

CERNEX, Inc. & CernexWave

INTRODUCTION

Cernex Inc. was founded in 1988. The Cernex management team consists of senior design engineers and sales and marketing staff with more than 500 man-years of experience

CERNEX, Inc. design, develop and produce high quality, reliable advanced thin-film hybrid, MMIC and discrete microwave and millimeter-wave components and sub-assemblies up to 1000Ghz for both active and passive components, waveguides products, ferrite products, antenna products, sub-systems for the commercial and military markets to the requirements of the AS9100:2016 and ISO9001:2015 international standards with no exclusions taken.

The markets that CERNEX, Inc. participate include wireless telecommunications, aerospace, defense and the fiber optic communications industry.

CERNEX, Inc. have developed and implemented a QMS (Quality/Business Management System) to document its practices associated focused on the design, development, manufacture and sale of its aviation, space, and defense and commercial products and services. It is CERNEX, INC.'s goal to consistently provide products and services which exceed customer product requirements and to meet applicable statutory and regulatory requirements in order to enhance customer satisfaction, and to address risks and opportunities associated with its context and objectives. CERNEX, Inc. believe that good quality management processes good business processes.



CERNEX, Inc. & CernexWave

NOMENCLATURE (12/16)

AMPLIFIERS (Up to 110 Ghz)

Gain Modules	CGM
Broadband Low Noise	CBL
Broadband Med. Power	CBM
Broadband High Power	CBP
Narrowband Low Noise	CNL
Narrowband Med. Power	CNM
Narrowband High Power	CNP
Limiting Amplifiers	CLA
Gain Control Amplifiers	CGC
Temp. Control Ampl.	CTA
Gain/Temp. Control Ampl.	CGT
Gain Slope Amplifiers	CGS
DLVA	CDL

FREQUENCY MULTIPLIERS

Full Band Networ Analyzer Extenders	CFM
Full Band Frequency Extenders	CNE
	CFE

FREQUENCY DIVIDERS

	CDV
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FREQUENCY COMBINERS

	CCF
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FREQUENCY CONVERTERS

Down Converters	CDN
Up Converters	CUP
Subharmonic Pumped Up-converters	CSUP

ANTENNAS

Rectangular Gain Horn	CRA
Circular Gain Horn	CCA
Microstrip Antenna	CMA
Planar Antenna	CPA
Wide Angle Scalar Feed Horn	CWA
Scalar Feed Horn	CFH
Orthomode Transducer	COT
Horn Lens Antennas	CHA
Prime Focus Parabolic Antennas	CPF
Casserein Antennas	CCG
Circular Polarizer	CCP
Linear-Circular Switchable Polar.	CLP
Farraday Fixed Polarizer	CFP
Farraday Switchable Polarizer	CSP
Faraday Programmable Polarizer	CPP
Parabolic Grid Antenna	CPG
Parabolic Antenna	CPB
GPS Antenna	CGP
Patch Antenna	CAP
Omni Directional	COD

ANTENNAS

Sectorial Horn Antennas	CSHA
Hybrid Polarizer	CHP
Corrugated Antenna	CGA
Patch Antenna(Microstrip) for Speed Sensor Heads	CAPS
Microstrip Patch Array Antennas	CAPA
Omni Directional Antennas	CODA

COUPLERS PRODUCTS

Directional Couplers	CDC
Cross Guide Couplers	CCC
Magic Tee	CMT
Bidirectional Couplers	CBC
Power Samplers	CPR
Hybrid Couplers	CHC
Dual Direction Couplers	CDDC
Waveguide Cross Guide Block Couplers	CCCB

FERRITE(ISOLATORS/CIRCULATORS)

Differential \square -shift Circulators	CPC
High Power Resonance Isolators	CRI
T-Type Circulators	CTC
Double Junction Circulators	CDJ
Junction Circulators (Include K & Ka Full-Band)	CJC
Junction Isolators (Include K & Ka Full-Band)	CJI
Fullband Isolators	CFI
Fullband Circulators	CFC
Drop-in Isolators	CID
Drop-in Circulators	CCD
Full Band Ferraday Isolators	CFF
Coaxial Isolators	COI
Coaxial Circulators	COC
High Power Coaxial Circulators	COH
High power Waveguide Circulators	CWC
High Power Waveguide Isolators	CWI
Iso-adapters	CIA
Microstrip isolators(SMT)	CMIS
Microstrip Circulators(SMT)	CCMS
S.M. Isolators/Circulators	CSI/CSC

FILTERS & DIPLEXERS

Lowpass	CLF
Bandpass	CBF
Highpass	CHF
Image Rejection	CIF
Diplexers	CDF
Triplexers	CTF
Switch Filter Banks	CSB

