RSSLNA1:1-C

1:1 C-Band LNA Redundancy System

General Description :

The Orbital LNA redundant switch system was designed to minimize system outage using a waveguide, coaxial switche to provide a spare LNA in the event of a failure. Various configurations of systems are available utilizing field proven, high performance C, X & Ku band LNAs in the 1:1 & 1:2 configurations.

The outdoor unit :

Features a slim, streamline outdoor unit mounted on a 19" rail for easy installation. Mounted LNAs allow easy swap out using industry standard LNAs.
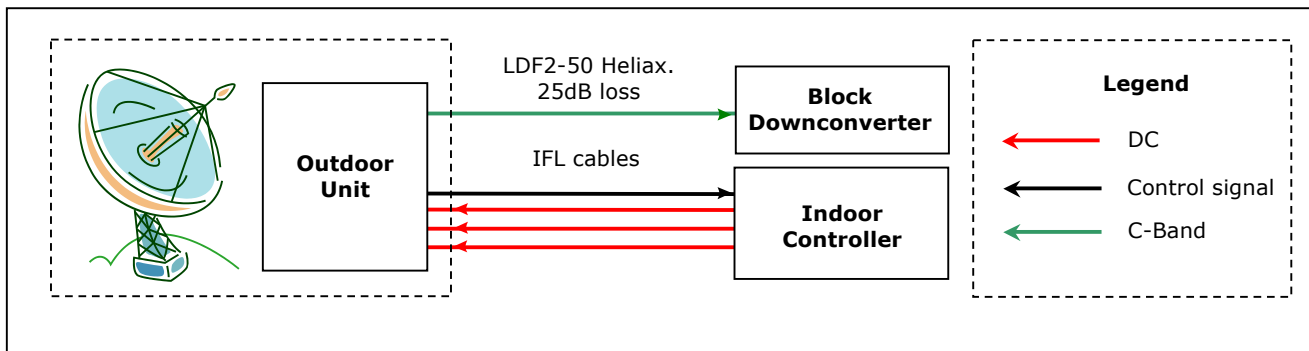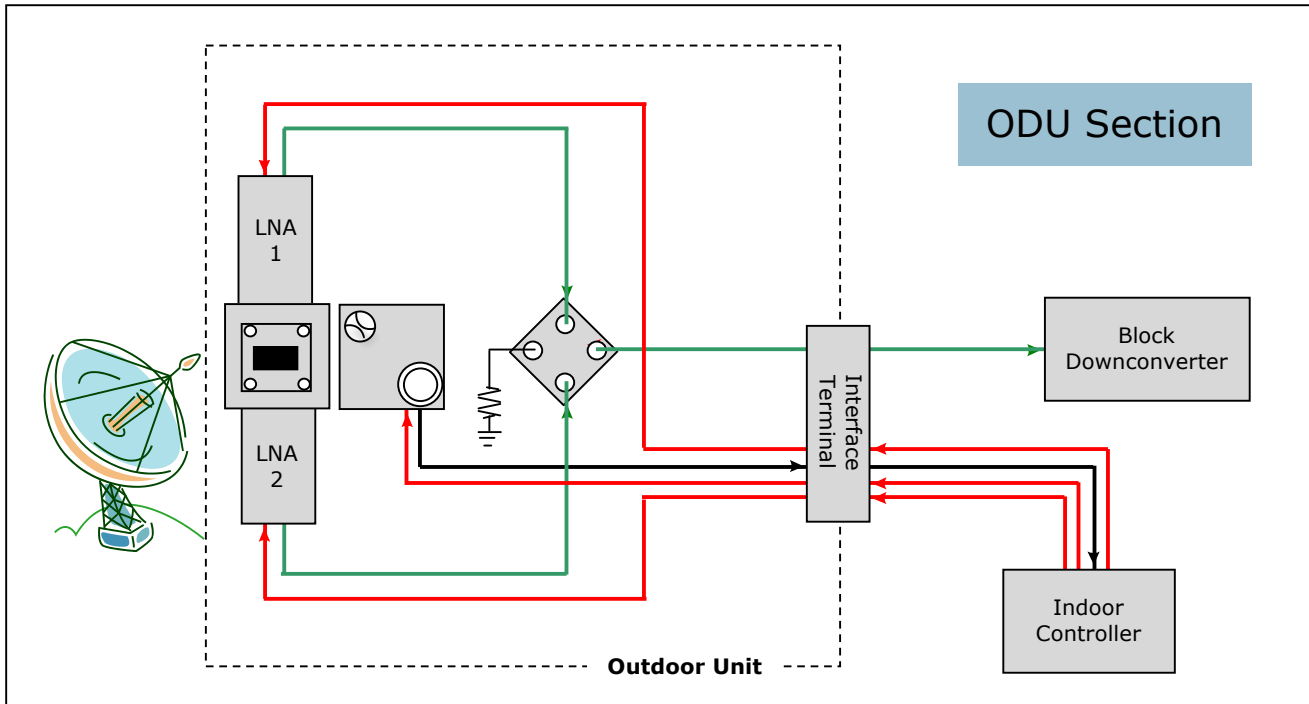
The indoor unit :

Is a 1RU-19" with a simple LED display to quickly observe the LNA status, and control buttons to make any required changes to the system quickly and efficiently. LNA redundancy is automatic (current sensing) or can be manually selected. Power supply redundancy is built in & automatic. Remote M&C is through serial port RS232 standard & optionally through Ethernet. There is also a Parallel control interface for status output & to take external control inputs.

