



ACCELERATED PERFORMANCE

A vertical red bar on the left side of the page, containing five white circular icons. From top to bottom, the icons represent: a satellite, a radar dish, a group of people, a ship, and a fighter jet.

EXCELLENCE | AGILITY | INTEGRITY | RESPONSIVENESS

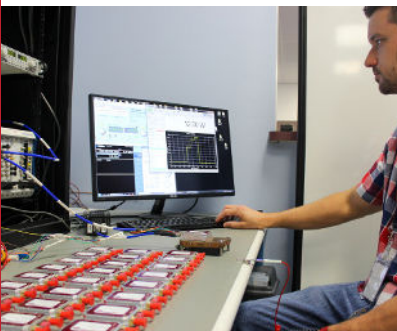
ABOUT NUWAVES

A veteran-owned small business (VOSB) founded in 2000, NuWaves RF Solutions is a premier supplier of Radio Frequency (RF) and Microwave solutions for military, government, industrial, and commercial customers. NuWaves provides quick-tempo design and engineering services that address the most demanding customer requirements, especially with regard to hardware size, weight and power (SWaP) reduction, cost and – oftentimes equally important – schedule. NuWaves also offers a broad catalog of high-performance commercial off-the-shelf (COTS) RF products, many of which have been derived from custom developments.



NuWaves RF Solutions endeavors to provide one-of-a-kind technical solutions for the U.S. Military, including high-technology Engineering Services and Products, and to achieve unsurpassed EXCELLENCE in client satisfaction.

NuWaves' Quality Management System is ISO 9001:2015 and AS9100:2016 Rev D Certified.



NUWAVES IS KNOWN THROUGHOUT THE INDUSTRY FOR **HIGH-PERFORMANCE MINIATURE DESIGNS, RISK REDUCTION, QUICK-TEMPO AND COST-EFFECTIVE SOLUTIONS**, MEETING THE MOST DEMANDING CUSTOMER



WHAT WE OFFER

RF Design Services

NuWaves RF Solutions offers quick-tempo RF system, subsystem and module-level design services **from HF to Ku-band frequencies**. As a turn-key solutions provider, NuWaves can take an idea from the concept stage through design and development, prototyping and even transition it to production in a seamless and cost-effective manner.

Utilizing state-of-the-art design and simulation tools and relying on decades of applied experience, our RF engineers are capable of designing *transmitters, receivers, transceivers, solid state power amplifiers, low noise amplifiers, RF front ends, upconverters, downconverters, preselectors, noise modules, synthesizers, modulators, IF chains, high-performance filters*, etc.

While best known for its RF and microwave engineering prowess, NuWaves RF Solutions is also adept at providing high-level communications and telemetry system-level design services. The company's complementary embedded systems design services include digital hardware, hardware description languages such as VHDL and Verilog, and embedded software/firmware such as C++ and C#. NuWaves also offers mechanical design and thermal analysis, using the very latest 3D CAD tools, allowing the team to ensure the mechanical design is optimized for fit while also taking heat transfer into consideration.

Engineering Services

NuWaves RF Solutions offers a wide breadth of Engineering Services related to the deployment, testing, evaluation and sustainment of advanced communications and telemetry systems.

System Sustainment – With in-depth organizational knowledge, extensive experience, and an exemplary track record of third-party system evaluation, characterization, obsolescence management, and re-engineering, NuWaves is well-positioned to provide critical system sustainment services to DoD and prime contractors.

Depot-Level Maintenance – NuWaves offers Depot-Level Maintenance for system sustainment programs, including material maintenance or repair that requires the overhaul, upgrading, or rebuilding of parts, assemblies, or sub-assemblies, and the testing and reclamation of equipment.

Environmental Testing – Our in-house environmental testing and screening capabilities include shock, vibration, temperature, humidity and EMI, helping ensure that our customers' stringent requirements are met with confidence.