Notch Filters	CNF	Waveguide Short	CSW
		Adjustable Waveguide Short	CAS
OSCILLATORS & NOISE SOURCES		Rotary Joint	CRJ
Mech. Tuned Gunn Osc.	CMG	Frequency Meters	CMF
Varactor Tuned Gunn Osc.	CVG	Direct Reading Freq. Meters	CDM
Bias Tuned Gunn Osc.	CBG	Hybrid Tees	CHT
DRO	CDO	E & H Plane Series Tees	CTE
PLO	CPO	Single Hybrid Ring	CHR
VCO	CVO	E/H Plane Tuners	CPT
Full Band Noise Source	CNS	90 degree Hybrid	CBH
Full Band Noise Figure and Gain Test Extenders	CNF	Circular Waveguide Section	CCS
Wide Tuning Bandwidth Mechanical Gunn Osc.	CMGW	3dB Short Slot hybrid	CSH
Low Cost Gunn Osc.	CMGL	Waveguide Flanges	CWR
SWITCHES		Flexible/Twistable Waveguide	CFT
SPST Switch	C1T	Flexible Waveguide	CFW
SPDT Switch	C2T	Power Sampler	CPR
SPTT Switch	C3T	Waveguide Tuner	CWT
SP4T Switch	C4T	Waveguide Combiner	CDPW
Rotary Switch	CRT	Elliptic Waveguide	CEW
Two Position Solenoid Switch	CTP	Pressure Windows	CPW
Mechanical Switch (Electro-Mech.)	CSM	Power Sensor	CPWS
Polarization Switches	CZS	Waveguide Open	COW
Mechanical Waveguide Switches	CWS	Waveguide Short	CSW
Coaxial Switches	CTC	Pressure Inlet	CPI
		TERMINATIONS	
PHASE SHIFTERS		Coaxial Load	CCL
Phase Shifters	CPS	High Power Load Termination	CWL
Motorized Rotary Vane Phase Shifter	CMP	Sliding Matched Termination	CST
Ferrite Phase Shifters	CFS	DC Block	CDB
Micrometer Cal. Phase Shifters	CMS	Chip Power Termination	CSL
Direct Reading Phase Shifters	CDS	Flange Termination	CFL
Digital Phase Shifters	CSD		
Differential Phase shifters	CDD	MIXERS	
		Balance Mixers	CMB
TRANSITION & ADAPTERS		Harmonics Mixers	CHM
Waveguide to Waveguide	CWW	Rejection Mixers	CRM
Waveguide to Coax	CWK	I/Q Mixers	CQM
Rectangular to Circular	CRC	Quadrature Mixers and Phase Detectors	CQMP
Tapered Mode	CTM	Subharmonic Pumped Mixers	CSHM
Flange Adapter	CWF		
Coaxial Adapters		ATTENUATORS	
		Fixed Setting Attenuators	CFA
WAVEGUIDE PRODUCTS		Level Set Attenuators	CSA
Waveguide Section	CSS	Micrometer Cal. Attenuators	CMC
Waveguide Section(Block)	CSSB	Direct Reading Precision Attenuator	CDA
Circular Waveguide Section	CSSC	Pin Diode Attenuator	CPD
Waveguide Twist	CTS	Programmable Rotary Attenuator	CRV
Waveguide E/H Bends 90°	CWB	Voltage Controlled Attenuators	CVA
Waveguide E/H Bends(Block)	CWBB	Digital Controlled Attenuators	CAD

ATTENUATORS		BIAS TEE	
Step Attenuators	CAT	LIMITER	CBT
Chip Power Attenuators	CFAS	POWER COMBINER/DIVIDER	CLM
Flange Power Attenuators	CFAF	CABLE ASSEMBLIES	CDP
Rotary Step Attenuators	CSAR	VOLTAGE REGULATORS	CVR
Push Button Step Attenuators	CSAP	EQUALIZER	CGE
Toggle Switch Step Attenuators	CSAT	SYNTHESIZER	CSY
		PIN DIODE MODULATOR	CPM
RESISTORS		TEST KITS	CKT
Chip Power Resistors	CRS	CALIBRATION KITS	CCK
Flange Power Resistors	CRF	VNA TEST CABLES	CVNA
		MINI JACKS	CMJ
DETECTORS		RECEIVER SUB-ASSEMBLIES	CRX
Finline Detectors	CFD	AND MODULES	
Balanced Phase Detector	CBD	TRANSMITTER SUB-ASSEMBLIES	CTX
Amplitude Detector	CMD	AND MODULES	
		TRANSCEIVER SUB-ASSEMBLIES	CTR
SUBSYSTEMS		AND MODULES	
Subsystems	CSR	RF FEEDTHRU	CFE
		LOW NOISE BLOCK CONVERTER	CNB

AMPLIFIERS: GaAs, PHEMT, GaN

BROADBAND LOW NOISE AMPLIFIERS:

0.001-110GHz (Octave and Multi-Octave) With Noise Figure As Low As 1db.

0.5-2GHz; 0.5-12GHz; 0.5-20GHz; 0.5-40GHz; 2-4GHz; 2-8GHz; 2-20GHz; 2-26.5GHz; 3.7-12GHz; 5-15GHz; 6-18GHz; 18-26.5GHz; 18-40GHz; 26.5-40GHz; 57-65GHz; 85-97GHz; 75-110GHz

BROADBAND MEDIUM POWER AMPLIFIERS:

0.001-97GHz (Octave and Multi-Octave) With Output Power Up To 30dBm.