Options :

The outdoor unit can be made available with following options
- Transmit Reject Filter
- Offline Input & Output
- Input Waveguide/Coaxial Test couplers
- Output coaxial Test couplers
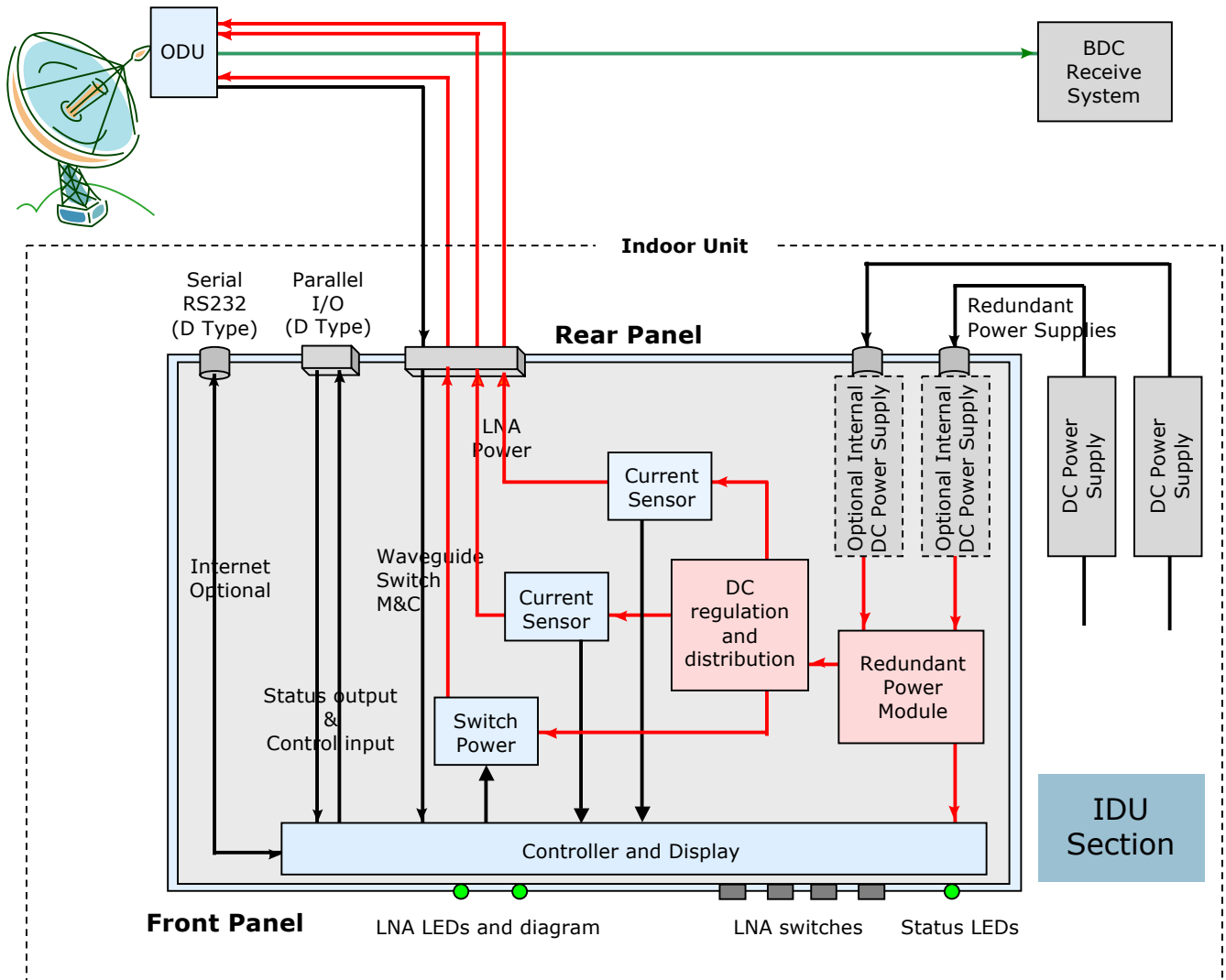- Custom configurations
- M&C via Ethernet

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ODU Section

LNA 1

LNA 2

Interface Terminal

Block Downconverter

Indoor Controller

Outdoor Unit

Outdoor Unit

LDF2-50 Heliax.
25dB loss

IFL cables

Block Downconverter

Indoor Controller

Legend

DC

Control signal

C-Band

Orbital ODU Features:

- Uses standard LNAs from any manufacturer. LNAs can be included and tested in the system
- The Outdoor Unit is mounted on one rail.
- Both IDU and ODU are pre-assembled (if LNA is included). Just connect the cables and waveguide. Mount the ODU, and plug the redundant power supplies in.