RF Propagation Analysis – NuWaves offers site survey services and RF propagation analysis up to decimetric wavelengths (frequencies to 8 GHz) in support of robust system engineering design. NuWaves can determine your system specifications for link closure – inclusive of receiver performance and transmit power requirements.

CONTACT NUWAVES FOR ANY
RF DESIGN OR ENGINEERING
SERVICE YOU MAY REQUIRE



ACCELERATED PERFORMANCE



NuPower™ RF Power Amplifier Selection Guide

Power Amplifier Model	Frequency Range	RF Output Power	Drive Level	Gain	Supply Voltage	Current Consumption (@ 28 Vdc)	Size (L x W x H)	Weight	Operating Temperature (Baseplate)
NuPower 11B02A	200 - 2600 MHz	10 W	0 dBm	40 dB	+11 to +32 VDC	1.40 A	2.34" x 1.96" x 0.62"	2.0 oz.	-40 to +85 °C
NuPower 11B02A-TAC*	200 - 2600 MHz	10 W	0 dBm	40 dB	+11 to +32 VDC	1.40 A	4.50" x 3.50" x 1.50"	20.0 oz	-40 to +85 °C
NuPower 11B02A-TAC2*	200 - 2600 MHz	10 W	0 dBm	40 dB	+11 to +32 VDC	1.40 A	4.50" x 3.50" x 1.50"	20.0 oz	-40 to +85 °C
NuPower ULS-25-C01-S01	200 - 2600 MHz	25 W	0 dBm	44 dB	+11 to +32 VDC	2.0 A	2.34" x 1.96" x 0.62"	2.0 oz	-40 to +85 °C
NuPower U-20-C01-S01	225 - 1000 MHz	20 W	0 dBm	43 dB	+11 to +30 VDC	1.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 11C01A	225 - 2400 MHz	15 W	0 dBm	40 dB	+11 to +32 VDC	1.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 13G05A	800 - 2000 MHz	50 W	0 dBm	45 dB	+27 to +30 VDC	3.00 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +85 °C
NuPower 15D05A-C01-S01	800 - 2500 MHz	20 W	0 dBm	44 dB	+27 to +30 VDC	3.00 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +85 °C
NuPower LS75T01	800 - 2500 MHz	75 W	+3 dBm	46 dB	+11 to +32 VDC	6.80 A	5.0" x 10.0" x 0.61"	21.0 oz	-40 to +85 °C
NuPower L60T01	960 - 1390 MHz	60 W	0 dBm	48 dB	+27 to +30 VDC	3.60 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +60 °C
NuPower LS-20-C01-S01	1000 - 2500 MHz	22W	0 dBm	43 dB	+11 to +32 VDC	2.10 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A	1000 - 2500 MHz	18 W	0 dBm	42 dB	+11 to +32 VDC	1.90 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-D30	1000 - 2500 MHz	18 W	+30 dBm	10 dB	+11 to +32 VDC	1.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower LS5MI01	1000 - 2500 MHz	5 W	0 dBm	37 dB	+27 to +30 VDC	0.85 A	1.80" x 1.80" x 0.50"	1.3 oz.	-40 to +85 °C
NuPower LS5MI01-D30	1000 - 2500 MHz	5 W	+30 dBm	7 dB	+27 to +30 VDC	0.85 A	1.80" x 1.80" x 0.50"	1.3 oz.	-40 to +85 °C
