R10DA: 2 input, 4 output

System Interface Product

Redundant 10 MHz Switch & Distribution Amplifier

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R10DA Description

Orbital Research's R10DA is a 10 MHz Reference signal distribution splitter and variable gain amplifier, redundancy system. It will automatically (or manually) switch between inputs if the main Oscillator stops operating or the power level drops below a customer's threshold setting.

On-board RF detectors on both inputs allows the system to automatically detect the level of incoming signals and set the outputs to the appropriate level, even if the input signals are of different levels.

Orbital's R10DA is designed as a carrier grade module for systems that demand high availability and high performance whether it is for a head-end or remote VSAT.

Mechanical Specifications

Size (case):	87l x 130w x 45h mm
Weight:	32 oz
Paint / Color:	Blue Anodized finish
Mounting holes:	3/8" (5mm) Accepts standard rackmounting screws: 10/32 or 10/34

Environmental Specifications

Operating Temp:	-40 to +50° Celsius
Relative Humidity:	UP to 100% condensation and frost

R10DA Features

- Port to Port Output Isolation >20 dB
- Switched input Isolation >50 dB
- Insertion Loss <0.5 dB
- VSWR < 1.50:1 (all ports)
- Phase Balance <5 deg
- P1 dB (with 0dB attenuation):
  - Input > 6.0 dBm
  - Output > 11.0 dBm
- Gain Range: +10 to -10 dB (in 0.5 dB steps)
- Fixed gain (set to a desired gain) or,
- AGC – Automatic Gain Control (maintain desired output level regardless of input),
- Amplitude Imbalance: <0.2 dB
- Power: 5 to 40 VDC (<150 mA)
- With 485, 232 or USB interface, input and output levels can be read

Connections

- RF Connectors: SMA standard, BNC, TNC, N Optional
- M&C Connector: M8 IP67 rated multi-pin or Mini USB
- DC Connector: M8 IP67, BNC or Solder Lug
- USB Connector: IP67 rated mini USB B

Functional

- Can be used with LNBs, BDCs, BUCs, VSATs, etc.
- Optional local control and status indicators
- Optional remote monitoring:
  - J3: Form C, RS485
  - J9: USB

Structural

- Machined from a solid aluminum billet for strength and stability
- Anodized finish for corrosion protection and excellent RF shielding/grounding
- IP67 rated connectors ("O" ring sealed) & hardware

Sales Contact
1-604-419-8585
sales@orbitalresearch.net

Part Number Generator

Module – R10DA
Redundant 10 MHz
Distribution Amplifier

J3
M&C
Connector

J5 to J8
Output
Connectors

R10DA – S S M B - S S S S – U

J1, J2
Input
Connectors

J4
DC
Connector

J9
M&C
Connector

Connectors available:

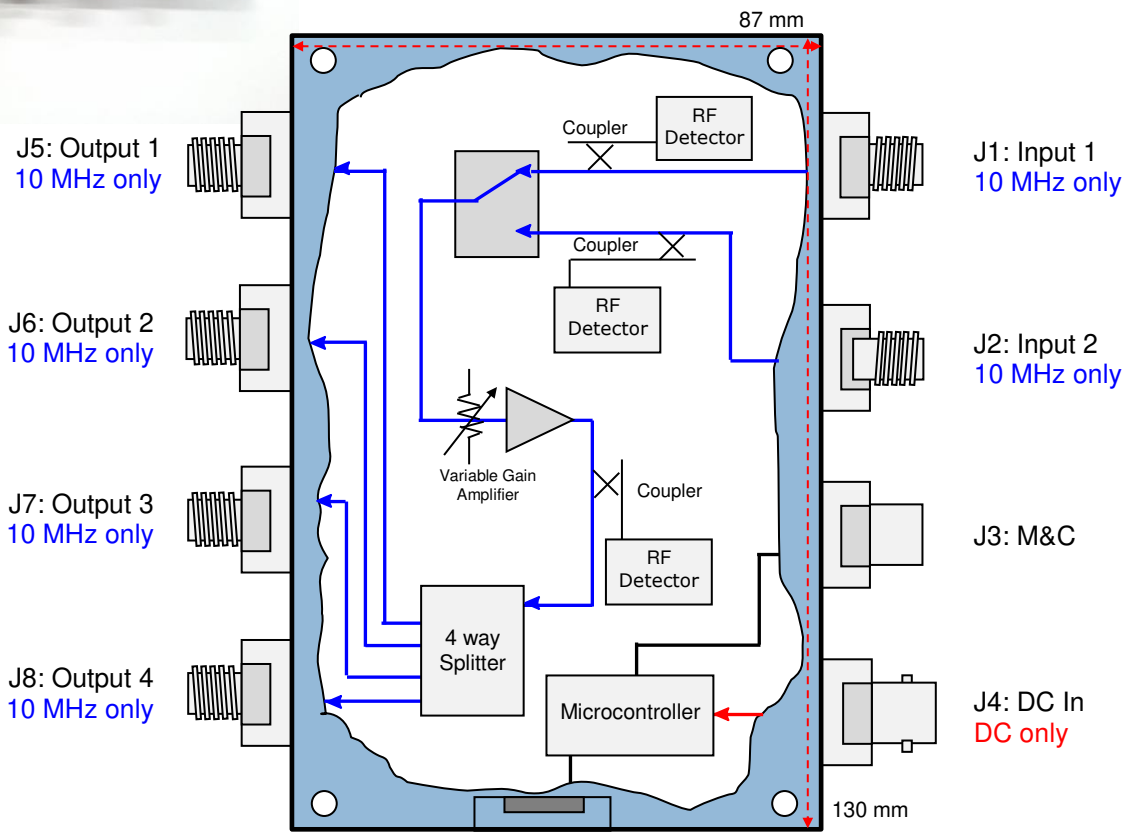
J1, J2, J5-J8: 10 MHz
S - SMA, 50Ω
B - BNC, 50Ω
N - N, 50Ω

