



Trusted RF Solutions™

NuPlexer™ GPS III TRIPLEXER



P/N: TANGO

NuWaves' GPS III Triplexer is a high-performance

NuWaves' **T**echnologically **A**dvanced **N**-plexer for **GPS III O**peration (**TANGO**) is a frequency triplexer designed for the Air Force Research Laboratory (AFRL) to address emerging digital waveform requirements on GPS III space vehicles that more than triples channel bandwidths from roughly 13 MHz to 45 MHz, as well as accommodate higher signal power levels of greater than 800 Watts without introducing potentially devastating multipaction effects and while limiting passive intermodulation (PIM).

Features

- High Selectivity, 6 pole Cross Coupled design for steep rejection skirts
- Extremely low insertion loss
- Unique geometries to increase power handling capability in space applications
- Up to 800W input power per channel without introducing multipaction effects
- Custom vented TNC wedge connectors designed specifically for high power space applications
- Carefully selected alloys and materials for enhanced thermal & mechanical performance
- Very low passive intermodulation distortion
- High harmonic rejection up to 6 GHz (-40 dBc)
- Full power testing in a Vacuum
- Supports wide bandwidths up to 45 MHz
- High input to input isolation

Applications

- Used for combining, isolating, and filtering L1, L2, and L5 channels after power amplification onboard GPS satellite payloads for military space programs

TANGO Triplexer

Specifications

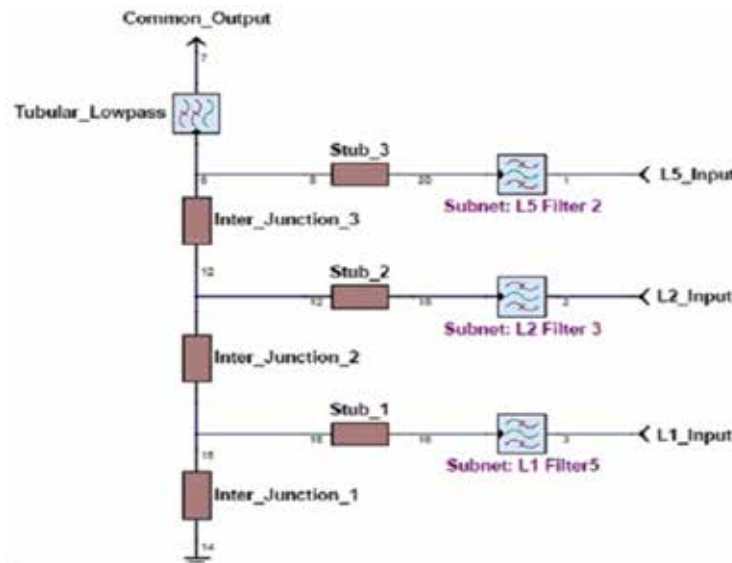
Mechanical

Parameter	Rating
Size (Including Mounting Plate)	19.2" x 14.8" x 7.9" (L x W x H)
Weight (Including Mounting Plate)	27 lbs.
Weight of Mounting Plate	7 lbs.
Altitude	Space Qualified (Vented)
Operating Temperature	-24 °C to +61 °C
Connectors	Custom TNC Wedge Connector (Gore)

Export Classification
ITAR

Operational Specifications

Parameter	Min	Typ	Max	Unit	Condition
Insertion Loss @ Center Frequency			0.5	dB	
Passband Flatness			0.5	dB	
VSRW		1.3:1			@ 50 ohms
L1 Band Center Frequency		1575.42		MHz	45 MHz Bandwidth
L2 Band Center Frequency		1227.60		MHz	45 MHz Bandwidth
L5 Band Center Frequency		1176.45		MHz	12 MHz Bandwidth



Power Handling Capability

Multipaction Test Conditions:

Peak Power: Approx. 800 Watts at each L-Band input; one signal input at a time.

Duty Cycle: 50% (2ms pulse @ 4ms rate.)

