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### Plate Assembly Features
- 10/100 Base T Ethernet network interface
- Supports SNMP v1, v2c, and v3
- Manual or automatic operation
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- Audible alarm
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- LK-205000 Series Ka-band Low Noise Amplifiers (LNAs) - High quality dual waveguide/coaxial switches
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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Notes</th>
<th>Min</th>
<th>Nom./Typ.†</th>
<th>Max.</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td></td>
<td>18.2 GHz</td>
<td>20.2 GHz</td>
<td>20.2 GHz</td>
<td>21.2 GHz</td>
</tr>
<tr>
<td>Noise Temperature, System</td>
<td></td>
<td>At +23 °C</td>
<td>See Table 1</td>
<td>See Table 2</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td></td>
<td>Standard LNA</td>
<td>LNA with Option 1</td>
<td>54</td>
<td>60 dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td></td>
<td>Full band</td>
<td>Per 40 MHz</td>
<td>±0.1 dB</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>Gain Stability (Constant Temp.)</td>
<td></td>
<td>Short term (10 min)</td>
<td>Medium term (24 hrs)</td>
<td>±0.1 dB</td>
<td>±0.3 dB</td>
</tr>
<tr>
<td>Gain Stability</td>
<td></td>
<td>Vs. temperature (standard) Contact factory for improved stability</td>
<td>LNA with Option 3</td>
<td>-0.06 dB</td>
<td>-0.06 dB per °C</td>
</tr>
<tr>
<td>VSWR</td>
<td></td>
<td>Input, standard Input, with System Option B, Tx filter Output</td>
<td>1.25 dB</td>
<td>1.30 dB</td>
<td>1.20 dB</td>
</tr>
<tr>
<td>Power Output at 1 dB Compression (P₁dB)</td>
<td></td>
<td>Standard LNA LNA with Option 2 LNA with Option 2 &amp; System Option D, output couplers</td>
<td>+10 dB</td>
<td>+18 dB</td>
<td>+20 dB</td>
</tr>
<tr>
<td>Third Order Output Intercept Point (OIP₃)</td>
<td></td>
<td>Standard LNA LNA with Option 2 LNA with Option 2 &amp; System Option D, output couplers</td>
<td>+18 dB</td>
<td>+26 dB</td>
<td>+28 dB</td>
</tr>
<tr>
<td>AM/PM Conversion</td>
<td></td>
<td>At -5 dBm out</td>
<td>0.05 dB</td>
<td>ns/MHz</td>
<td>0.02 ns/MHz²</td>
</tr>
<tr>
<td>Group Delay per 40 MHz</td>
<td></td>
<td>Linear</td>
<td>Parabolic</td>
<td>Ripple</td>
<td>0.02 dB</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td></td>
<td>Without damage</td>
<td>0 dBm</td>
<td>0 dBm</td>
<td></td>
</tr>
<tr>
<td>Desensitization Threshold for</td>
<td></td>
<td>Standard system With System Option B, Tx filter</td>
<td>-20 dB</td>
<td>+30 dB</td>
<td></td>
</tr>
<tr>
<td>Connectors</td>
<td></td>
<td>RF Input RF Output Offline In/Out, Coupler In/Out</td>
<td>WN24F Waveguide Flange SMA Female A SMA Female A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td></td>
<td>Switch Plate Assy</td>
<td>-40 °C</td>
<td>+60 °C</td>
<td></td>
</tr>
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</table>

* System specifications depend on choice of LNA and various options. Specifications shown are for a typical system using LK-205000 series LNAs (Specification 26926).

† When there is only one value on a line, the Nom./Typ. column is a nominal value; otherwise it is a typical value. Typical values are intended to illustrate typical performance, but are not guaranteed.

Type N Female connectors available on request (custom option).
The RSC series redundant system controllers for 1:1 and 1:2 systems directly power the LNAs and monitor the output voltages and currents to detect faults. The RSC can also monitor external alarm signals or a combination of output currents and external alarm inputs. Upon detecting a fault, the RSC drives an RF transfer switch to activate the spare unit. The RSC offers monitoring and control of auxiliary RF hardware; remote monitor and control via network, serial interface, or parallel I/O; flexible configuration of system behavior; remote disable of local controls for security; and the ability to detect and report certain failures within the controller itself.

A second RSC can be linked to a primary RSC to provide full system control from an alternate control site. When set up this way, the secondary RSC is referred to as a remote control panel, or RCP. The configuration and settings of the primary RSC are transferred to the RCP, which then mimics its controls and interfaces. This permits system operation from a location that is up to 4000 ft (1200 m) distant from the primary controller.