J3: M&C / Alarm
M - M8
Ft – feedthru
B – BNC, 50Ω

J4: DC Supply
B - BNC (preferred)
N - N
S - SMA
T - TNC
Ft – feedthrough

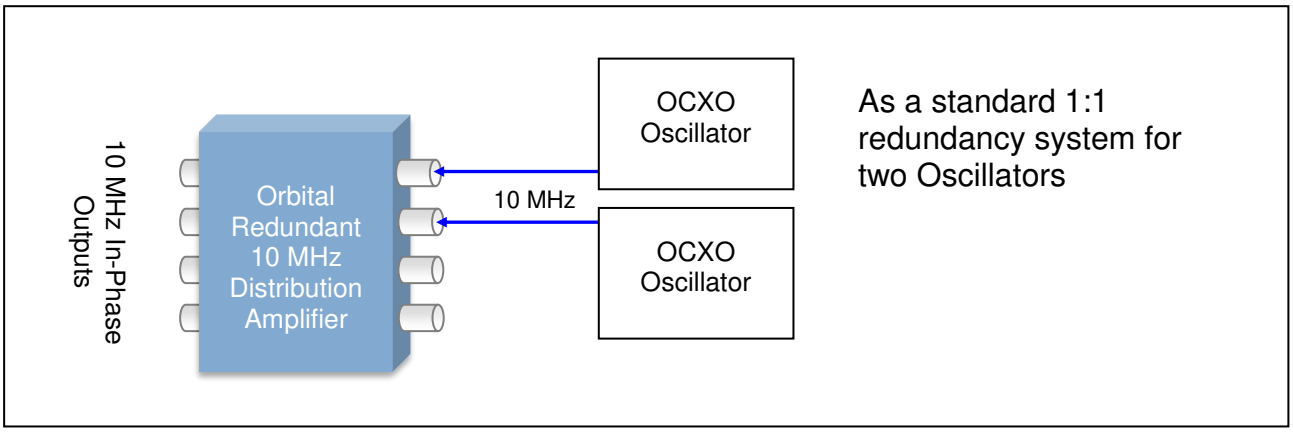
J9: M&C
U – USB
P - Plug

Mechanical & Block Diagram

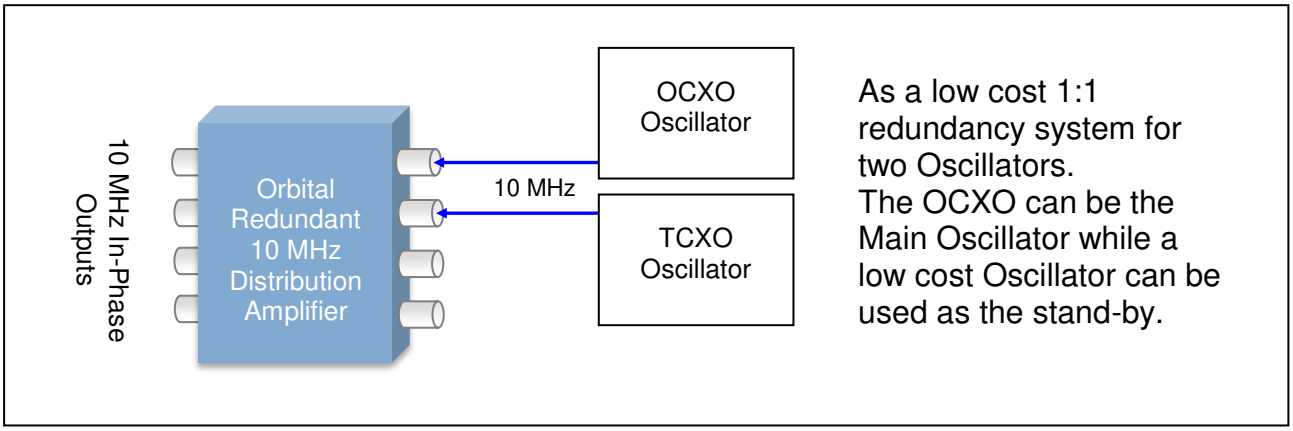


J9: M&C USB Connector

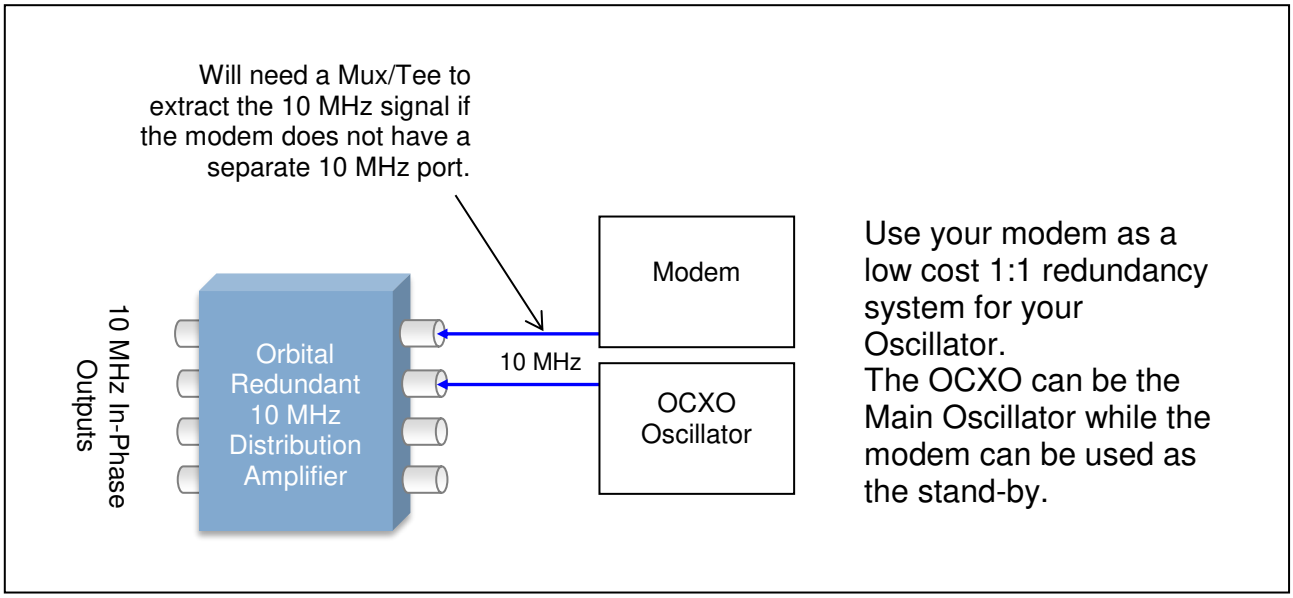
Application Examples



As a standard 1:1 redundancy system for two Oscillators



As a low cost 1:1 redundancy system for two Oscillators.
The OCXO can be the Main Oscillator while a low cost Oscillator can be used as the stand-by.



Use your modem as a low cost 1:1 redundancy system for your Oscillator.
The OCXO can be the Main Oscillator while the modem can be used as the stand-by.