0.5-2GHz; 0.5-4GHz; 0.5-6GHz; 0.5-8GHz; 0.5-10GHz; 0.5-12GHz; 0.5-14GHz; 0.5-20GHz; 2-4GHz; 2-8GHz; 2-20GHz; 2-50GHz; 3.7-12GHz; 5-15GHz; 6-18GHz; 18-26.5GHz; 18-40GHz; 26.5-40GHz; 40GHz-60GHz; 71-76GHz; 81-86GHz; 90-97GHz; 75-110GHz.

BROADBAND HIGH POWER AMPLIFIERS:

0.001-45GHz (Octave and Multi-Octave) With Output Power Up To 53dBm.

0.5-2GHz; 2-4GHz; 2-8GHz; 4-8GHz; 6-18GHz; 3.7-12GHz; 5-15GHz; 8-12GHz; 12-18GHz; 18-20GHz; 18-26.5GHz; 26.5-40GHz; 40-50GHz.

NARROWBAND LOW NOISE AMPLIFIERS:

0.001-97GHz With Noise Figure As Low As 0.30dB At L-Band, And 6dB At 110GHz.

NARROWBAND MEDIUM POWER AMPLIFIERS:

0.001-96GHz With Output Power Up To 33dBm At Q Band.

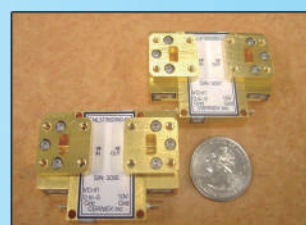
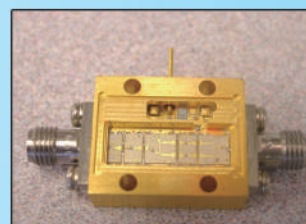
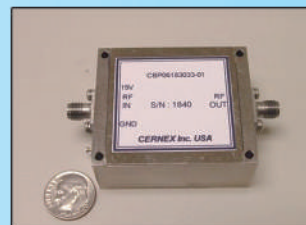
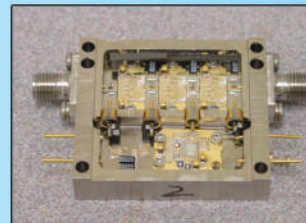
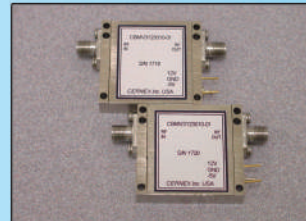
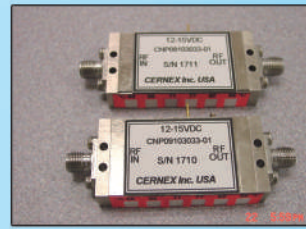
NARROWBAND HIGH POWER AMPLIFIERS:

0.001-45GHz With Output Power Up To 1000W At L & C Band.

LIMITING AMPLIFIERS:

0.001-60GHz (Octave and Multi-Octave) With Medium And High Gain.

0.5-2GHz; 2-8GHz; 2-18GHz; 4-8GHz; 6-18GHz; 8-12GHz; 8-20GHz; 18-26.5GHz; 26.5-40GHz; 40GHz-60GHz



RACK MOUNT AMPLIFIERS (19 INCHES):

0.5-2GHz (20W - 50W); 0.8-2.5GHz (20W - 300W);
1-2GHz (20W - 300W); 2-4GHz (20W - 300W); 2-6GHz (10W - 300W);
2-8GHz (10W - 100W); 4-8GHz (20W - 100W);
8-12GHz (20W - 150W); 6-18GHz (10W - 100W);
18-26.5GHz (5W, - 20W); 26.5-40GHz (2W - 20W).

DESK TOP AMPLIFIERS (12 INCHES):

LNA: 1-40GHz (5dB NF); 1-50GHz (7dB NF); 1-75GHz (9dB NF).

0.5-2GHz (5W); 0.8-2.5GHz (5W & 10W); 1-2GHz (5W & 10W);
2-4GHz (5W & 10W); 2-6GHz (5W); 2-8GHz (5W); 4-8GHz (10W);
8-12GHz (5W & 10W); 6-18GHz (2W, 4W & 5W); 18-26.5GHz
(1W & 2W); 26.5-40GHz (1W & 2W).

BENCHTOP AMPLIFIERS GaAs & PHEMT:

LNA: 1-40GHz (5dB NF); 1-50GHz (7dB NF); 1-75GHz (9dB NF).

0.5-2GHz (5W); 0.8-2.5GHz (5W & 10W); 1-2GHz (5W & 10W);
2-4GHz (5W & 10W); 2-6GHz (5W); 2-8GHz (5W); 4-8GHz (10W);
8-12GHz (5W & 10W); 6-18GHz (2W, 4W & 5W); 18-26.5GHz
(1W & 2W); 26.5-40GHz (1W & 2W)

30KHz-10GHz; 30KHz-12GHz; 30KHz-14GHz; 50KHz-18GHz; 50KHz-20GHz
75KHz-45GHz; 75KHz-50GHz; 75KHz-78GHz

DESK TOP MULTIPLIERS (12 INCHES):

INPUT FREQUENCY: 2.5GHz

OUTPUT FREQUENCIES: 5GHz; 10GHz; 20GHz & 40GHz.