NuPower 12B01A-01	1000 - 1500 MHz	25 W	0 dBm	44 dB	+11 to +32 VDC	2.40 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-02	1000 - 2000 MHz	26 W	0 dBm	44 dB	+11 to +32 VDC	2.25 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-03	1425 - 1525 MHz	26 W	0 dBm	44 dB	+11 to +32 VDC	2.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-04	1425 - 1850 MHz	26 W	0 dBm	44 dB	+11 to +32 VDC	2.30 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-05	1425 - 2425 MHz	23 W	0 dBm	44 dB	+11 to +32 VDC	1.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-06	1500 - 2000 MHz	26 W	0 dBm	44 dB	+11 to +32 VDC	1.50 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-07	1500 - 2500 MHz	16 W	0 dBm	42 dB	+11 to +32 VDC	1.90 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12D05A	1700 - 2400 MHz	35 W	0 dBm	45 dB	+27 to +30 VDC	3.60 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +85 °C
NuPower 12B01A-08	1755 - 1850 MHz	14 W	0 dBm	42 dB	+11 to +32 VDC	1.90 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 12B01A-09	2000 - 2500 MHz	16 W	0 dBm	42 dB	+11 to +32 VDC	1.90 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower 05E05A	2000 - 2600 MHz	30 W	0 dBm	44 dB	+27 to +30 VDC	2.70 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +85 °C
NuPower 12B01A-10	2200 - 2395 MHz	14 W	0 dBm	42 dB	+11 to +32 VDC	1.90 A	3.00" x 2.00" x 0.65"	3.0 oz.	-40 to +85 °C
NuPower S100A01	2000 - 2500 MHz	125 W	+30 dBm	21 dB	+26 to +32 VDC	11.50 A	6.50" x 4.50" x 1.00"	22.6 oz.	-40 to +70 °C
NuPower S-10-C01-S01	3000 - 4000 MHz	14W	-5 dBm	44 dB	+11 to +32 VDC	1.80 A	3.25" x 2.00" x 0.50"	3.0 oz	-40 to +60 °C
NuPower S-75-C01-S01	2200 - 2500 MHz	75W	+30 dBm	18 dB	+28VDC (range TBD)	TBD	4.0" x 3.5" x 1.0"	TBD	-40 to +85 °C
NuPower C10R01	5100 - 5900 MHz	18 W	0 dBm	42 dB	+27 to +32 VDC	1.60 A	3.57" x 2.57" x 0.5"	2.6 oz.	-40 to +60 °C
NuPower C20R01	4400 - 4900 MHz	32W	0 dBm	45 dB	+27 to +32 VDC	3.60 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +60 °C
NuPower C30R01	5030 - 5090 MHz	35 W	0 dBm	45 dB	+27 to +32 VDC	4.10 A	4.50" x 3.50" x 0.61"	9.0 oz.	-40 to +60 °C
NuPower ULSC-20-C01-S01	500 - 6000 MHz	20 W	+10 dBm	33 dB	+20 to +32 VDC	2.20 A	5.50" x 3.42" x 1.50"	28.0 oz.	-40 to +85 °C
NuPower KU-20-C01-S01	14000 - 15500 MHz	20 W	+0 dBm	43 dB	+24 to +32 VDC	TBD	6.00" x 4.10" x 0.88"	20.0 oz.	-40 to +85 °C
NuPower KU-80-C01-S01	13000 - 15500 MHz	80 W	+25 dBm	49 dB	+28 VDC	TBD	2.75" x 2.00" x 0.60"	2.75 TBR	-40 to +85 °C

