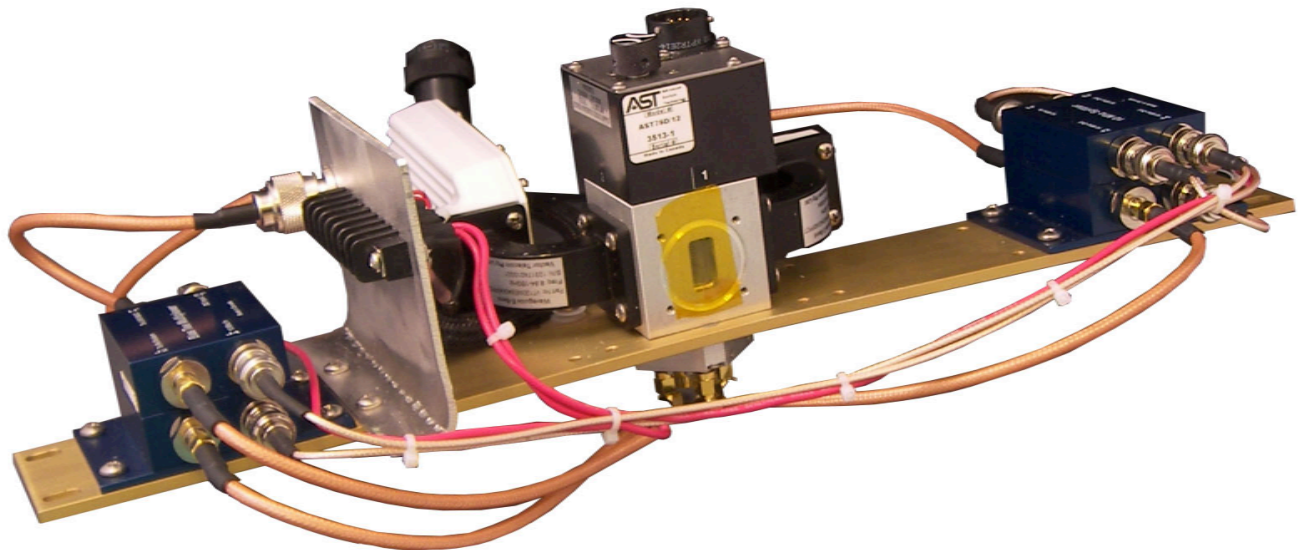
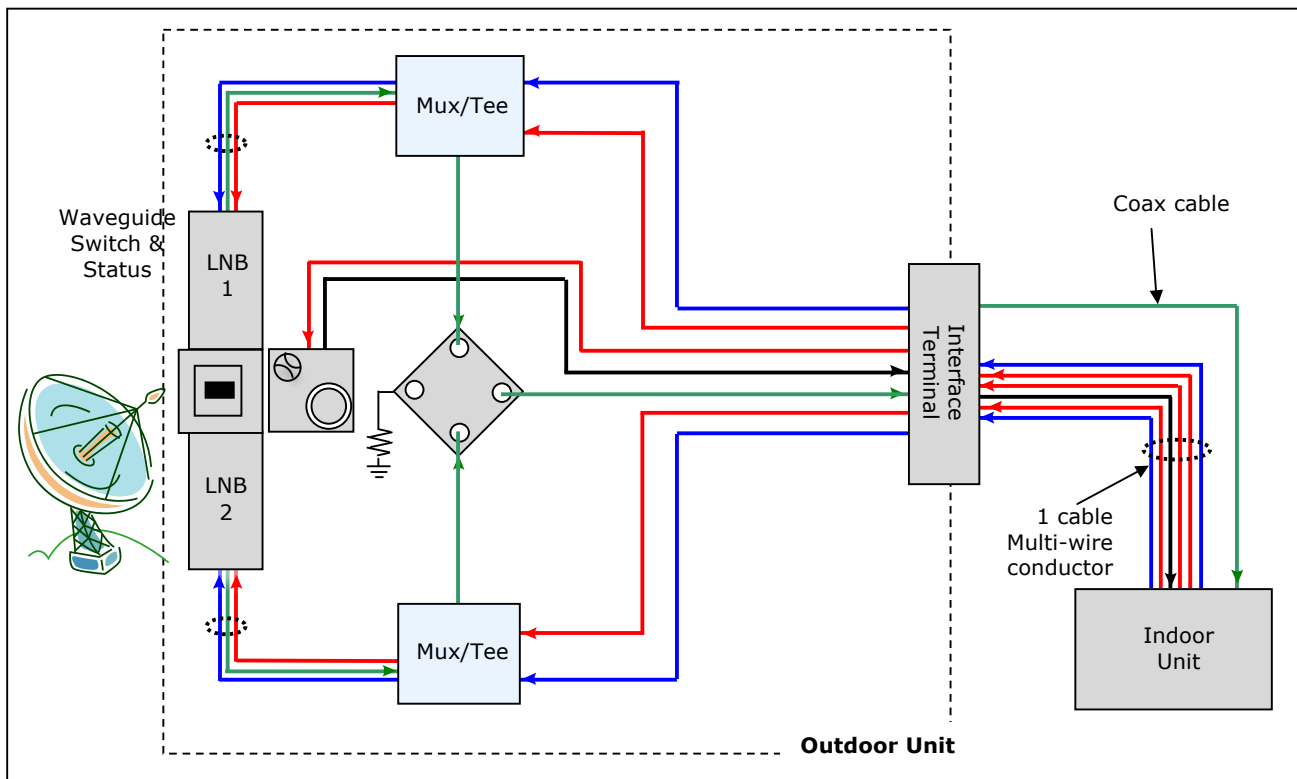


