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New Thinking in Wireless and Radar Technology



Renaissance Electronics/HXI Wireless Edge Newsletter

November/December 2018

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TEST CAPABILITIES		REC-100-001	REC-100-002	
REQUIREMENTS	Model#	Test Capabilities	Model#	Test Capabilities
Thermal Shock	1001	A,B	1002	A,B
Vibration Shock	2001	A,B	2002	A,B
Vibration Random	3001	A,B	3002	A,B
Resonance Scattering Test	4001	A,B	4002	A,B
Humidity	5001	A	5002	A
Resonance Scattering Test	6001	A	6002	A
Corrosion Resistance	7001	A	7002	A
Shock	8001	A	8002	A
Drop	9001	A	9002	A
Impact	10001	A	10002	A
Crash	11001	A	11002	A
Free Fall	12001	A	12002	A
Free Fall	13001	A	13002	A
Free Fall	14001	A	14002	A
Free Fall	15001	A	15002	A
Free Fall	16001	A	16002	A
Free Fall	17001	A	17002	A
Free Fall	18001	A	18002	A
Free Fall	19001	A	19002	A
Free Fall	20001	A	20002	A



Broadband Digital Attenuator

HXI's HDA040-069 Digital Attenuator covers the range from DC to 40 GHz in 6-bit operation. Attenuation bit values are 0.5 dB (LSB), 1, 2, 4, 8 and 16 dB for total attenuation of 31.5 dB above the attenuator insertion loss. Low bit errors and RMS phase errors are characteristics of this attenuator. The attenuator is useful for communication systems, radars and in test equipment.

[HDA040-069 Datasheet](#)

For more information about Renaissance/HXI products contact us at 978-772-7774 or visit www.rec-usa.com / www.hxi.com

5G Testing Switch Matrix



Renaissance's new Switch Matrix is designed to accept multiple frequency bands and then select and combine up to 5 FDD and 2 TDD frequency bands to a common UL port.

[18A6BAX Datasheet](#)

For more information about Renaissance/HXI products contact us at 978-772-7774 or visit www.rec-usa.com / www.hxi.com

Space Qualified, S-band, High Power 2 Channel Power Divider

For high power S-band space qualified applications, REC has designed a 100W 2-channel power divider that has low loss and high isolation. The design uses NASA compliant low outgassing materials with a housing/cover that can be laser welded for a truly hermetic seal.



[10A4NAJ-2S-S Datasheet](#)

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26.5 - 40 GHz WR-28 Harmonic Mixer

K and Ka Band Isolators for Space Applications

Renaissance has successfully manufactured, tested and tested per MIL-PRF-38534 Class C and MIL-STD-883C, New Reliability and Accelerated Isolators for RF applications in commercial and military satellites.

REC is the preferred supplier on many Space Programs

Devices are completely made in USA at our "state of the art" facility in Harvard, MA

Customers can directly refer the design and qualification documents which can substantially reduce cost and delivery time.

Other frequency bands are also available

Package	Freq Min (GHz)	Freq Max (GHz)	Part Numbers
WICKERSTEP COILWAVE	19.5	31	20462C
WICKERSTEP COILWAVE	21.5	31.5	20463C
WICKERSTEP COILWAVE	26.5	30.5	20464C
WICKERSTEP COILWAVE	27.5	31	20465C
WICKERSTEP COILWAVE	31	31	20466C
COILWAVE COILWAVE	21.5	31	20467C
COILWAVE COILWAVE	26.5	31	20468C
COILWAVE COILWAVE	27.5	31	20469C
COILWAVE COILWAVE	31	31	20470C
COILWAVE COILWAVE	21.5	31	20471C
COILWAVE COILWAVE	26.5	31	20472C
COILWAVE COILWAVE	27.5	31	20473C
COILWAVE COILWAVE	31	31	20474C

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A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Agilent and Rohde & Schwarz spectrum analysers for frequency extension applications.

[WHMB-28 Datasheet](#)

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Surface Mount Isolators and Circulators

