortion and noise performances. These amplifiers are specifically designed for both indoor and outdoor applications with protective coating and 6 kV surge withstand capabilities for enhanced system reliability.



## FEATURES

- 1.2 GHz Gallium Arsenide technology
- 3 dB noise figure
- Two-way active models
- 6 kV surge withstand
- Field-adjustable forward gain 0-15 dB
- Field-adjustable reverse gain 0-10 dB
- Power LED indicator
- Surge & current protected power supply
- Compact, environmentally-hardened design
- Local & remote powering
- Diplex filters 42/54 & 85/102 MHz
- 360° F-pin seizure

## SPECIFICATIONS

| Parameter                                         | Specification                 |           |           |
|---------------------------------------------------|-------------------------------|-----------|-----------|
|                                                   |                               | Typical   | Worst     |
| <b>Forward Path (54-1220 MHz or 102-1220 MHz)</b> |                               |           |           |
| Average Full Gain (amp-powered)                   | 54/102-1000 MHz               | 15 dB     | 14 dB     |
|                                                   | 1000-1220 MHz                 | 14 dB     | 13 dB     |
| Flatness                                          | 54/102-1000 MHz               | ± 0.5 dB  | ± 0.75 dB |
|                                                   | 1000-1220 MHz                 | ± 0.75 dB | ± 1 dB    |
| Adjustable Gain Control Range                     | 54/102-1000 MHz               | 0-15 dB   |           |
| CTB <sup>(1)</sup>                                |                               | -75 dBc   | -70 dBc   |
| CSO <sup>(1)</sup>                                |                               | -65 dBc   | -62 dBc   |
| Noise Figure <sup>(2)</sup>                       | 54/102-1220 MHz               | 3 dB      | 4 dB      |
| Group Delay (span 3.58 MHz)                       | Any Channel                   |           | 20 ns     |
| <b>Return Path (5-42 MHz or 5-85 MHz)</b>         |                               |           |           |
| Average Full Gain (amp-powered)                   | 5-42/85 MHz                   | 10 dB     | 8.5 dB    |
| Flatness                                          | 5-42/85 MHz                   |           | ± 0.75 dB |
| Adjustable Gain Control Range                     | 5-42/85 MHz                   | 0-10 dB   |           |
| DSO <sup>(3)</sup>                                |                               | -70 dBc   | -65 dBc   |
| DTO <sup>(3)</sup>                                |                               | -60 dBc   | -57 dBc   |
| Noise Figure <sup>(2)</sup>                       | 5-42/85 MHz                   |           | 8 dB      |
| Group Delay (span 1 MHz)                          | 5-42/85 MHz                   |           | 20 ns     |
| <b>General (5-42/85 MHz, 54/102-1220 MHz)</b>     |                               |           |           |
| Impedance                                         |                               |           | 75 Ω      |
| Return Loss (all ports)                           | 5-42/85 MHz / 54/102-1220 MHz | 20 dB     | 16 dB     |
|                                                   | 1000-1220 MHz                 |           | 16 dB     |



## SPECIFICATIONS CONT'D.

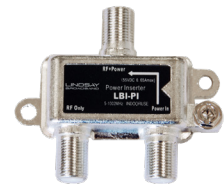
| Parameter                                             | Specification                                   |                                                                         |
|-------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------|
|                                                       | Typical                                         | Worst                                                                   |
| <b>General (5-42/85 MHz, 54/102-1220 MHz) Cont'd.</b> |                                                 |                                                                         |
| Hum Modulation                                        | 5-42/85 MHz / 54/102-1220 MHz                   | -70 dBc                                                                 |
| Unterminated Oscillation <sup>(4)</sup>               | None                                            |                                                                         |
| Port Diode Protection                                 | Yes                                             |                                                                         |
| <b>Power, Environmental &amp; Physical</b>            |                                                 |                                                                         |
| Surge Withstand                                       | Fwd Input & Power Pack                          | IEEE 587 C62.41-1991-Cat B3, Combination Wave, 6 kV, 3 kA, 8/20 $\mu$ s |
|                                                       | Fwd Outputs                                     | IEEE 587 C62.41-1991-Cat A3, Ring Wave, 6 kV, 200 A, 0.5-100 kHz        |
| DC Power Consumption                                  | 15 VDC                                          | 280 mA                                                                  |
| Power Supply Noise <sup>(5)</sup>                     | -50/-80/-100 dBm                                |                                                                         |
| Operating Temperature                                 | -40 °C to +60 °C (-40 °F to +140 °F)            |                                                                         |
| Dimensions (H x W x D)                                | 4.4"H x 5.0"W x 1.4"D (11.2H x 12.7W x 3.6D cm) |                                                                         |
| Weight                                                | 0.6 lb (0.3 kg)                                 |                                                                         |

## NOTES:

- (1) 10 dBmV/CH flat input level (75 NTSC) + digital at 6 dB setback (550-1220 MHz); at full gain
- (2) Noise figure specified at full gain
- (3) As per SCTE115, 13 & 19 MHz channels at 60 dBmV/CH output, w/c of DSO at 6/32 MHz & DTO at 7/25 MHz; at full gain
- (4) No oscillations should occur with IN & OUT ports terminated & unterminated
- (5) Max. for (DC-500 kHz) / (500 kHz-1.5 MHz) / (1.5 MHz-1.2 GHz). Measure at RF OUT while using power inserter to power the amplifier

## ORDERING INFORMATION

| Part #                                | Description                                                                                                                                                      |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LRSA 1510 ADJ-42/54                   | Adjustable two-way subscriber drop amplifier, 0-15 dB gain forward, 0-10 dB gain reverse, 0-42 MHz upstream, 54-1220 MHz downstream                              |
| LRSA 1510 ADJ-85/102                  | Adjustable two-way subscriber drop amplifier, 0-15 dB gain forward, 0-10 dB gain reverse, adjustable 0-85 MHz upstream, 102-1220 MHz downstream                  |
| LRSA 1510 ADJ-85/102 - no transformer | Adjustable two-way subscriber drop amplifier, 0-15 dB gain forward, 0-10 dB gain reverse, adjustable 0-85 MHz upstream, 102-1220 MHz downstream (no transformer) |
| <b>Optional Accessory</b>             |                                                                                                                                                                  |
| 15-100                                | LBI-PI subscriber drop power inserter, 5-1220 MHz                                                                                                                |

LBI-PI power inserter  
(front view)