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ODU

BDC Receive System

Indoor Unit

Serial RS232 (D Type)

Parallel I/O (D Type)

Rear Panel

Redundant Power Supplies

LNA Power

Internet Optional

Waveguide Switch M&C

Current Sensor

Optional Internal DC Power Supply

Optional Internal DC Power Supply

DC Power Supply

DC Power Supply

Current Sensor

DC regulation and distribution

Status output & Control input

Switch Power

Redundant Power Module

IDU Section

Controller and Display

Front Panel

LNA LEDs and diagram

LNA switches

Status LEDs

Orbital IDU Features:

- 1 unit high chassis. Simple LED display for monitoring. No cumbersome LCD menu to work through
- Two Power Supplies are outside of chassis for easy service and replacement. Optionally, the power supplies can be placed inside the chassis.
- Unit automatically detects Power Supply faults. Global power supplies to use anywhere in the world.
- Manual or automatic switching between LNAs
- Ku and Ka-Band versions also available
- 1:2 versions available
- LNB versions also available

Cloud Based Remote User Interface Features:

- Direct mimic of physical front panel.
- Shows status in real time with near instantaneous status updates and control functionality.
- Additional statistics and diagnostics available.
- Works with standard web browsers – no need for complicated proprietary MAC systems
- Can easily be integrated into existing network monitoring infrastructure
- Top level map can show summary status of multiple systems in a network
- System automatically connects to the Cloud Server through an Ethernet connection and the Internet

1:1 C-Band LNA Redundancy System - Specifications

ELECTRICAL & INTERFACE

Outdoor unit

LNA Input:	CPR 229
LNA Output:	N, SMA (50Ω)
LNA Frequency Range:	3.4 to 4.2 GHz (Option 1)
	3.4 to 4.8 GHz (Option 2)
Gain:	60 dB
Noise Temperature:	≤ 35 K typical
1 dB Compression pt:	+20 dBm min
VSWR:	1.5 " 1 max
Power:	12 to 24 VDC

IFL

Indoor controller

Redundant power supplies

Voltage:	87 - 265 VAC
Frequency:	47 – 63 Hz
Filtering:	Transient, over and reverse voltage protected

MONITOR AND CONTROL

Rackmount Unit Front Panel

Push Buttons	LEDs
LNA 1	Automatic / Manual
LNA 2	Summary Fault / Clear
Automatic/Manual	PS Fault / PS OK
Alarm Reset	ODU Fault / OK
	LNA Fault / Clear

MECHANICAL

	Outdoor Unit	Indoor Unit
Weight:	TBD	TBD
Overall Dimensions:	TBD	19" x 1.75" x 20" max
Input Connector:	WR-75	N/A
Output Connector:	N or SMA	N/A
M&C Connector:	Terminal Strip	Terminal Strip
Optional Internet:	N/A	Serial RS232 D Type

ENVIRONMENTAL

	Outdoor Unit	Indoor Unit
Operating Temp:	-40 to +60°C	0 to +55°C
Relative Humidity:	<100%	<95% non-condensing

General Description:

The Orbital LNA redundant switch features a slim, streamline outdoor unit mounted on a 19" rail for easy installation. Mounted LNAs allow easy swap out using industry standard LNAs.

The indoor unit is 1RU-19" with a simple LED display to quickly observe the LNA status, and control buttons to make any required changes to the system quickly and efficiently. LNA redundancy is automatic (current sensing) or manually selected. Power supply redundancy is automatic. Remote M&C through ethernet.

Orbital Design:

As always, Orbital products are simple, market focused designs of an open architecture type to allow for custom requirements. The redundant switch uses Orbital modules to allow for custom features required by the customer. The indoor controller's front panel is a universal design that allows for customer feature changes.

External Power supplies:

Power supplies, historically, have the lowest MTBF of the components in a system. The Orbital External power supply configuration was designed to provide inexpensive and rapid power supply replacement. A secondary benefit is the lower operating temperature of the external power supplies thus extending their lives.

The power supplies need to be 15VDC, with a minimum current rating of 3.0 Amps. If one fails, the system switches to the other power supply. This gives the customer time to replace the power supply without any down time or without having to take the entire rack mounted chassis in for repair.

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