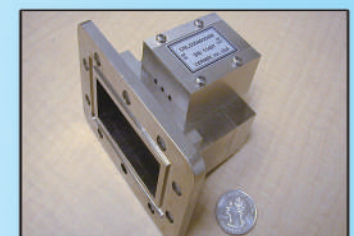
DESK TOP PRESCALARS (12 INCHES):

INPUT FREQUENCY: 40GHz @ 0dBm

OUTPUT FREQUENCIES: 20GHz, 10GHz & 5GHz @ 0dBm

SATCOM WAVEGUIDE LNAs:

L-Band; S-Band; C-Band; X-Band; Ku-Band, Ka-Band



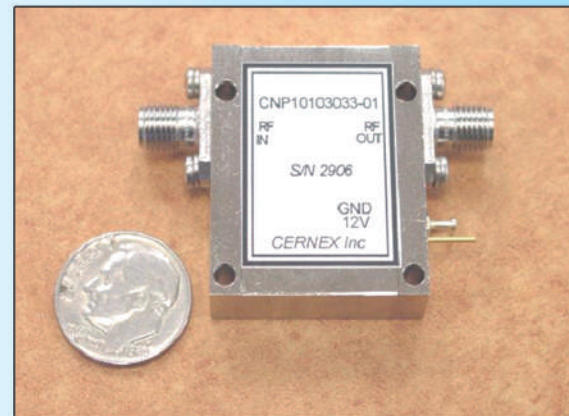
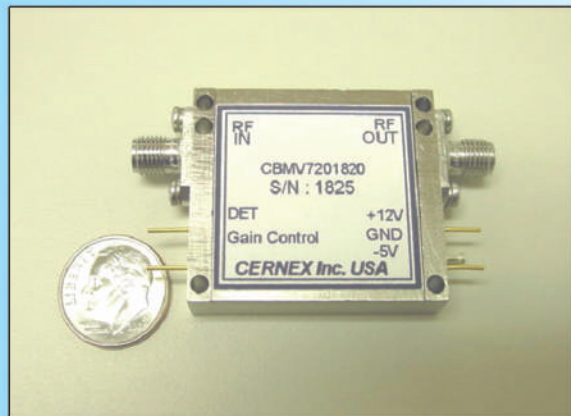
AMPLIFIERS FOR OPTICAL FIBER COMMUNICATIONS:

Broadband Modulator Driver Amplifiers (NRZ) for Optical Fiber Communications Up To 40Gb/s With Output Voltage of 3-8 Vp-p.

30KHz-10GHz; 30KHz-12GHz; 30KHz-14GHz; 50KHz-18GHz; 50KHz-20GHz; 75KHz-45GHz; 75KHz-50GHz; 75KHz-78GHz.

Driver Amplifiers (RZ) for Clock Recovery and Forward Error Correction Up To 100Gb/s With Output Voltage Up To 30 Vp-p.

20Gbs & 40Gbs Clock Recovery Amplifiers



FREQUENCY MULTIPLIERS UP TO 1000GHz:

PASSIVE FREQUENCY MULTIPLIERS:

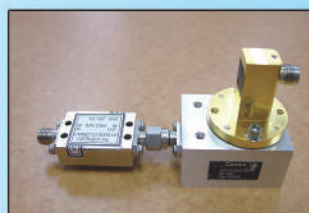
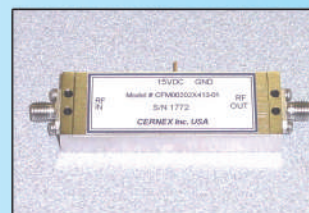
With Input Frequency As Low As 0.01GHz, And Output Frequency As High As 500GHz.

ACTIVE FREQUENCY MULTIPLIERS EXTENDERS:

With Input Frequency As Low As 0.01GHz, And Output Frequency As High As 120GHz. Multiplication Factors From 2 to 64.

FREQUENCY DIVIDERS:

With Input Frequency As High As 40GHz, And Output Frequency



MIXERS & DETECTORS UP TO 1000GHz:

Harmonic Mixers, Spectrum Analyzer Mixers, Single Ended Mixers, Balance Mixers & Wide-Band Balance Mixers.

SOURCES UP TO 160GHz:

Mechanically Tuned Gunn Oscillators, Varactor-Tuned Gunn Oscillators, DROs, VCOs, PLOs, Injection Locked Oscillators & Noise Sources.

CONTROL COMPONENTS UP TO 160GHz:

Direct Reading Precision Attenuators, Programmable Rotary Vane Attenuators, Uncalibrated Variable Attenuators, Dial-Driven Calibrated Attenuators, Micrometer-Driven Calibrated Attenuators, Variable PIN Attenuators. Frequency Meters & Direct Reading Frequency Meters.

