

INTRODUCTION:

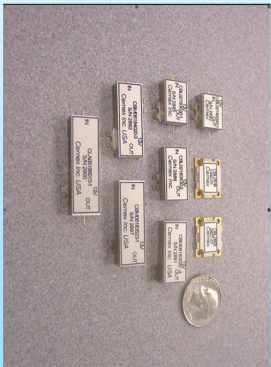
Cernex, Inc. was founded in 1988 and Cernexwave was founded in 2011 as a sister company to Cernex. The Cernex and Cernexwave management team consists of senior design engineers, sales managers and marketing staff with more than 500 total years of experience.

Cernex and Cernexwave design and produce high-performance, high-quality, reliable devices up to 1000 GHz. Our lineup consists of active and passive advanced thin-film hybrid, MMIC, discrete microwave/millimeter-wave components, waveguide products, ferrite products, antennas, subsystems, and countless other modules for controlling RF signals.

We participate in many commercial and military markets, including wireless telecommunication, aerospace, defense, and fiber optic communication.

Cernex and Cernexwave have developed and implemented a Quality Business Management System that documents processes associated with the design, development, manufacturing and sale of our products and services. We adhere to the international standards of AS9100D.2016 and ISO 9001:2015 with no exclusions taken.

Our goal is to consistently provide exceptional customer service and exceed the requirements of all projects. At Cernex and Cernexwave, we believe that strong quality management drives strong business results.



NOMENCLATURE

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 | CFM |
| Extenders | CNE |

Full Band Frequency Extenders

CFE

FREQUENCY DIVIDERS

CDV

FREQUENCY COMBINERS

CCF

FREQUENCY CONVERTERS

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

ANTENNAS

| | |
|-----------------------------------|------|
| Rectangular Gain Horn | CRA |
| Double-Ridged Horn Antenna | CRAD |
| Circular Gain Horn | CCA |
| Microstrip Antenna | CMA |
| Planar Antenna | CPA |
| Wide Angle Scalar Feed Horn | CWA |
| Scalar Feed Horn | CFH |
| Orthonode Transducer | COT |
| Horn Lens Antennas | CHA |
| Prime Focus Parabolic Antennas | CPF |
| Casserain 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 |
| Cosecant Square Antenna | COSA |

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

| | |
|---|-----|
| Differential ϕ -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 | CDD |
| Full Band Ferraday Isolators | CFE |
| 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 | CMI |
| Microstrip Circulators | CCM |
| Microstrip isolators(SMT) | CCMS |
| Microstrip Circulators(SMT) | CCMS |
| S.M. Isolators/Circulators | CSI/CSC |

FILTERS & DIPLEXERS

| | |
|-----------------|-----|
| Lowpass | CLF |
| Bandpass | CBF |
| Highpass | CHF |
| Image Rejection | CIJ |

Diplexers
 Triplexers
 Switch Filter Banks
 Notch Filters

Waveguide Twist
 Waveguide E/H Bends 90°
 Waveguide E/H Bends(Block)
 Waveguide Short
 Adjustable Waveguide Short
 Rotary Joint

CTS
 CWB
 CWBB
 CSWB
 CAS
 CRJ
 CMF
 CDM
 CHT
 CTE
 CHR
 CBH
 CCS
 CWR
 CFT
 CFW
 CFWS

OSCILLATORS & NOISE SOURCES

Mech. Tuned Gunn Osc.
 Varactor Tuned Gunn Osc.
 Bias Tuned Gunn Osc.
 DRO
 PLO
 VCO
 Full Band Noise Source
 Full Band Noise Figure and
 Gain Test Extenders
 Wide Tuning Bandwidth
 Mechanical Gunn Osc.
 Low Cost Gunn Osc.

Frequency Meters
 Direct Reading Freq. Meters
 Hybrid Tees
 E & H Plane Series Tees
 Single Hybrid Ring
 E/H Plane Tuners
 90 degree Hybrid
 Circular Waveguide Section
 3dB Short Slot Hybrid
 Waveguide Flanges
 Flexible/Twistable Waveguide
 Flexible Waveguide
 Seamless Waveguide
 Power Sampler
 Waveguide Tuner
 Waveguide Combiner
 Elliptic Waveguide
 Pressure Windows
 Power Sensor
 Waveguide Open
 Waveguide Short
 Pressure Inlet
 Waveguide Probe

