

## ILAH Series

IF (70/ 140MHz), L-Band & SHF Line Amplifiers, Rack Mounted with user interface.



### High Grade Line Amplifier Products;

|                    |                                            |
|--------------------|--------------------------------------------|
| <b>ILAH70</b>      | IF 70±20MHz & 140±40MHz frequencies        |
| <b>ILAHU240</b>    | UHF 240-323MHz frequencies                 |
| <b>ILAHL1450</b>   | L-Band 950-1450MHz frequencies             |
| <b>ILAHL1750</b>   | L-Band 950-1750MHz frequencies             |
| <b>ILAHL2150</b>   | L-Band 950-2150MHz frequencies             |
| <b>ILAHL2450</b>   | Extended L-Band 950-2450MHz frequencies    |
| <b>ILAS2400</b>    | S-Band 2.0-2.4GHz frequencies              |
| <b>ILAHC4200</b>   | C-Band 3.4-4.2GHz receive frequencies      |
| <b>ILAHC6725</b>   | C-Band 5.85-6.725GHz transmit frequencies  |
| <b>ILAHKu1275</b>  | Ku-Band 10.7-12.75GHz receive frequencies  |
| <b>ILAHKu1450</b>  | Ku-Band 13.75-14.5GHz transmit frequencies |
| <b>ILAHKu1450B</b> | Ku-Band 12.75-14.5GHz transmit frequencies |
| <b>ILAHKu1480</b>  | Ku-Band 13.75-14.8GHz transmit frequencies |
| <b>ILAH1840</b>    | DBS-Band 17.3-18.4GHz transmit frequencies |

For other 'non-standard' frequency requirements, please contact the factory.  
 For multiple-channel units in a single chassis (Dual, Triple, Quad), please consult the factory.  
 For equivalent lower cost units without the full user interface please see ILA series datasheet.  
 For equivalent remote mount units, please see PLA series datasheet.

The 19-inch, 1U rack mounted, **ILAH series** of IF to SHF line amplifier units from Peak Communications are designed to provide high quality signal amplification, primarily for satellite earth station cross-site applications.

The **ILAH series** units are mains powered and are constructed of high-grade components to give the ultimate gain flatness and stability performance.

For redundancy the **ILAH series** units use a simple CANBUS® interface and have an integral redundancy controller for 1+1 & 2+1 operation (for use with external **A1000L**, **A2000L** switch units), for N+1 system a separate external control and switch unit is provided (**RCU1002 series**).

The unit incorporates a graphics display module, membrane keyboard and features a clear and intuitive control and configuration menu, fully utilising the unique graphics display.

### Peak Features

-  High gain flatness and stability performance.
-  Optional input signal power detector with user settable input & 'compression alarm' threshold level
-  Electronically variable attenuator options for both local & remote control of gain
-  Active & passive slope compensation options
-  Integral 1+1 & 2+1 CANBUS® redundancy control, N+1 switch system available
-  Monitor, mute and fibre optic L-Band interface options available
-  Amplifier low current alarm monitoring



## ILAH series - Typical Specification

### Input

|              |               |
|--------------|---------------|
| ILAH70;      | 50-200MHz     |
| ILAHU240;    | 240-323MHz    |
| ILAHL1450;   | 950-1450MHz   |
| ILAHL1750;   | 950-1750MHz   |
| ILAHL2150;   | 950-2150MHz   |
| ILAHL2450;   | 950-2450MHz   |
| ILAHS2400;   | 2.0-2.4GHz    |
| ILAHC4200;   | 3.4-4.2GHz    |
| ILAHC6725;   | 5.85-6.725GHz |
| ILAHKu1275;  | 10.7-12.75GHz |
| ILAHKu1450;  | 13.75-14.5GHz |
| ILAHKu1450B; | 12.75-14.5GHz |
| ILAHKu1480;  | 13.75-14.8GHz |
| ILAH1840;    | 17.3-18.4GHz  |

|            |                                 |
|------------|---------------------------------|
| Connector  | SMA (f), 50Ω                    |
| Option 1a; | N-Type (f), 50Ω                 |
| Option 1c; | BNC (f), 50Ω (<2150MHz only)    |
| Option 1e; | BNC (f), 75Ω (<2150MHz only)    |
| Option 1g; | F-Type (f), 75Ω (<2150MHz only) |