 New products

*Ruggedized for IP67 with integrated heatsink for tactical vehicle mount or manpack applications

Need a customized solution? NuWaves customizes catalog items for specific system requirements. Contact sales@nuwaves.com for customized options.



NuPower Xtender™ Bidirectional Amplifiers/ Multi-Channel, Multi-Band Bidirectional Amplifiers

Bidirectional Amplifier Model	Frequency Range	RF Output Power	Drive Level	Tx Gain	Rx Gain (typ)	Supply Voltage	Current Consumption (@ 28 Vdc)	Size (L x W x H)	Weight	Operating Temperature (Baseplate)	Auto-Sense or Manual Switching
NuPower Xtender VU4GX02-C101	225 - 450 MHz	12W	- 10 dBm	51 dB	Pass Through (-1.15 dB)	+10 to +32 VDC	1.40 A	2.34" x 2.34" x 0.61"	2.0 oz.	-40 to +85 °C	Manual
NuPower Xtender VU4GX02-C102	225 - 450 MHz	12W	- 10 dBm	51 dB	Pass Through (-1.15 dB)	+10 to +32 VDC	1.40 A	2.34" x 2.80" x 0.70"	TBD	-40 to +110 °C	Manual
NuPower Xtender VU4GX01	225 - 512 MHz	16W	+5 dBm	37 dB	15 dB	+10 to +32 VDC	1.10 A	2.34" x 2.34" x 0.61"	1.92 oz.	-40 to +85 °C	Manual
NuPower Xtender VU4GX02	225 - 512 MHz	16W	+5 dBm	37 dB	15 dB	+10 to +32 VDC	1.10 A	2.34" x 2.34" x 0.61"	2.0 oz.	-40 to +85 °C	Manual
NuPower Xtender LS10S01	1000 - 2500 MHz	20W	+5 dBm	38 dB	14 dB	+11 to 32 VDC	2.30 A	3.00" x 2.00" x 0.65"	5.8 oz.	-40 to +60 °C	Both
NuPower Xtender LS10S01-D30	1000 - 2500 MHz	25 W	+30 dBm	13 dB	14 dB	+11 to +32 VDC	2.30 A	3.00" x 2.00" x 0.65"	5.8 oz.	-40 to +60 °C	Both
NuPower Xtender C15RX01	4400 - 4900 MHz	20W	0 dBm	43 dB	10 dB	+27 to +32 VDC	4.60 A	5.50" x 4.50" x 1.16"	10.5 oz.	-40 to +85 °C	Manual
NuPower Xtender C15RX01-C044	5030 - 5091 MHz	15 W	0 dBm	40 dB	7.5 dB	+27 to +32 VDC	4.60 A	5.50" x 4.25" x 0.68"	10.5 oz.	-40 to +85 °C	Manual
NuPower Xtender LS20S01-D19	1000 - 2500 MHz	25W	+19 dBm	25 dB	15 dB	+11 to +32 VDC	2.3 A	3.00" x 2.00" x 0.65"	4.0 oz.	-40 to +85 °C	Both
NuPower Xtender DUAL LS20S01-D19	1000 - 2500 MHz	25 W	+19 dBm	25 dB	15 dB	+11 to +32 VDC	2.3 A	3.00" x 2.00" x 0.65"	4.0 oz.	-40 to +85 °C	Both
NuPower Xtender C10RX01	4400 - 5100 MHz	10W	+30 dBm	10 dB	10 dB	+27 to +32 VDC	1.75 A	3.57" x 2.57" x 0.50"	2.6 oz.	-40 to +85 °C	Manual
NuPower Xtender C10RX03	4400 - 5100 MHz	10W	+30 dBm	10 dB	10 dB	+27 to +32 VDC	1.75 A	3.57" x 2.57" x 0.50"	2.6 oz.	-40 to +85 °C	Auto-Sense
NuPower Xtender C10RX03-C037	5150 - 5875 MHz	10W	+30 dBm	10 dB	10 dB	+27 to +32 VDC	3.00 A	3.57" x 2.57" x 0.50"	3.0 oz.	-40 to +85 °C	Both*
NuPower Xtender ULSC-20-C01-S01	500 - 6000 MHz	20W	+10 dBm	38 dB	15 dB	+20 to +32 VDC	2.20 A	6.00" x 4.25" x 1.50"	40.0 oz.	-40 to +85 °C	Not Applicable
NuPower Xtender DUAL-S-50-C01-S01	2200 - 2500 MHz	50W	+30 dBm	17 dB	12 dB	+28 VDC	TBD	7.0" x 4.0" x 1.25"	TBD	-40 to +85 °C	Both
NuPower Xtender S-50-C01-S01	2200-2500 Mhz	50W	+30 dBm	17 dB	12 dB	+28 VDC (range TBD)	TBD	4.0" x 3.5" x 1.0"	TBD	-40 to +85 °C	Both
NuPower Xtender SCISR-20-C01-S01	L-Band: 1000-2000 MHz	20 W	+30 dBm	13 dB	16 dB	+11 to +32 VDC	2.10 A	7.25" x 4.50" x 1.00"	34 oz. (TBR)	-40 to +60 °C	Both*
	S-Band: 2000-2500 MHz										
	C-Band: 4400-5100 MHz	10W		10 dB	12 dB	+27 to +32 VDC	1.60 A				