CMG
 CVG
 CBG
 CDO
 CPO
 CVO
 CNS
 CNF
 CMGW
 CMGL

SWITCHES

SPST Switch
 SPDT Switch
 SP4T Switch
 SP4T Switch
 Rotary Switch
 Two Position Solenoid Switch
 Mechanical Switch (Electro-Mech.)
 Polarization Switches
 Mechanical Waveguide Switches
 Coaxial Switches

C1T
 C2T
 C3T
 C4T
 CRT
 CTP
 CSM
 CZS
 CWS
 CTC

PHASE SHIFTERS

Phase Shifters
 Motorized Rotary Vane Phase Shifter
 Ferrite Phase Shifters
 Micrometer Cal. Phase Shifters
 Direct Reading Phase Shifters
 Digital Phase Shifters
 Differential Phase Shifters

CPS
 CMP
 CFS
 CMS
 CDS
 CSD
 CDD

TRANSITION & ADAPTERS

Waveguide to Waveguide
 Waveguide to Coax
 Rectangular to Circular
 Tapered Mode
 Flange Adapter
 Coaxial Adapters

Waveguide to Waveguide
 Waveguide to Coax
 Rectangular to Circular
 Tapered Mode
 Phase Detectors
 Subharmonic Pumped Mixers

CWW
 CWK
 CRC
 CTM
 CWF
 CSHM

WAVEGUIDE PRODUCTS

Waveguide Section
 Waveguide Section(Block)
 Circular Waveguide Section

Fixed Setting Attenuators
 Level Set Attenuators
 Micrometer Cal. Attenuators

CSS
 CSSB
 CSSB
 CSSC

ATTENUATORS

Fixed Setting Attenuators
 Level Set Attenuators
 Micrometer Cal. Attenuators

CEA
 CSA
 CMC

ATTENUATORS

Direct Reading Precision Attenuator
 Pin Diode Attenuator
 Programmable Rotary Attenuator
 Voltage Controlled Attenuators
 Digital Controlled Attenuators
 Step Attenuators
 Chip Power Attenuators
 Flange Power Attenuators
 Rotary Step Attenuators
 Push Button Step Attenuators
 Toggle Switch Step Attenuators

POWER SUPPLY
 Rack Mount Power Supply
 BIAS TEE
 LIMITER
 POWER COMBINER/DIVIDER
 SURFACE MOUNT POWER DIVIDER
 CABLE ASSEMBLIES
 VOLTAGE REGULATORS
 EQUALIZER
 SYNTHESIZER
 PIN DIODE MODULATOR
 TEST KITS
 CALIBRATION KITS
 VNA TEST CABLES
 MINI JACKS
 RECEIVER SUB-ASSEMBLIES
 AND MODULES
 TRANSMITTER SUB-ASSEMBLIES
 AND MODULES
 TRANSCIEVER SUB-ASSEMBLIES
 AND MODULES
 RF FEEDTHRU

CDA
 CPD
 CRV
 CVA
 CAD
 CAT
 CFAS
 CFAF
 CATR
 CATP
 CATT

RESISTORS

Chip Power Resistors
 Flange Power Resistors

CRS
 CRF

DETECTORS

Finline Detectors
 Balanced Phase Detector
 Amplitude Detector

CFD
 CBD
 CMD

SUBSYSTEMS

Subsystems

CSR

RECEIVER SUB-ASSEMBLIES
 AND MODULES
 TRANSMITTER SUB-ASSEMBLIES
 AND MODULES
 TRANSCIEVER SUB-ASSEMBLIES
 AND MODULES
 RF FEEDTHRU

CRX
 CMJ
 CCK
 CVNA
 CPM
 CPT
 CCK
 CVA
 CVM
 CRX
 CTX
 CTR
 CFE

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 55dBm.
 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; 71-76GHz; 81-86GHz;
 92-96GHz

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:

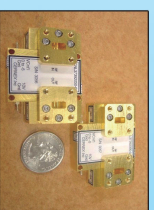
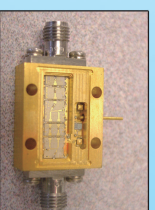
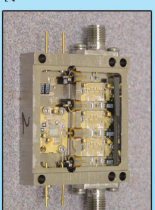
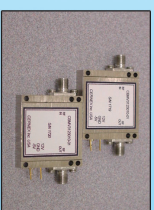
0.001-96GHz With Output Power Up To 33dBm At Q Band.