ATTENUATORS UP TO 160GHz:

Coaxial & Waveguide Fixed Power Attenuators Up To 10KW, Level Set Attenuators, Micrometer Cal. Attenuators, PIN Diode Attenuators, Voltage Controlled Attenuators, Digital Controlled Attenuators.

SWITCHES UP TO 160GHz:

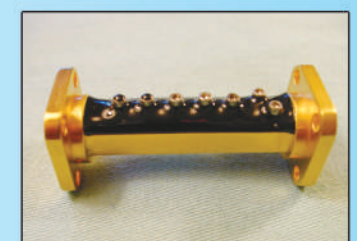
Mechanical Waveguide Switches, Electromechanical Waveguide Switches, PIN Switches (SP1T To SP16T, Full-band Switches).

FERRITE PRODUCTS UP TO 170GHz:

Fullband Junction Circulators And Isolators. (18-26.5GHz; 26.5-40GHz; 33-50GHz; 40-60GHz; 50-75GHz; 60-90GHz & 75-110GHz). High Power Isolators And Circulators, Coaxial And Drop-in Isolators And Circulators.

FILTERS & DIPLEXERS UP TO 160GHz:

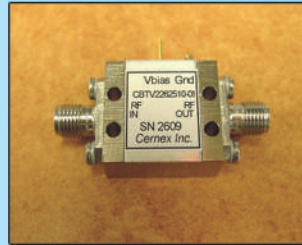
BandPass Filters, Low Pass Filters, HighPass Filters & Notch Filters.



CERNEX, Inc. & CernexWave

BIAS TEES:

Waveguide & Coaxial Bias Tees Up To 110Ghz.



WAVEGUIDE & COXIAL COUPLERS UP TO 160GHz:

Directional & Bi-directional Couplers, Precision High Directivity Couplers, Crossguide Couplers, 3dB Hybrid 90 Degree And 180 Degree Couplers.



POWER COMBINERS AND DIVIDERS UP TO 1100GHz:

Waveguide & Coaxial 2 To 24 Way Combiners/Dividers.



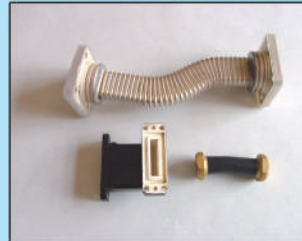
WAVEGUIDE AND COXIAL PHASE SHIFTERS:

Direct Reading & Variable Phase Shifters.



TERMINATIONS AND LOADS UP TO 160GHz:

Coaxial Loads Up To 50KW, Waveguide Air & Water Cooled Loads Up To 5KW, Sliding Matched Terminations, Waveguide & Coaxial Terminations, DC Block.



TRANSITIONS / ADAPTERS UP TO 110GHz:

Low Loss Cosine & Linear Tapered Mode Transitions, Circular To Rectangular Waveguide Transitions, Waveguide To Coax Transitions, Coaxial Adapters (1mm, 1.8mm, 2.4mm, 3,5mm, SMA etc.. In Series And Between Series).



WAVEGUIDE PRODUCTS UP TO 1000GHz:

Matched Hybrid Tees, E-Plane And H-Plane Tees.

Waveguide Sections, Terminations, Sliding Matched Terminations, Twists & Bends, Shorts, Adjustable Shorts, Rotary Joints, Hybrid Tees, H and E Plane Series Tees, Single Hybrid Ring, 90 Degree Hybrid Tees, Circular Waveguide Sections, 3dB Short Slot Hybrid, Waveguide Flanges, Flexible/Twistable Waveguides, Waveguide Tuners, Elliptic Waveguide, Pressure Windows, Tunable Loads & Shorts, E/H Plane Tuners, Mechanical And Power Samplers.



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DETECTORS UP TO 1000GHz:

Finline Detectors, Balance Phase Detectors & BroadBand Detectors.



ANTENNA PRODUCTS UP TO 1000GHz:

Horn Lens Antennas, Standard Gain Horn Antennas, Scalar & Wide Angle Scalar Feed Horn Antennas, Cassegrain Reflector Antennas, Prime Focus Antennas, Orthomode Transducers, Linear To Circular Fixed And Switchable Polarizers, Parabolic Grid Antennas, GPS Antennas & Flat Panel Antennas.



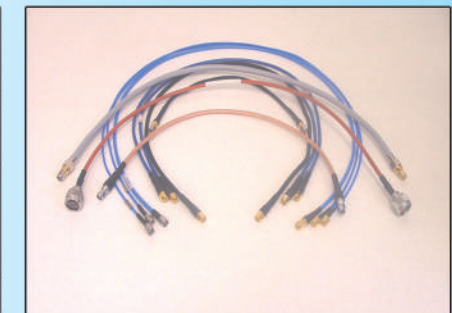
ASSEMBLIES AND SUBSYSTEMS:

Up/Down Converters, Sat-Com Up/Down Converters, Dual & Tri-Band Block Down Converters, Transmitters, Generic Transceivers & Antenna-Related Subsystems.