Notes: Some connector options may lower the overall performance. F-Type connector performance cannot be guaranteed.

|             |      |
|-------------|------|
| Return loss | 16dB |
|-------------|------|

### Output

|            |                                 |
|------------|---------------------------------|
| Connector  | SMA (f), 50Ω                    |
| Option 1b; | N-Type (f), 50Ω                 |
| Option 1d; | BNC (f), 50Ω (<2150MHz only)    |
| Option 1f; | BNC (f), 75Ω (<2150MHz only)    |
| Option 1h; | F-Type (f), 75Ω (<2150MHz only) |

Notes: Some connector options may lower the overall performance. F-Type connector performance cannot be guaranteed.

|             |                                  |
|-------------|----------------------------------|
| Return loss | 18 to 22dB (frequency dependent) |
|-------------|----------------------------------|

### RF Performance

|            |          |
|------------|----------|
| Gain       | 20dB min |
| Option 4a; | 30dB nom |
| Option 4b; | 40dB nom |
| Option 4c; | 50dB nom |

Note: For other gain requirements please contact the factory.

|               |                                                                                           |
|---------------|-------------------------------------------------------------------------------------------|
| Gain flatness | ±0.25dB (bandwidths <500MHz)<br>±0.5dB (bandwidths <800MHz)<br>±1dB (bandwidths <1200MHz) |
|---------------|-------------------------------------------------------------------------------------------|

|                    |                                 |
|--------------------|---------------------------------|
| Active directivity | 22dB typ., 20dB min             |
| RF input power     | -10dBm max (no load, no damage) |
| TOIP               | +25dBm (+20dBm >2150MHz)        |
| 1dB output GCP     | +13dBm (+8dBm >2150MHz)         |

Note: For higher 1dBGCP options please contact the factory.

|              |                                             |
|--------------|---------------------------------------------|
| Noise figure | 7 to 9dB (frequency dependent)              |
| S-Band       | <1.7dB (degrades input return loss to 12dB) |

Note: For improved S-Band RL configurations (with higher NF), please contact factory.

### Monitor (Input Option 2a/c, Output Option 2b/d)

|           |                             |
|-----------|-----------------------------|
| Connector | SMA (f), 50Ω, on rear panel |
| Level     | -20dBc ±3dB                 |

### Electronically Variable Attenuation (Option 10)

|                   |                                          |
|-------------------|------------------------------------------|
| Attenuation range | 30dB                                     |
| Step size         | 0.1dB or 0.5dB (frequency dependent)     |
| Control           | Via local (front panel) & remote control |

### RF Mute (Option 13)

|           |          |
|-----------|----------|
| Isolation | 60dB min |
|-----------|----------|

### 10MHz Reference Pass-through (Option 5)

Allows 10MHz reference fed into the unit (multiplexed onto L-Band) to 'pass-through'. For alternative configurations please contact the factory.

### DC Feed for BUC/LNB powering (Option 5b)

DC feed multiplexed onto L-Band interface to power an external BUC/ LNB, with current monitoring & alarms. Please contact factory with V&I requirements.

### Power Detector & Alarms (Option 14, 14b)

|                      |                                                                                      |
|----------------------|--------------------------------------------------------------------------------------|
| Detection range      | 0 to -50dBm                                                                          |
| Display              | graphical via front panel & remote control                                           |
| Input (Option 14);   | Displays actual input & calculated output power                                      |
| Output (Option 14b); | Displays actual output & calculated input power                                      |
| Power Alarm          | User settable                                                                        |
| Compression Alarm    | Automatic 'pre-set' warning alarm for input/ output compression point, user settable |

Note: For single carrier power monitoring only, for use with multiple carriers only the highest is displayed & cannot be used for compression point warning.

### L-Band Linear Slope compensation (Option 15, 15b)

Compensates for internal circuitry & external primarily across-site cables.

Note: Unit options chosen will determine 'surplus' available for external compensation (for details contact factory).

|             |                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| Frequency   | 950-2150MHz                                                                                                                   |
| Option 15;  | Passive, fixed 5dB nom., positive slope                                                                                       |
| Option 15b; | Active, user settable 0 to 8dB nom., positive slope (reduces to 0 to 6dB nom., over 950-1750MHz & 0 to 5dB, over 950-1450MHz) |

Note: Option 15b includes variable attenuation facility 25dB range, 0.1dB step.