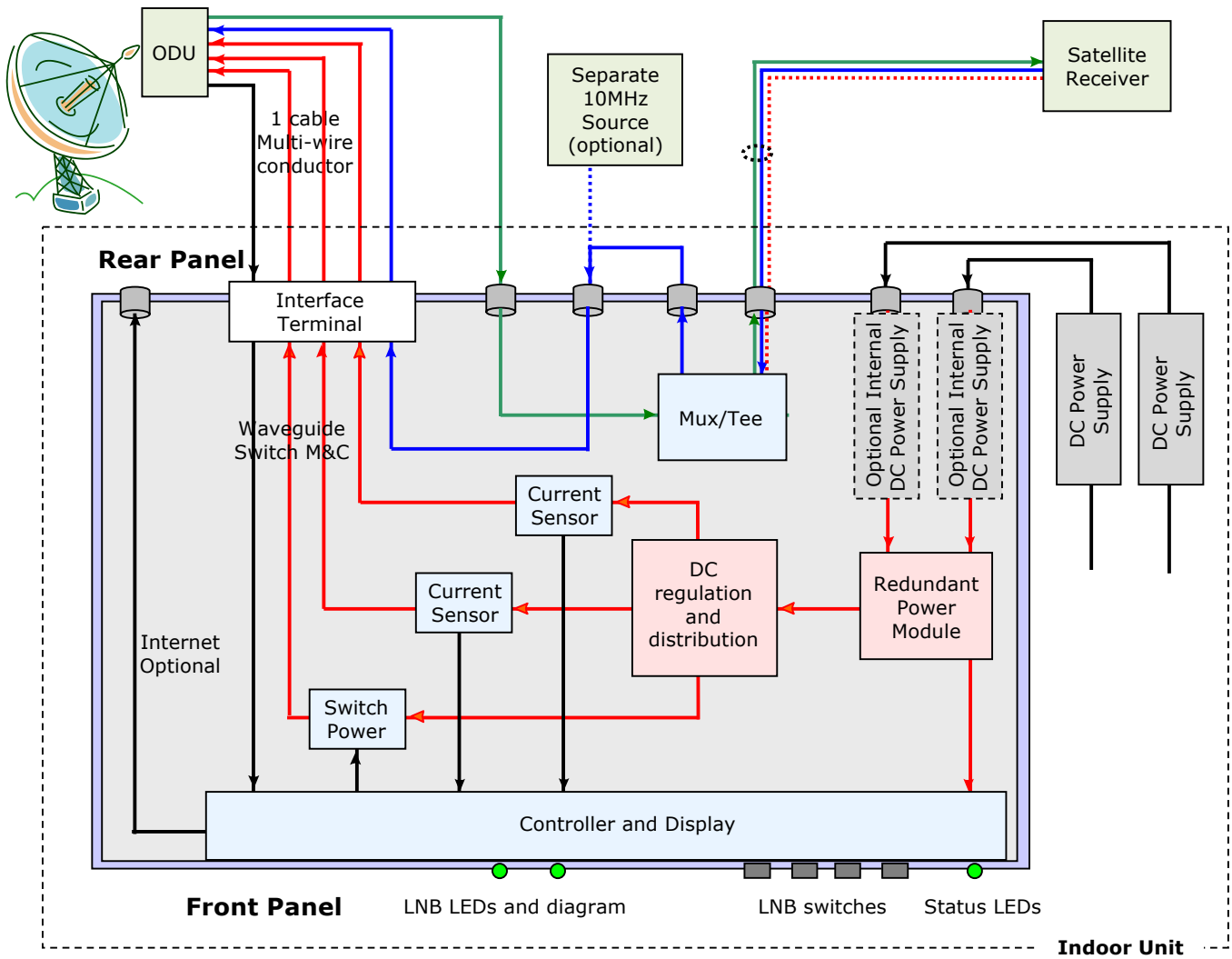
RSSL1:1-KuXER

Ku Ext Ref LNB Redundancy System with external 10 MHz Reference System

Outdoor Unit (ODU)