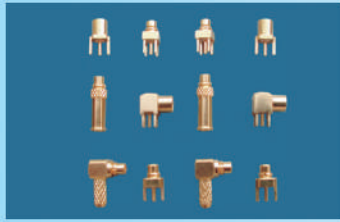
SYSTEMS PRODUCTS CAPABILITY:

Sensor Products, Communication Products, Remote Sensing Products, Surveillance And EW Products.



NOTES: PLEASE, CONTACT THE FACTORY FOR ALL YOUR OTHER SPECIAL REQUIREMENTS. WE ALSO HAVE PRODUCTS, WHICH ARE NOT YET MENTIONED IN THIS BROCHURE. DATASHEETS FOR EACH PRODUCT CAN BE DOWN LOADED FROM OUR WEBSITE.

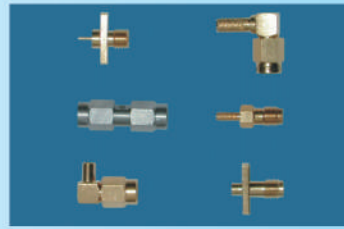
CONNECTORS



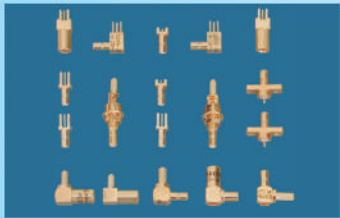
MMCX(DC-6GHz)



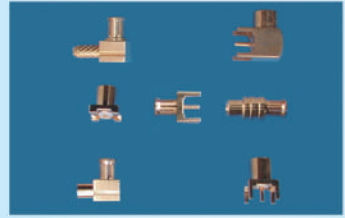
SMP(DC-26.5GHz)



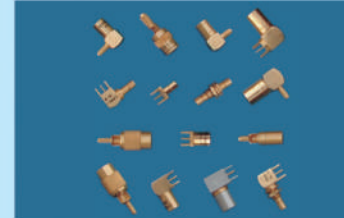
SSMA(DC-40GHz)



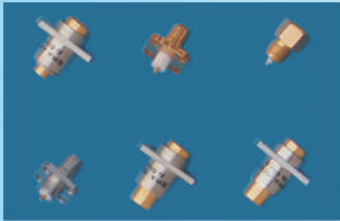
SSMB(DC-3GHz)



MCX(DC-6GHz)



SMB(DC-12.4GHz)



BMA(DC-22GHz)



BNC(DC-4GHz)



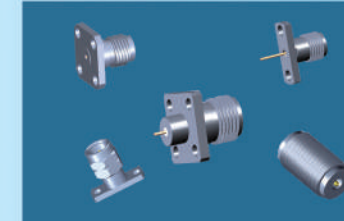
7-16(DC-7.5GHz)



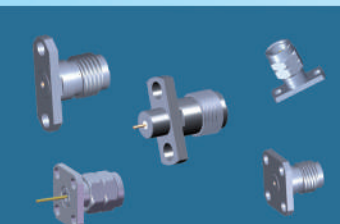
SMA(DC-27GHz)



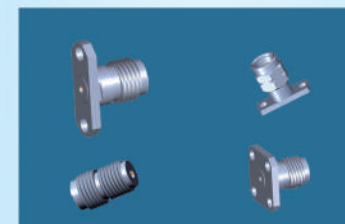
N(DC-18GHz)



2.92mm(DC-40GHz)



2.4mm(DC-50GHz)



1.85mm(DC-65GHz)



1mm(DC-110GHz)

ADAPTORS

IN SERIES ADAPTORS:

TNC-TNC adaptors(DC~11GHz)

BNC-BNC adapters(DC~8GHz)

SMA-SMA adaptors (DC~27GHz)

3.5mm-3.5mm adaptors(DC~33GHz)

2.4mm-2.4mm adaptors(DC~50GHz)

1mm-1mm adaptors(DC~110GHz)

TNCA-TNCA adaptors(DC~18GHz)

N-N adaptors(DC~18GHz)

SSMA-SSMA adaptors(DC~40GHz)

2.92mm-2.92mm adaptors(DC~40GHz)

1.85mm-1.85mm adaptors(DC~65GHz)

BETWEEN SERIES ADAPTORS:

APC-7 to N

SMA to L16

2.4mm to N

N to TNCA

2.4mm to 3.5mm

2.4mm to 2.92mm

2.4mm to SMA

2.4mm to SSMA

SMA to TNCA

3.5mm to APC-7

3.5mm to N

N to BNC

SMA to N

1.85mm to 3.5mm

1.85mm to 2.92mm

1.85mm to 2.4mm

SMA to BNC

SSMA to SMA

L16 to N

2.92mm to N

N to TNC

2.9mm to 3.5mm

SMA to 3.5mm

2.92mm to SMA

2.92mm to SSMA

SMA to TNC

1mm to 1.85mm

RIGHT ANGLE ADAPTORS:

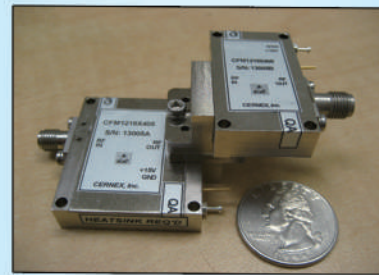
TNC,N,SMA 3.5mm,2.92mm,2.4mm Series



CERNEX, Inc. & CernexWave



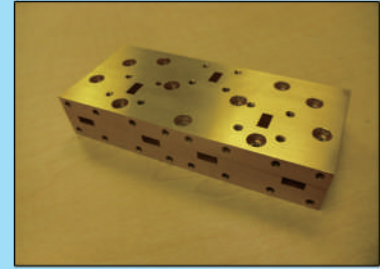
Programmable Step Attenuators



Multiplier



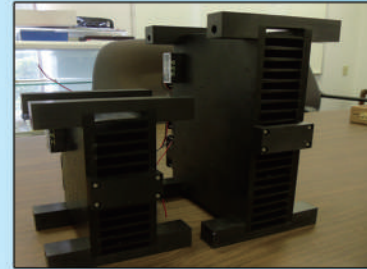
18GHz Rotary Joint



Waveguide Combiner



WR28 E-H Tuner



Heatsinks



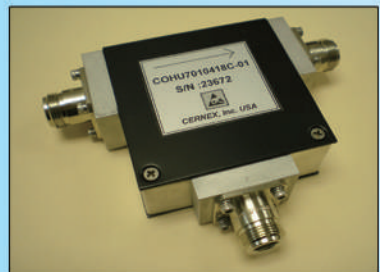
WR10 Bidirectional Coupler



Test kit



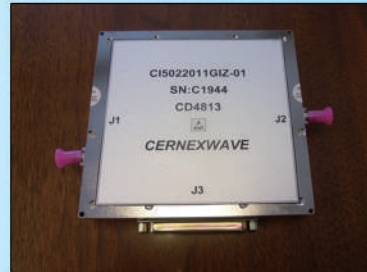
WR28 Polarizer



Coax High Power Circulator



4-8GHz High Power Circulator



IQ Modulator



Rotary Step Attenuator



Waveguide Filter

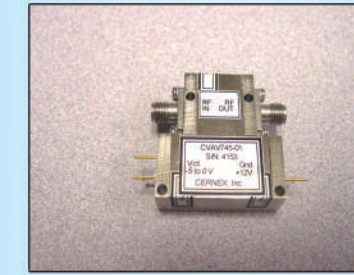


Tunable Shorts

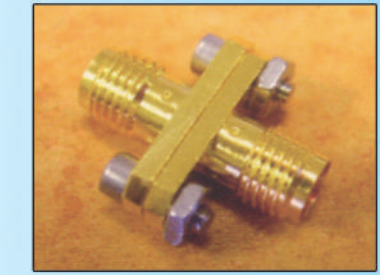
CERNEX, Inc. & CernexWave



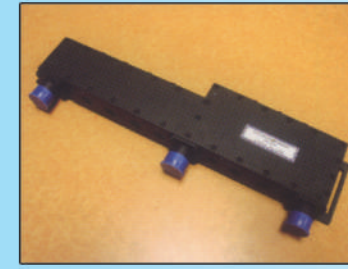
Coaxial Tubular Products



DC-45GHz Var. Attenuator



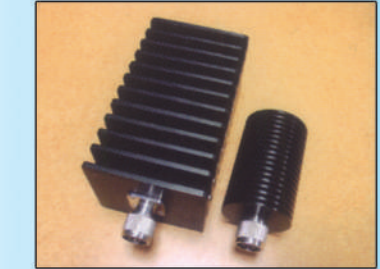
DC-Block



CDMA Power Divider



