The LIA001X12-10 is a phase matched high
dynamic range ‘Line’ or ‘Cable’ amplifier array
designed for use in HF phased antenna. The unit
contains 12 independent HF channels which cover
2 – 30MHz with built in filter for < 1.5MHz
broadcast band. Each channel has low noise and
high intercept performance providing exceptional
dynamic range. Lightning protection is built in.
High quality components are used throughout all
assembled into a 19 inch 2U corrosion proofed
chassis.

Application

In large HF antenna receiving phased arrays and in particular the Circular Disposed Antenna Array, there
can be substantial loss prior to the main beam former. This loss manifests itself as poor system S/n
especially in the higher HF frequencies where cable losses are higher and atmospheric noise is less
dominant.

Stancom has developed a 12 channel LNA Array which
provides modest gain of 10dB+ and noise figures
approaching 2dB. Used in the main hub of a CDAA array it
improves system performance significantly.

Each Low noise phase matched amplifier contains a high
reject ‘LF Broadcast filter’ and low noise high intercept RF
amplifier. The amplifiers are built as modules to facilitate
maintenance. It allows removal without disturbing all other
modules present.

Built in test (BITE) is featured and each module is
independently monitored down to individual active elements
and can display its alarm condition on the module itself and group on the front with a global STATUS
indicator.
**Specification: (For each channel)**

<table>
<thead>
<tr>
<th><strong>Electrical:</strong></th>
<th><strong>Limits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>2 – 30MHz</td>
</tr>
<tr>
<td>Gain Max</td>
<td>&lt;+12dB</td>
</tr>
<tr>
<td>Gain Min</td>
<td>&gt;+10dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>+/- 1dB</td>
</tr>
<tr>
<td>Phase Match between LIA001 modules</td>
<td>+/- 1.0° (Max)</td>
</tr>
<tr>
<td>Gain Match between LIA001 modules</td>
<td>+/- 0.5dB (Max)</td>
</tr>
<tr>
<td>Noise Figure (with Filter)</td>
<td>Typ 2.3dB, Max 3dB</td>
</tr>
<tr>
<td>TOIP (Output Intercept)</td>
<td>&gt;+33dBm</td>
</tr>
<tr>
<td>Second order (Output Intercept)</td>
<td>&gt;+70dBm</td>
</tr>
<tr>
<td>Reverse Isolation</td>
<td>&gt;13dB</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>50Ω</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>50Ω</td>
</tr>
<tr>
<td>Input return loss</td>
<td>&gt;14dB. (VSWR &lt; 1.5:1)</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>&gt;14dB. (VSWR &lt; 1.5:1)</td>
</tr>
<tr>
<td>Connectors Input and Output</td>
<td>BNC type Female</td>
</tr>
<tr>
<td>Lightning Protection (Input)</td>
<td>2kV 1.2uS rise time, 50uS duration. (IEC61000-4-5 Level 3)</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>Internal monitoring and LED Alarm</td>
</tr>
<tr>
<td>Filter Rejection</td>
<td>&lt; -50dBc, DC-1.5MHz, (With reference to pass-band).</td>
</tr>
<tr>
<td>Power</td>
<td>Mains 110/220V +/- 10% ac. Selectable. Power 35W</td>
</tr>
<tr>
<td>AC Mains Power Connector</td>
<td>3 Pin IEC male connector.</td>
</tr>
<tr>
<td>AC Mains Switch</td>
<td>Illuminating Mains Switch is front panel located</td>
</tr>
<tr>
<td>AC Mains Fuse</td>
<td>0.5A, Rear panel mounted</td>
</tr>
<tr>
<td>DC Fuse</td>
<td>2A, Front panel mounted</td>
</tr>
<tr>
<td>110/220V AC +/-10%, 47-63Hz</td>
<td>Manual Rear Panel selector</td>
</tr>
</tbody>
</table>

**Alarms**

Unit has BITE to monitor all amplifiers, in addition a group front panel 'STATUS' RED/GREEN LED is included.

**Mechanical**

Connectors:  
- I/P: 12 x BNC – Female  
- O/P: 12 x BNC – Female  

Dimensions:  
- 19”, 2U rack mount x 400 deep including connectors

**Environmental:**

Temperature:  
- 0 to +50°C  

Weatherproofing:  
- Indoor use only.