*Factory Configurable Only

 New products



HILNA™ High Intercept Low Noise Amplifier Selection Guide

LNA Model	Frequency Range	Gain	Noise Figure	OIP3	Supply Voltage	Current Consumption	Size (L x W x H)	Weight	Operating Temperature
HILNA HF	2 - 50 MHz	30 dB	3 dB	+30 dBm	+12 to +30 VDC	300 mA @ +12 VDC	3.15" x 2.50" x 1.18"	5 oz.	-30 to +70 °C
HILNA HF AGC	2 - 50 MHz	30 dB	3 dB	+30 dBm	+12 to +30 VDC	300 mA @ +12 VDC	3.15" x 2.50" x 1.18"	5 oz.	-30 to +70 °C
μHILNA-V1	50 - 1500 MHz	20 dB	1 dB	+31 dBm	+5 to +12 VDC	82 mA @ +12 VDC	1.00" x 0.75" x 0.50"	0.5 oz.	-20 to +60 °C
HILNA V1	50 - 1000 MHz	20 dB	0.8 dB	+32 dBm	+5 to +20 VDC	70 mA @ +12 VDC	3.15" x 2.50" x 1.18"	5 oz.	-30 to +70 °C
HILNA G2V1	50 - 1000 MHz	40 dB	0.8 dB	+31 dBm	+5 to +20 VDC	140 mA @ +12 VDC	3.15" x 2.50" x 1.18"	5 oz.	-30 to +70 °C
HILNA GPS	1200 - 1600 MHz	32 dB	0.8 dB	+30 dBm	+5 to +20 VDC	140 mA @ +12 VDC	3.15" x 2.50" x 1.18"	5 oz.	-30 to +70 °C
HILNA GPS C034 ¹	1200 - 1600 MHz	32 dB	0.8 dB	+30 dBm	+22 to +34 VDC	60 mA @ +28 VDC	3.76" x 3.27" x 0.95" ²	5 oz.	-30 to +70 °C
HILNA LS	1000 - 3000 MHz	50 dB	1.7 dB	+33 dBm	+5 to +15 VDC	300 mA @ +12 VDC	2.50" x 1.75" x 0.75"	2.5 oz.	-20 to +60 °C
HILNA LS C021-D ³	1000 - 3000 MHz	15 dB	1.7 dB	+33 dBm	+5 to +15 VDC	130 mA @ +12 VDC	2.50" x 1.75" x 0.75"	2.5 oz.	-20 to +60 °C
HILNA LS C026 ⁴	1400 - 1900 MHz	21 dB	2 dB	+30 dBm	+5 to +8 VDC	275 mA @ +5 VDC	2.50" x 1.70" x 0.75"	3 oz.	-20 to +85 °C
HILNA CX	5 - 10 GHz	35 dB	2.5 dB	+21 dBm	+5.5 to +20 VDC	170 mA @ +5.5 VDC	1.77" x 1.52" x 0.45"	1.3 oz.	-20 to +60 °C

Notes:

- 1 HILNA GPS C034 module incorporates a ruggedized chassis
- 2 Measurement includes built-in mounting flange
- 3 HILNA-LS-C021-D module utilizes a 9-pin Micro D connector
- 4 HILNA LS C026 module is hermetically sealed