NARROWBAND HIGH POWER AMPLIFIERS:

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

LIMITING AMPLIFIERS:

0.001-110GHz (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 - 100W); 0.8-2.5GHz (20W - 500W);
 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-100GHz; 30KHz-12GHz; 30KHz-14GHz; 50KHz-18GHz; 50KHz-20GHz
 75KHz-45GHz; 75KHz-50GHz; 75KHz-78GHz

DESK TOP MULTIPLEXERS (12 INCHES):

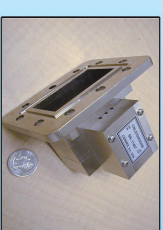
INPUT FREQUENCY: 10MHz
 OUTPUT FREQUENCIES: 5GHz; 10GHz; 20GHz & 40GHz.

DESK TOP PRESCALARS (12 INCHES):

INPUT FREQUENCY: As Low As 0.01GHz
 OUTPUT FREQUENCIES: As High As 110GHz.

SATCOM WAVEGUIDE LNAs:

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



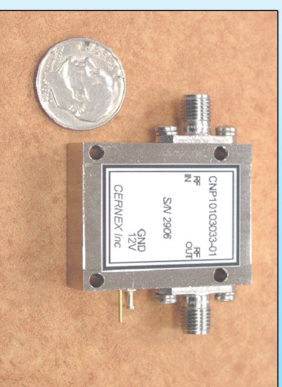
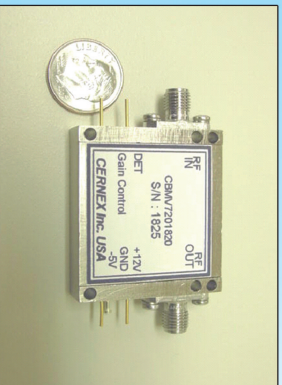
AMPLIFIERS FOR OPTICAL FIBER COMMUNICATIONS:

Broadband Modulator Driver Amplifiers (NRZ) for Optical Fiber Communications Up To 40Gb/s With Output Voltage of 3-10 Vp-p.

30KHz-10GHz, 30KHz-120GHz, 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:

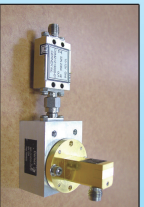
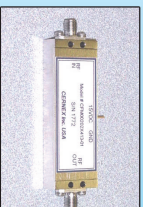
With Input Frequency As Low As 0.01GHz, And Output Frequency As High As 500GHz.

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:

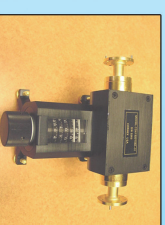
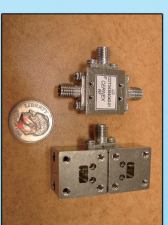
Mechanical Waveguide Switches, Electromechanical Waveguide Switches, PIN Switches (SP1T To SP16T, Full-band Switches).

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 & DIPELEXERS UP TO 160GHZ:

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



CERNEX, Inc. & CemexWave

BIAS TEES:

Waveguide & Coaxial Bias Tees Up To 110GHz.

WAVEGUIDE & COAXIAL 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 COAXIAL 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.

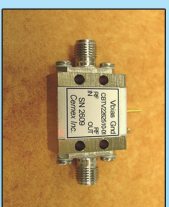
TRANSITIONS / ADAPTERS UP TO 110GHz:

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.



CERNEX, Inc. & CemexWave

DETECTORS UP TO 1000GHz:

Finite Detectors, Balance Phase Detectors & BroadBand Detectors.

ANTENNA PRODUCTS UP TO 1000GHz:

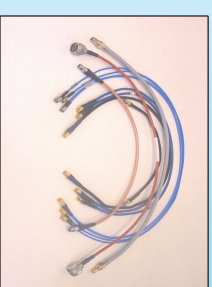
Horn Lens Antennas, Standard Gain Horn Antennas, Scalar & Wide Angle Scalar Feed Horn Antennas, Cassegrain Reflector Antennas, Prime Focus Antennas, Orthomode Transducers, Linear To Circular Fixed And Switchable Polarizers, Parabolic Grid Antennas, GPS Antennas & Flat Panel Antennas.

ASSEMBLIES AND SUBSYSTEMS:

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

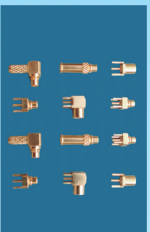
SYSTEMS PRODUCTS CAPABILITY:

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.