200 MHz – 20 GHz

Frequency Band	SMI Isolators	SMI Circulators
200 – 400 MHz	400 – 1000 MHz, 10kA Series	300 – 100 MHz, DUAL/DOM
400 – 600 MHz	600 – 1000 MHz, 10kA Series	100 – 100 MHz, 10kA Series
600 – 1000 MHz	700 – 1000 MHz, 10kA Series	100 – 100 MHz, 10kA Series
1 – 2 GHz	1.000 – 1.000 GHz, 10kA Series 1.000 – 1.000 GHz, 10kA Series 1.000 – 1.000 GHz, 10kA Series	1.000 – 1.000 GHz, 10kA Series 1.000 – 1.000 GHz, 10kA Series 1.000 – 1.000 GHz, 10kA Series
2 – 4 GHz	2.000 – 2.000 GHz, 10kA Series 2.000 – 2.000 GHz, 10kA Series 2.000 – 2.000 GHz, 10kA Series	2.000 – 2.000 GHz, 10kA Series 2.000 – 2.000 GHz, 10kA Series 2.000 – 2.000 GHz, 10kA Series
4 – 8 GHz	4.000 – 4.000 GHz, 10kA Series 4.000 – 4.000 GHz, 10kA Series 4.000 – 4.000 GHz, 10kA Series	4.000 – 4.000 GHz, 10kA Series 4.000 – 4.000 GHz, 10kA Series 4.000 – 4.000 GHz, 10kA Series
8 – 20 GHz	8.000 – 8.000 GHz, 10kA Series 8.000 – 8.000 GHz, 10kA Series 8.000 – 8.000 GHz, 10kA Series	8.000 – 8.000 GHz, 10kA Series 8.000 – 8.000 GHz, 10kA Series 8.000 – 8.000 GHz, 10kA Series

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RENAISSANCE New Thinking in Wireless and Radar Technology **hxi** Millimeter Wave Products
www.rec-usa.com www.hxi.com

SWITCH MATRICES
400 – 6000 MHz
Ethernet / GUI Controlled
Available for Delivery in 4 – 6 Weeks



18A6BAC 4 X 48



18A6BAZ 4 X 48



18A6BAQ 8 X 8



18A6BAX 5G Testing SM



18A6BAY 24 X 12



18A6BAF 8 X 96

In Stock, Ready to Sell!

Isolators, Circulators, Combiners available with volume discounts

Isolators, Circulators, Combiners

Surface Mount SLE Isolators

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REC/HXI Product Lines DC to 300 GHz

RF MICROWAVE PRODUCTS: DC to 40 GHz

CIRCULATORS/ISOLATORS

- Surface Mount, Coaxial, Dip-In, Through-Hole and Microstrip
- Standard Custom Frequencies
- Low Loss, High Isolation
- High Power to 1000W
- Octave Band Designs
- Custom Designs

SWITCHES/ATTENUATORS

- High Rate Electro-mechanical - Up to 1000 cycles
- Tri-Function: Laser-Triggered
- Solid State - PIN Diodes, MEMS, GaAs

BASE STATION

- SO Components
- DMS, Small Cell Components/Assemblies
- Multi-Band/Transceiver Components
- Power Divider Components/Assemblies
- Reconfigurable Multi-Couplers/UMs

SWITCH MATRICES

- Electro-mechanical, Solid-State or MEMS
- N x M Matrices
- Bi-directional/Non-Reciprocal
- Backlighting/Blocking
- ATE & Custom Applications

SPECIALTY PRODUCTS

SPACE QUALIFIED, HIGH RELIABILITY AND CUSTOM

- LAMP & X-Ray Sources
- Radiation Hardened
- Low Loss, Temperature Stable
- High Isolation
- Hermetic Sealed
- EMI/EMC
- Meets NASA's Outgoing Requirements

TOP CAPABILITY	DC	100 MHz	1 GHz	10 GHz	100 GHz	300 GHz
Power	1000W	1000W	1000W	1000W	1000W	1000W
Isolation	20dB	20dB	20dB	20dB	20dB	20dB
Loss	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB
Size	100mm	100mm	100mm	100mm	100mm	100mm
Lead Time	4-6 weeks	4-6 weeks	4-6 weeks	4-6 weeks	4-6 weeks	4-6 weeks

HXI MILLIMETER WAVE PRODUCTS: 20 GHz to 325 GHz

RADAR FRONT ENDS

- Capable to 100 GHz Capability Range
- Auto Radar Test Sets Available
- Runway FOD Test Sets Available
- PROCEC and Power PFCs
- Integrated Transmitters for Production
- Monolithic and Multi-Static Configurations
- Low-Loss VCO and DCS-Based Designs
- Built together Components for Broadcasting
- Fast Prototyping

RADIOS

- Lowest Latency in the Industry (2ns)
- 80 GHz, 100 GHz or 120 GHz
- HFC/DC (Direct) or RF Front End Portable Applications
- Auto Power Alignment

COMPONENTS

- Mixers & Upconverters
- Frequency Multipliers
- Noise
- Phase Antennas
- Circulators & Isolators
- Phase Multipliers
- Sub-Harmonic Mixers
- Output Drivers and VCOs
- Couplers
- Power Dividers
- Frequency Combiners
- Waveguide Products

AUTO RADAR TEST SOLUTION

E-BAND RADAR TRANSCEIVER

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REC Parts Catalog

Renaissance has created a new electronic catalog. It is a downloadable, searchable spreadsheet of our parts. Easy tool to sort, search and locate the perfect part for your needs. If you don't see what you need, just call or [email](#) us!

[Renaissance Catalog](#)

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