Controller Specifications

- **Unit Status Monitor Methods**
  - Controller monitors unit bias current; alarm is generated if current goes outside of allowed tolerance window (LNA or LNB systems). Controller also monitors unit bias current; alarm is generated if current goes outside of allowed tolerance window (LNA or LNB systems).
  - External alarm inputs (SSPA and other systems) or combinations of both internal unit currents (LNA or LNB systems). Controller also monitors unit bias current; alarm is generated if current goes outside of allowed tolerance window (LNA or LNB systems).
- **Unit Current Window/Width**
  - 45% to 95% of nominal, user selectable in 5% steps (applies to all monitored unit currents).
- **Switchover Time**
  - 100 ms maximum.
- **Unit Power Outputs**
  - +18.3 to +15.0 Vdc, 700 mA maximum.
- **Switch Drive Outputs**
  - +2 to +28 Vdc, 2 A maximum.
- **External Alarm Inputs**
  - Optionally up to one per unit; require sinking 5 mA at 5 Vdc to negate alarm.
- **Serial I/O Interface**
  - RS-232/RS-422/RS-485 2- or 4-wire, user selectable.

Controller Front Panel Controls and Indicators

- **Unit Status Alarms**
  - LED indicators glow green when OK, red when a fault is detected.
- **PS Indicator**
  - Allows red to show fault with either redundant power supply.
- **Panel Test**
  - Pushbutton lights all indicators & tests audible alarm.
- **RF Switch Pushbuttons and Indicators**
  - Pushbuttons are used to manually switch units. Front panel indicators show which units are on-line. Unit indicators light red to show faulted units.
  - In a typical 1:1 system, Unit 1 is the primary unit and Unit 2 is on standby. In a 1:2 system, Unit 1 is the primary unit for Pol 1 and Unit 2 is the primary unit for Pol 2. Unit 3 is in standby and can be selected for either Pol 1 or Pol 2. In a dual 1:1 system, Unit 1 is the primary unit and Unit 2 is on standby for Pol 1, Unit 3 is the primary unit and Unit 4 is on standby for Pol 2.
- **Auto/Manual Switch and Indicators**
  - In auto mode, an external alarm initiates automatic switchover to the standby unit. In manual mode, the on-line unit can be selected from the front panel or by serial I/O, parallel I/O or network command.
- **Remote/Local Switch and Indicators**
  - Selects local (front panel) control, or remote control from serial I/O, parallel I/O, or network.
  - An optional second RSC, configured as a Remote Control Panel, provides the means to operate the system from a physically distant, alternate location.

Controller Rear Panel Interfaces

- **J1, J2 – LINE 1, LINE 2 (BNC 220-C14)**
  - Dual power entry modules contain the AC line input connectors. System can be powered from separate AC lines if desired. Either or both power supplies are capable of operating the system.
- **J3 – PLATE ASSY (37-Pos D Female)**
  - Cable to plate assembly carries unit power, front panel I/O, LNAs or LNUs and switch drive signals. Order cable separately. Standard lengths are 100’ (30 m) to 250’ (75 m) in 25’ (7.5 m) increments; other lengths are special order. An adapter cable mates the controller to legacy system cables.
- **J5 – SERIAL I/O AND J7 – SERIAL LOOP (9-Pos D Female)**
  - RS-232/RS-422/RS-485 connector for unit RMC/SCM System. Commands provide monitoring, controlling, and configuration. Interconnect cable lengths to 4000 ft (1200 m) with RS-422 or RS-485. A serial loop connector provides a convenient connection for daisy-chained systems.
- **J6 – SERIAL I/O AND J7 – SERIAL LOOP (9-Pos D Male)**
  - For connection via a proprietary RS-422 link (up to 4000 ft (1200 m) to an optional, second RSC, which duplicates Local control functions at a secondary site.
- **J8 – PARALLEL I/O (37-Pos D Male)**
  - PARALLEL I/O interfaces between the primary and optional, second RSC, which duplicates Local control functions at a secondary location.
- **J9 – NETWORK (RJ-45)**
  - 10/100Base-T Ethernet connection port via standard RJ-45 connector. Supports SNMP v1, v2c and v3.

Redundant System Controller

12 Redundant System Controller, Model RSC120-AC

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Ka-Band Redundant LNA Systems

1.1 Plate Assembly Outline Drawing, with Various Options Installed

1.2 Plate Assembly Outline Drawing, with Various Options Installed

NOTES:
1. INTERCONNECTING CABLE NOT SHOWN
2. OUTPUT ISOLATORS INCLUDED WITH STANDARD SYSTEM
3. Optional Transmit Reject Filter input Crossguide coupler.
4. Optional Transmit Reject Filter input Crossguide coupler.
5. Optional Transmit Reject Filter input Crossguide coupler.
6. Optional Transmit Reject Filter input Crossguide coupler.
7. Dimensions are in inches and [mm].