Coaxial PIN Switches



Coaxial Loads



Connectors



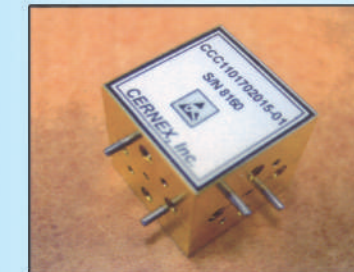
Frequency Combiner



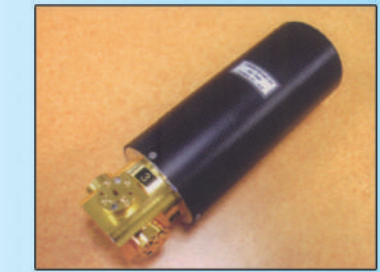
Gain Modules



Power Supply-Rack



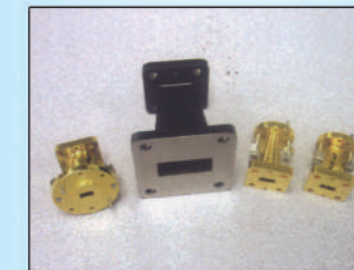
WR6 Crossguide Coupler



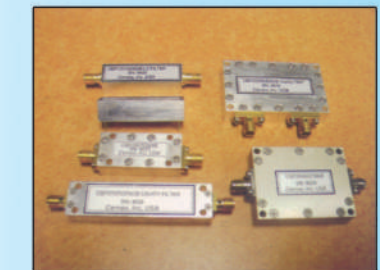
WR15 Electro-Mech Switch



WCDMA Diplexer

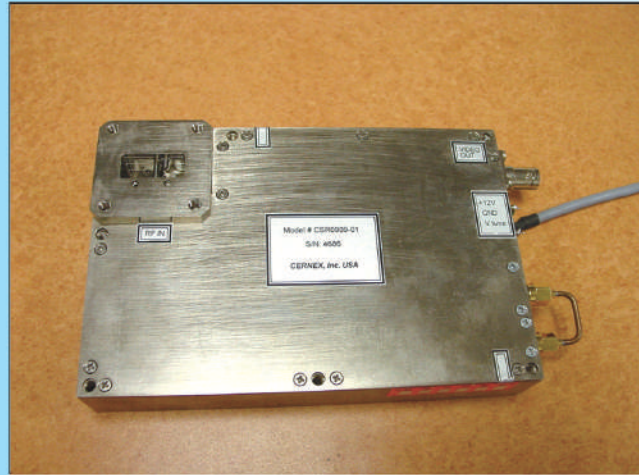


Tapered Mode Transitions

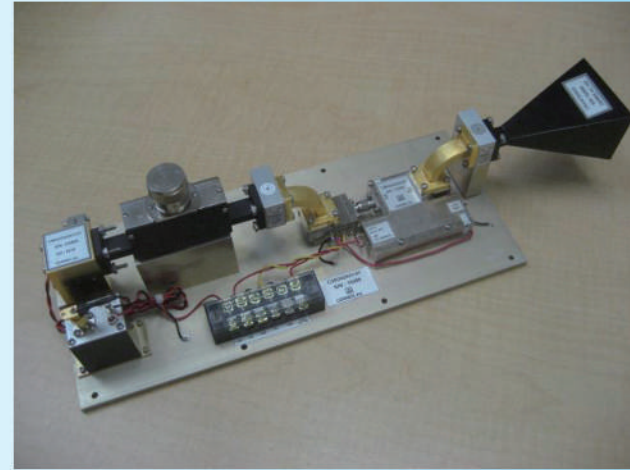


Various Filters

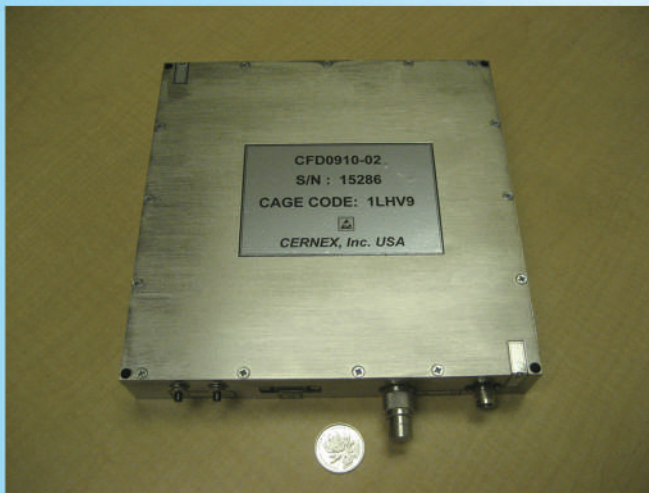
CERNEX, Inc. & CernexWave



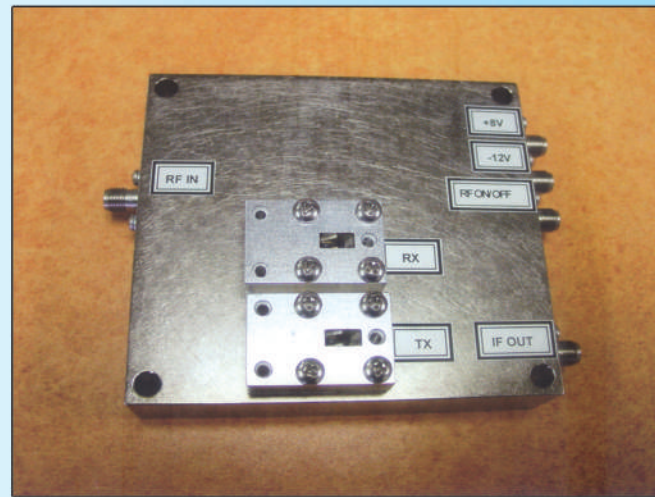
X-band Receiver



WR42 Osc. Amp Sub-system



Detector Sub-system



KA-band Transceiver

CERNEX, Inc. & CernexWave



AMPLIFIERS, ANTENNAS, MULTIPLIERS,
 SOURCES DETECTORS, SWITCHES,
 MIXERS, WAVEGUIDE PRODUCTS,
 MILLIMETER-WAVE COMPONENTS,
 FERRITE PRODUCTS AND SUB-SYSTEMS