Indoor Unit (IDU)



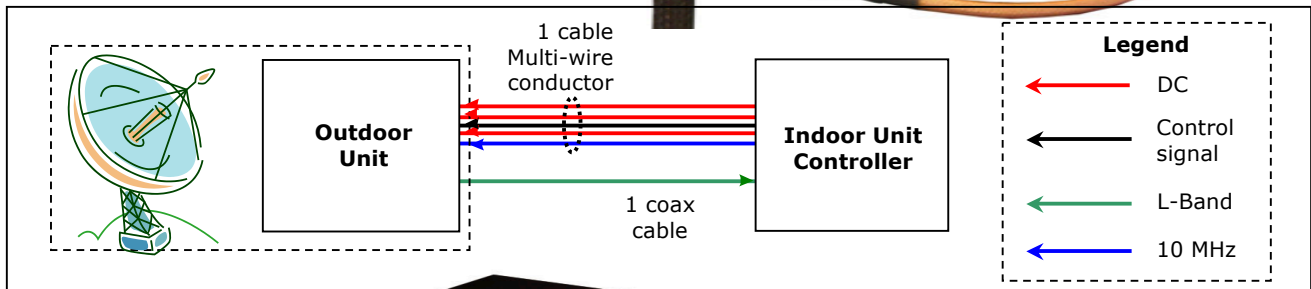
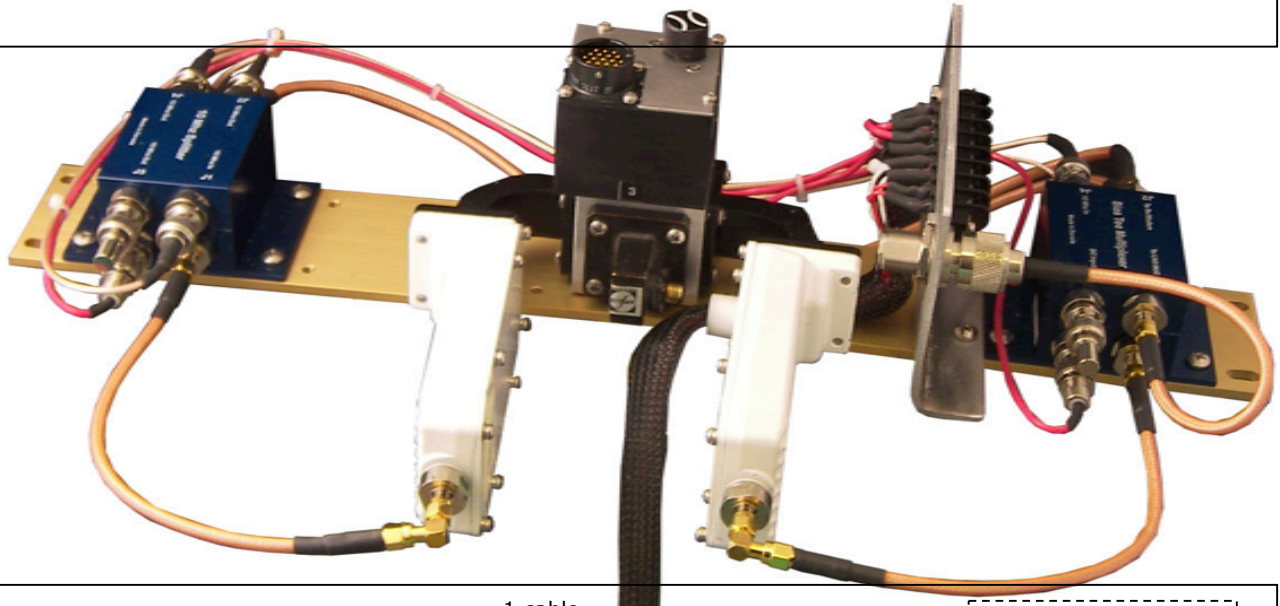
Technical Sales contacts:

Doug Macdonald
 1-647-992-1210
 doug.macdonald@orbitalresearch.net

David Zivic
 1-604-856-0305
 dzivic@orbitalresearch.net

Orbital ODU Features:

- Uses standard LNBS from any manufacturer. LNBS are included and tested in the system.
- The Outdoor Unit is compact on one rail, which is rack-mountable on a 19" rack, Or, on order, tell us your Antenna model and we will produce the mechanical to fit.
- No on-site assembly is required. ODU is pre-assembled. Just mount, connect the cables and plug the redundant power supplies in.
- IFL cable consists of one coax (with L-Band and 10 MHz signals) and one multi-wire cable that carries voltages and control line.



Orbital IDU Features:

- 1 unit high chassis. Simple LED display for monitoring. No cumbersome LCD menu to work through
- Redundant Power Supply that is outside of chassis for easy service and replacement. Or the power supplies can be placed inside. Global power supplies to use anywhere in the world
- Manual or automatic switching between LNBS.
- 10 MHz source can come from a separate source or, (as an option) with a back panel jumper, from the modem
- Any DC from modem is blocked by IDU.

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

The screenshot shows a web browser window at sat.silvertip.tel.ca/dashboard. The main content area is titled "Orbital 1" and features a schematic diagram of a satellite system with two circular components connected by lines. Below the diagram are three panels: "Buttons" with LNB1, LNB2, AutoMan, and Clear buttons; "Faults" with indicators for Auto, Fault, PS Fault, ODU Err, No Lock, Manual, Clear, PS OK, ODU OK, and LNB OK; and "Status" showing "Online" and "Last Received: 4/26/2013 5:19:44 PM". A "Change Device" dropdown menu is also present.

The screenshot shows the "Network" page of the web interface. It features a world map with two green location markers. A tooltip for "Device Name: Orbital 2" is displayed, containing the following data:

- Unit ID: 1
- Latitude: 51.5171
- Longitude: 0.1062
- Temperature: 19.2 °C
- u1_status: OK
- u2_status: OK
- sw1_pos: B
- sw2_pos: NC
- u1_cur: 0.17 A
- u2_cur: 0.16 A
- ps1_volls: 1.87 V
- ps2_volls: 13.68 V
- Last Reading: 2013-02-08 17:43:42

The map includes various geographical labels such as "Gulf of Alaska", "Hudson Bay", "Atlantic Ocean", and "Indian Ocean". The footer includes "Support © Silvertip Telematics 2012".

RSSL1:1-KuXER: Ku LNB Redundancy System - Specifications

ELECTRICAL

INPUT (Outdoor unit)

Interface: WR-75
 Frequency: 10.70 to 11.70 GHz, 11.70 to 12.75 GHz
 Other frequencies available upon request.
 Noise Figure: 0.8 dB typical
 VSWR: 2.5 : 1 typical

OUTPUT (Outdoor unit)

Interface: F or N
 VSWR: 2.3 : 1 typical
 Gain: 60 dB typical
 LO Stability: reference dependent
 LO Phase Noise: Reference dependent

POWER (Indoor controller)

Voltage: 90 - 264 VAC
 Frequency: 47 - 63 Hz
 External PS conn.: BNC
 Filtering: Transient, over and reverse voltage protected

General Description:

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

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

MONITOR AND CONTROL

Push Buttons	LEDs
LNB 1	Automatic / Manual
LNB 2	Summary Fault / Clear
Automatic/Manual	PS Fault / PS OK
Alarm reset	ODU Fault / OK
	LNB Fault / Clear

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 18VDC, with a minimum current rating of 1.2 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

As an option, one or both power supplies can be placed inside the chassis at no extra cost.

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:	F, 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

Orbital Research Ltd. designs and builds products for satellite communications applications. Orbital website: www.orbitalresearch.net. Copyright © 2016 Genie in the Bottle Enterprises Inc. All rights reserved. Specifications subject to change without notice.