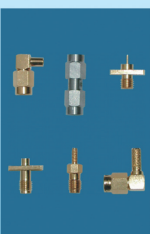
CONNECTORS



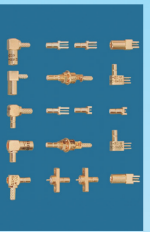
MMCX(DC-6GHz)



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)



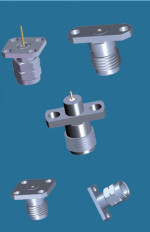
SMA(DC-27GHz)



N(DC-18GHz)



2.92mm(DC-40GHz)



2.4mm(DC-50GHz)



1.85mm(DC-65GHz)



1mm(DC-110GHz)

ADAPTORS

IN SERIES ADAPTORS:

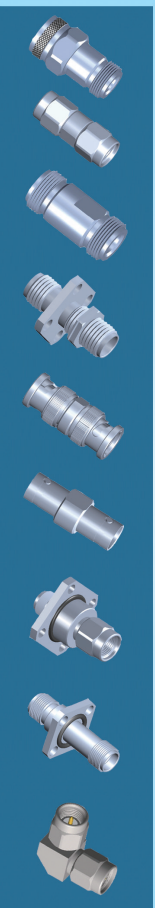
- | | |
|--------------------------------|----------------------------------|
| TNC-TNC adaptors(DC~11GHz) | TNCA-TNCA adaptors(DC~18GHz) |
| BNC-BNC adaptors(DC~8GHz) | N-N adaptors(DC~18GHz) |
| SMA-SMA adaptors (DC~27GHz) | SSMA-SSMA adaptors(DC~40GHz) |
| 3.5mm-3.5mm adaptors(DC~33GHz) | 2.92mm-2.92mm adaptors(DC~40GHz) |
| 2.4mm-2.4mm adaptors(DC~50GHz) | 1.85mm-1.85mm adaptors(DC~65GHz) |
| 1mm-1mm adaptors(DC~110GHz) | |

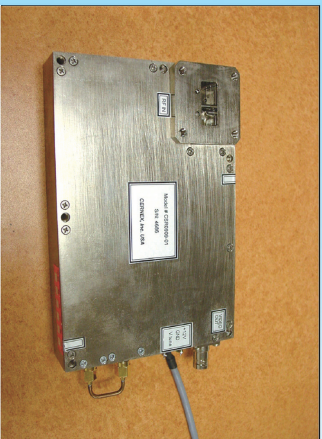
BETWEEN SERIES ADAPTORS:

- | | | |
|-----------------|------------------|----------------|
| APC-7 to N | 3.5mm to APC-7 | L16 to N |
| SMA to L16 | 3.5mm to N | 2.92mm to N |
| 2.4mm to N | N to BNC | N to TNC |
| N to TNCA | SMA to N | 2.9mm to 3.5mm |
| 2.4mm to 3.5mm | 1.85mm to 3.5mm | SMA to 3.5mm |
| 2.4mm to 2.92mm | 1.85mm to 2.92mm | 2.92mm to SMA |
| 2.4mm to SMA | 1.85mm to 2.4mm | 2.92mm to SSMA |
| 2.4mm to SSMA | SMA to BNC | SMA to TNC |
| SMA to TNCA | SSMA to SMA | 1mm to 1.85mm |

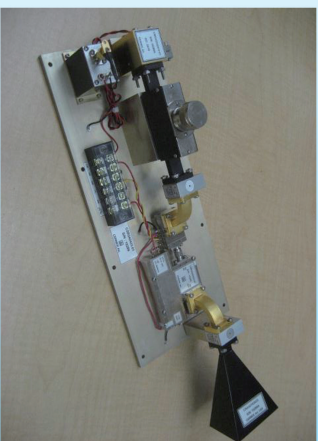
RIGHT ANGLE ADAPTORS:

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





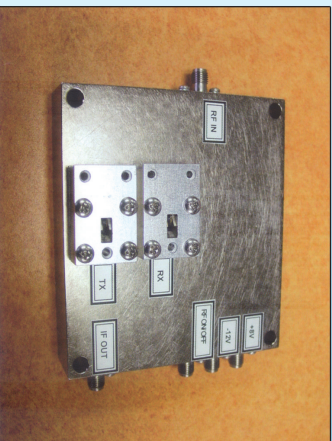
X-band Receiver



WR42 Osc. Amp Sub-system



Detector Sub-system



KA-band Transceiver



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