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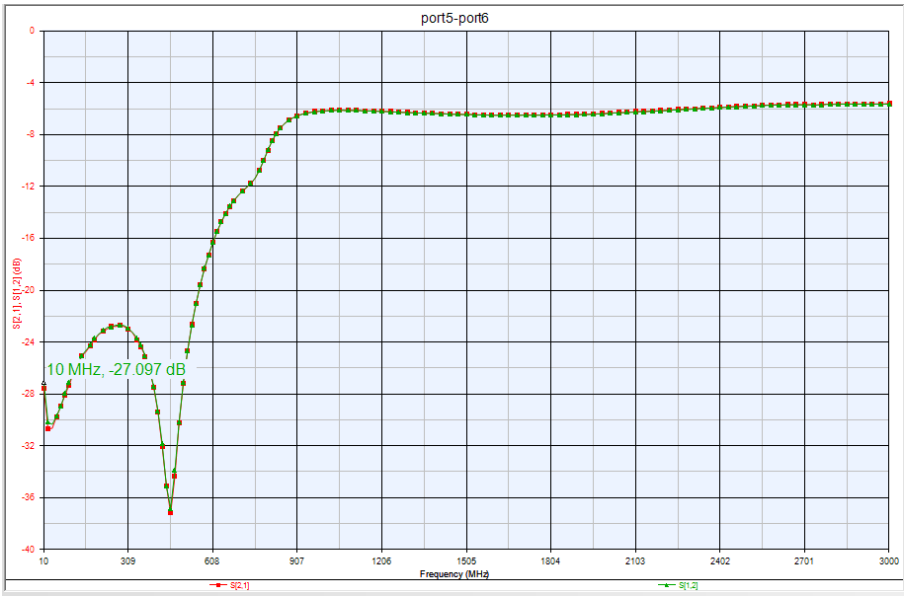
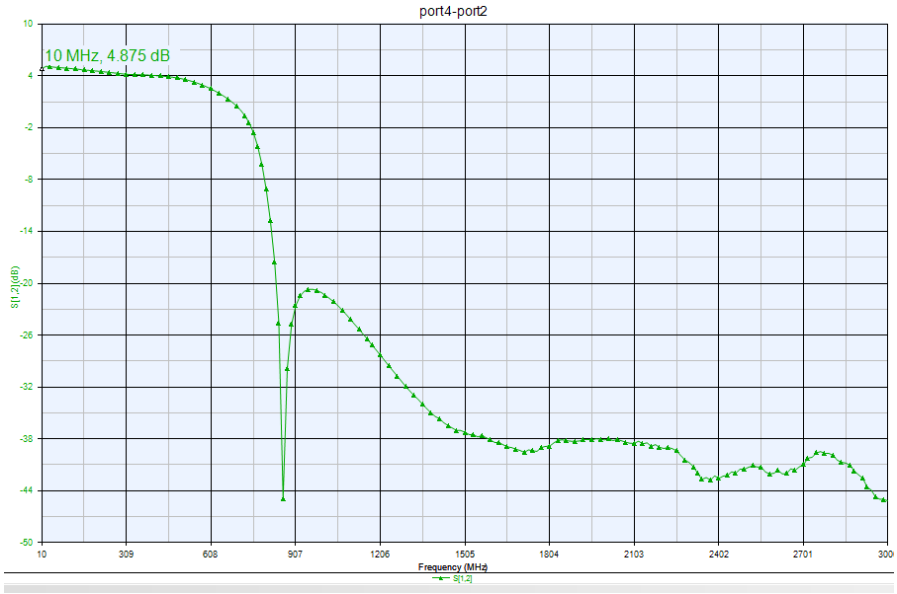
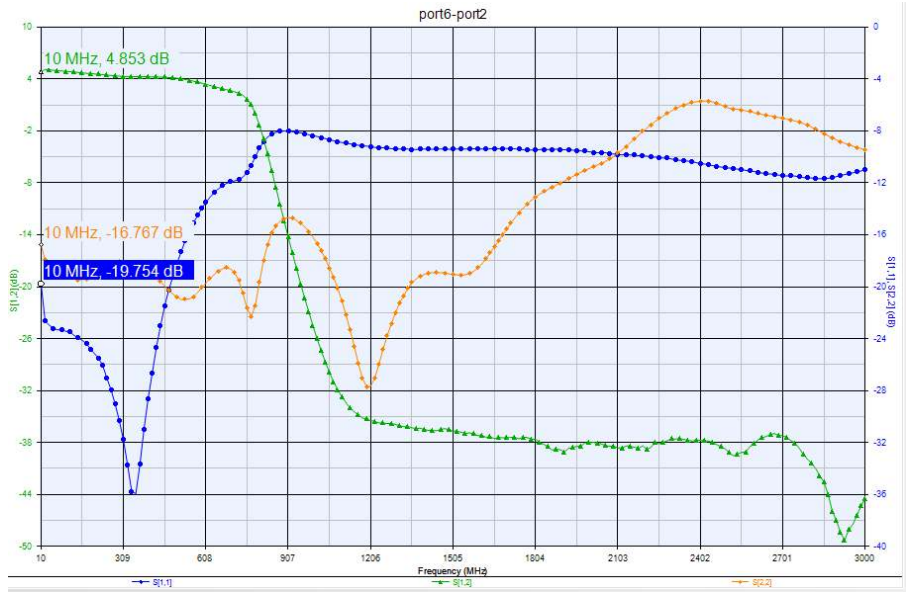


Port to Port Isolation



Insertion Gain
(0 dB Attenuation)



S2P (Return Loss –
Input & Output)

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