RF Frequency Converter Selection Guide

Frequency Converter Model	RF Frequency	IF Frequency	IF Rejection	Tuning Resolution	Supply Voltage	Current Consumption	Size (L x W x H)	Weight	Operating Temperature
Multi-Octave RF Upconverter	2 - 3000 MHz	2 - 70 MHz	30 dB	5 kHz	+6 VDC	600 mA @ +6 VDC	3.50" x 2.50" x 1.00"	7.4 oz.	-15 to +50 °C
ConvertaWave™ RF Downconverter	225 - 500 MHz	70 MHz	80 dB	100 kHz	+10 to +18 VDC	220 mA @ 12 VDC	6.50" x 4.00" x 0.75"	11.3 oz.	-20 to +50 °C
ConvertaWave2™ RF Downconverter	200 - 2500 MHz	70 MHz	100 dB	1 Hz	+9 to +16 VDC	400 mA @ 12 VDC	7.00" x 4.00" x 1.35"	18.6 oz.	-20 to +50 °C
ConvertaWaveLite™ Downconverter	1010 - 1100 MHz	70 MHz	100 dB	.001 kHz	+9 to +16 VDC	400 mA @ 12 VDC	7.00" x 4.00" x 1.35"	18.6 oz.	-20 to +50 °C



Tunable RF Broadband Preselector Selection Guide

Preselector Model	RF Frequency	3 dB Bandwidth	Tuning Resolution	Supply Voltage	Current Consumption	Size (L x W x H)	Weight	Operating Temperature
HiPerTuner	200 - 2500 MHz	4 to 8 %	1 MHz	+9 to +16 VDC	150 mA @ +12 VDC	6.50" x 4.00" x 0.75"	11.3 oz.	-20 to +50 °C

RF Front-End

Front End Model	Transmit Frequency	Receive Frequency	Drive Level	RF Output Power	TX Gain	RX Gain (typ)	Supply Voltage	Current Consumption (@ 28 Vdc)	Size (L x W x H)	Weight
GPS RF Front End	1626.5 to 1675 MHz	1518 to 1559 MHz	0 dBm	20 W (min)	43 dB	47 dB	+27 to +32V	3.25 A (typ)	10.25"x 6.00 x 0.80 in	47 oz.



T/R Switch

T/R Switch Model	Frequency Range	Power Handling	Switch Time	Supply Voltage	Current Consumption	Size (L x W x H)	Weight	Operating Temperature
NuSwitchVU150MH01	50 to 500 MHz	150 W	4 µs	5 VDC	350 mA	3.54" x 4.20" x 0.98"	1.3 oz.	-20 to +70 °C

GSA Contract Number

47QSWA24D000V	
Vegas Data Diode	NW-1553-DD-VS01
SCISR Bidirectional Amplifier	NW-BA-SCISR-20-M02
Vampire Anomaly Detection & Data Recording	NW-1553-ML-VA01

Cybersecurity Hardware Solutions

Cybersecurity has become a top priority of our nation's defense organizations and commercial counterparts. As threats to our cyber environments continue to grow and evolve, innovative technologies must be developed to combat these ever-evolving threats. Utilizing technology developed by the Air Force Research Laboratory (AFRL), NuWaves RF Solutions offers protection for avionics busses through the use of physical mitigation devices.

Vegas- S MIL-STD-1553 Data Diode



Vegas-S allows for the isolation of the main MIL-STD-1553 avionics bus from bus monitors or systems under test for enhanced safety of flight. This control of data flow over the MIL-STD-1553 bus provides true risk reduction to the aircraft's avionics bus for early software upgrades to existing bus monitoring systems, along with reducing the risk to the aircraft's avionics bus for early bus monitor integration. Vegas-S supports two independent MIL-STD-1553 channels (ie: one 'A' and one 'B') and comes in a 7 in³ / 0.5 lbs package offering 40 mA at 28 VDC.