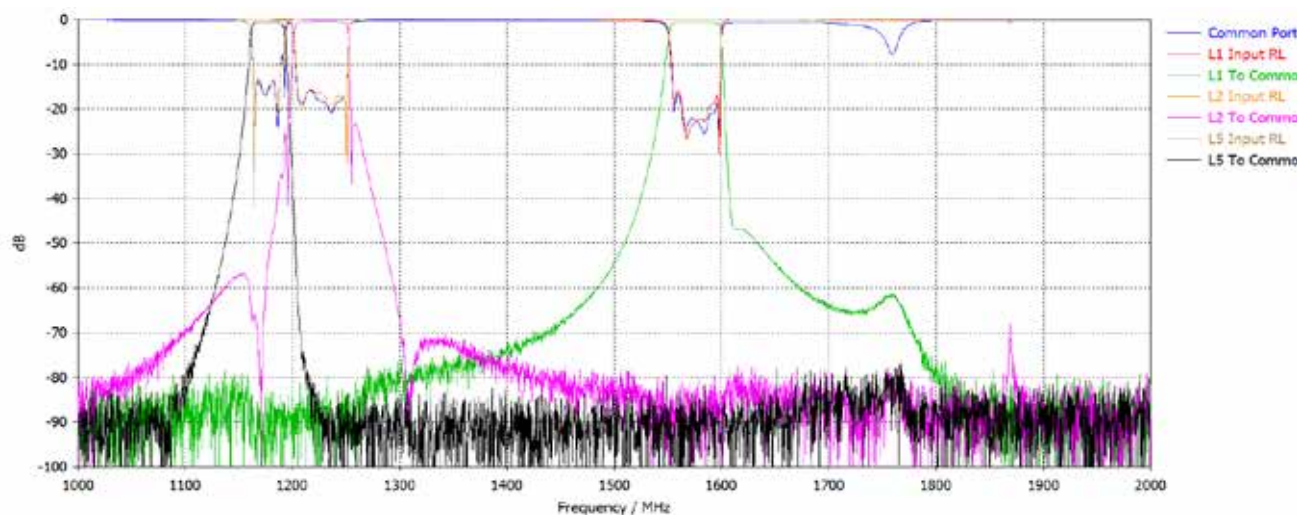
Temp. Range: -24°C to +61°C

Triplexer	-24°C	+25°C	+61°C	Multipaction
L1 Band Path	800 Watts	800 Watts	800 Watts	None
L2 Band Path	800 Watts	800 Watts	800 Watts	None
L5 Band Path	800 Watts	800 Watts	800 Watts	None

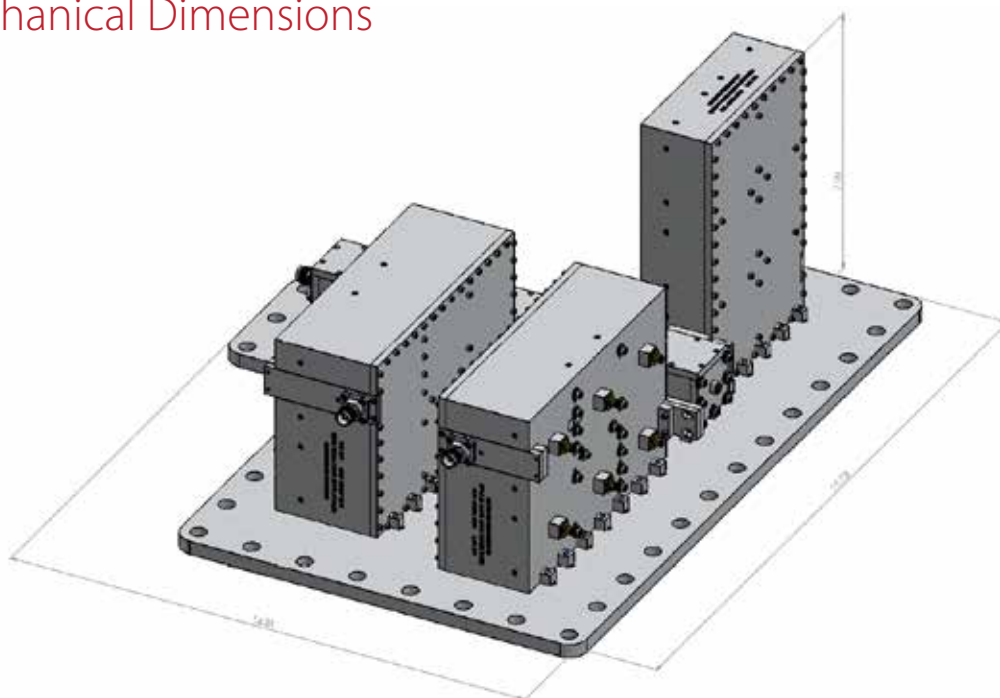
TANGO Triplexer

Performance Plots

TANGO Triplexer Response Plot (Measured) [Magnitude in dB]



Mechanical Dimensions



TANGO Triplexer w/ Mounting Plate; 14.81" x 19.18" x 7.90"

Contact NuWaves



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