### Integral Input Combiner /Output Splitter (Option 16a /b)

|             |              |
|-------------|--------------|
| Option 16a; | 2-way        |
| Option 16b; | 4-way        |
| Connections | SMA (f), 50Ω |

Note: Typical 7dB insertion loss can be expected (dependent upon 'ways').

### Mechanical

|              |                                |
|--------------|--------------------------------|
| Width        | 19" standard rack mountable    |
| Height       | 1U (1.75")                     |
| Depth        | 400mm (15.7"), plus connectors |
| Construction | Aluminium chassis              |
| Weight       | 5.5kgs (12lbs)                 |

### Environmental

|                |                               |
|----------------|-------------------------------|
| Operating temp | 0°C to +50°C                  |
| EMC            | EN 55022, part B & EN 50082-1 |
| Safety         | EN 60950                      |

### Power Supply

|             |                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------|
| Voltage     | 90-264VAC                                                                                           |
| Frequency   | 47-63Hz                                                                                             |
| Total power | 50 Watts max                                                                                        |
| Option 7;   | Redundant PSU; provides a 1+1 redundant power supply configuration with separate prime power inputs |

### Control System Interface

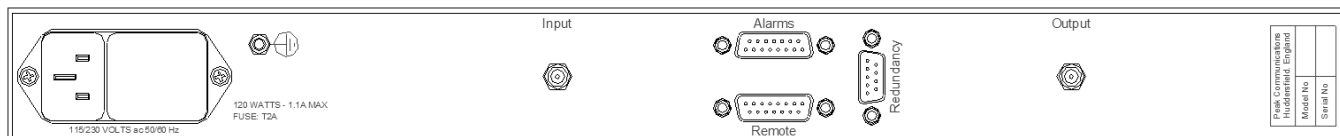
|                   |                                                                 |
|-------------------|-----------------------------------------------------------------|
| Remote control    | RS232/RS485 port                                                |
| Option 9;         | Ethernet; embedded web server & SNMP network management support |
| Redundancy        | CANBUS® interface for N+1 system                                |
|                   | In-built 1+1 & 2+1 controller                                   |
| Discrete 'alarms' | Summary alarm                                                   |

## Options

- 1a) N-Type (f), 50Ω input interface connection
- 1b) N-Type (f), 50Ω output interface connection
- 1c) BNC (f), 50Ω input interface connection
- 1d) BNC (f), 50Ω output interface connection
- 1e) BNC (f), 75Ω input interface connection
- 1f) BNC (f), 75Ω output interface connection
- 1g) F-Type (f), 75Ω input interface connection
- 1h) F-Type (f), 75Ω output interface connection
- 2a) -20dBc input L-Band monitor on rear panel
- 2b) -20dBc output L-Band monitor on rear panel
- 2c) -20dBc input SHF monitor on rear panel
- 2d) -20dBc output SHF monitor on rear panel
- 4a) Increased gain to 30dB nom.
- 4b) Increased gain to 40dB nom.
- 4c) Increased gain to 50dB nom.
- 5) 10MHz reference pass-through on L-Band interface
- 5b) DC feed for BUC/LNB powering on L-Band interface
- 6a) Fibre optic L-band output interface connection
- 6b) Fibre optic L-band input interface connection
- 7) Redundant power supplies
- 9) Ethernet interface with embedded web server & SNMP
- 10a) Electronic attenuator, 0-30dB (0.5dB steps), at L-Band
- 10b) Electronic attenuator, 0-30dB (0.1dB steps), at L-Band
- 10c) Electronic attenuator, 0-30dB (0.1dB steps), at Ku-Band
- 10d) Electronic attenuator, 0-30dB (0.1dB steps), at C-Band
- 13) RF mute option
- 14) Input signal power detector and alarms
- 14b) Output signal power detector and alarms
- 15) 5dB passive, fixed, slope compensation (L-Band only)
- 15b) Active, user settable, slope compensation (L-Band only), including variable gain facility
- 16a) Passive input combiner or output splitter, 2-way
- 16b) Passive input combiner or output splitter, 4-way

Note: The addition of options can modify the typical specification, for details please consult the factory.

## Rear panel view (sample)



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