Vampire MIL-STD-1553 Anomaly Detection and Data Recording



The Vampire MIL STD 1553 Anomaly Detection and Data recording module records all of the energy on the MIL STD 1553 bus to an internal SD Card to allow for post flight and test analysis, along with playback of the recorded MIL STD 1553 traffic (using AFRL's Transfusion product). Vampire also has the capability to convert the MIL STD 1553 bus traffic to Ethernet UDP packets. It allows for real-time anomaly detection and is an additional method of recording bus traffic (external laptop needed). The module comes in a 30 in³ / 2 lb package offering 400 mA at 28 VDC.

Vegas-429 Data Diode



Vegas-429 is a data diode for the ARINC 429 avionics data bus. This data diode allows for isolation between the ARINC 429 data bus and equipment such as line replaceable units (LRUs), remote terminals (RTs), and other equipment. The Vegas-429 can provide isolation for bus monitors, systems under test for enhanced safety of flight, or other equipment. The data diode provide a single direction of data traffic as a read-only device and prevents data from being transmitted onto the data bus from the equipment that is reading the data. Vegas-429 provides a true risk reduction to the aircraft's avionics bus with it's read-only operation.

Vegas-429 is ideal for early software upgrades to existing bus monitoring systems, along with reducing the risk to the aircraft's avionics bus for early bus monitor integration. Vegas-429 supports 8 independent ARINC 429 channels (each channel has 2 inputs and 2 outputs) and comes in a 35 in³ and 0.94 lb package while drawing just 40 mA of DC current at 28 VDC.

RF & MICROWAVE PRODUCTS

Military • Government • Industrial

NuWaves RF Solutions is a premier supplier of Radio Frequency (RF) products, with a particular emphasis on subsystem, module-level products. Our market-leading designs are derived from over a decade of successful RF engineering design service work for a wide breadth of clients.



Power Amplifiers and Bidirectional Amplifiers

200 MHz to 15,000 MHz
5 W to 125 W
Miniature size – as small as 1.6 in³
Ruggedized IP67 tactical modules available



Single- & Multi-Channel Amplifiers

225 MHz to 5.875 GHz
5 W to 50 W
Linear models for OFDM, and MIMO radios
Auto-sense T/R switching available



Low Noise Amplifiers

2 MHz to 10 GHz
20 to 50 dB of gain
Ruggedized & lab models



Preselectors & Tuners

Fully programmable
200 MHz to 2.5 GHz
4-8% 3 dB bandwidth



RF Front End

1626.5 to 1675 transmit frequency
1518-1559 receive frequency
20 W (min) output power
47 dB receive gain



RF Frequency Converters

Upconverters

- Programmable IF & RF
- 2 to 70 MHz IF input
- 2 MHz to 3 GHz RF output

Downconverters

- Programmable from 200 MHz to 2.5 GHz
- 70 MHz IF input
- User-selectable IF bandwidths



RF Switch

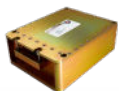
50 to 500 MHz
150 W Power Handling
4 μ s Switch Time



Filters / Diplexers / Multi-plexers

100 MHz - 20 GHz
> 100 W Power Handling
Custom filter designs up to 40 GHz
Custom filter designs up to 1kW power handling
Multi-paction design capability

CYBERSECURITY SOLUTIONS



Vampire

Ruggedized MIL-STD-1553 Data Recorder,
Ethernet output.

Use Cases: Anomaly Detection, Predictive
Maintenance, Reverse Engineering, Real Time
Secondary Display

Vegas-S

Ruggedized MIL-STD-1553 Data Diode,
Two channel (A and B), Bus protection
from malicious traffic.



Vegas-429

Vegas 429 Data Diode for
ARINC 429 Data Bus. Provides
isolation and one-way data
flow for bus monitors.



NuWaves RF Solutions
132 Edison Drive
Middletown, OH 45044

www.nuwaves.com
sales@nuwaves.com
513.360.0800

