



## Electronic Products & Components

- RF & Microwave Components and Sub-Systems
- High-Reliability Electronic Components
- RF & Microwave Test Equipment
- Design & Manufacture

[www.apctech.com](http://www.apctech.com)

# RF & Microwave Components And Sub-Systems



## Adsantec

- Very high-speed mixed signal ICs to 50GHz/50Gbps
- Multiplexers and demultiplexers
- Clock/data phase shifters and variable delay lines
- Selectors and switches, analogue to digital converters
- Linear, limiting and transimpedance amplifiers (TIAs)
- Track and hold amplifiers, fir filters
- High speed logic, clock processors and signal generators
- PRBS pulse generators from 0.1 to 40Gbps



## Alaris Antennas

- Specialised antenna solutions and systems from 9kHz to 18GHz
- Direction finding (DF) with supporting RF electronics
- Monitoring
- High power transmit
- Jamming
- Counter RCIED
- Counter UAS
- Communications
- Multi-channel antenna switching units



## AMCOM

- GaN and GaAs MESFET and pHEMT power devices to 10GHz
- Broadband MMICs and modules to 10GHz/100W
- MMIC switches and digital attenuators to 14GHz
- Custom design of RF front end components and modules



## Arance Electronics

- High performance test cables and adaptors for defence, communications and research applications to 67GHz
- VNA test cables to 67GHz
- 50Ω low loss flexible, armoured, semi-flexible and semi-rigid cable assemblies
- NMD 3.5, 2.92, 2.4 and 1.85mm test port adaptors
- Precision mechanical calibration kits and torque wrenches



## Bird Technologies

- Terminations and loads from 2W to 80kW including convection and conduction cooled models to 18GHz
- High power, oil, water, and air-cooled loads for digital broadcast applications
- Attenuators from 2W to 4kW
- Splitters, couplers, and signal samplers
- Coaxial adaptors including EIA rigid-line adaptors



## CAES

- Phase locked frequency sources to 50GHz
- Free running dielectric frequency sources
- Direct and indirect synthesisers
- Fast switching, broad bandwidths and miniature designs
- Coaxial and crystal oscillators up to 50GHz
- Block up/downconverter modules for satcom applications



## Ciao Wireless

- Amplifiers and sub-assemblies from 1MHz to 52GHz
- Low noise, ultra-broadband and multi-octave amplifiers
- Limiting and Ka band amplifiers
- Radial power combiners and dividers to 30GHz
- Space qualified filters, multiplexers, hybrids, and couplers to 65GHz



## Diamond Antenna and Microwave

- Coaxial and waveguide rotary joints for commercial, satcom, ATC, defence, and space qualified applications
- Single and multichannel versions to 50GHz
- I, L and U style
- Roll-Rings®, slip-ring assemblies and roll-blocks
- Rotary joint repair and refurbishment available



## Erzia Technologies

- Microwave and millimeter wave modules up to 110GHz for EW, radar, satcom, scientific, telecom, defence, and space applications
- Space and MIL-STD qualified products
- Solid state high power and low noise amplifiers
- Suspended substrate filters
- Integrated microwave assemblies (IMAs)
- Up-down converters, beamformers, RF front ends, switched filter banks and switching matrices



## Farran

- Millimeter wave components and systems to 500GHz
- FMCW radar front ends (77GHz)
- Passive imaging front ends (94, 183, 220 and 300GHz)
- LNAs, medium and high-power amplifiers (40 to 120GHz)
- Frequency multipliers (20 to 325GHz)
- Mixers (18 to 500GHz)



## Focus Microwaves

- System accessories including Bias Tees, Bi-directional couplers, phase stable cables, TRL kits, RF test fixtures, phase modulators and noise management systems



## GotMIC

- High frequency MMIC chips from 32 to 170GHz
- MMIC receivers, transmitters, and front-end IC solutions to 120GHz
- MMIC amplifiers, mixers, and switches
- MMIC frequency multipliers and detectors
- Evaluation boards available



## IF Engineering

- Low frequency, surface mount and coaxial components from 100kHz to 6GHz
- Power dividers and combiners (2 way to 32 way)
- Directional couplers and 90° quad hybrids
- Vector modulators (I/Q)
- Phase comparators and I/Q demodulators
- Multi-couplers and distribution amplifiers



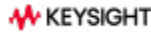
## Impulse Technologies

- RF, microwave and millimeter wave electronic components
- Manual coaxial 30/60/180 degree phase shifters to 40GHz
- Manual continuously variable attenuators to 26.6GHz
- High power directional couplers and ferrites
- WG-coaxial adaptors and terminations
- Standard gain horn antennas



### Innovative Power Products

- Broadband passive RF components from DC to 12GHz
- Baluns 20 to 2,500MHz, up to 100W
- 90-degree hybrid couplers 20MHz to 12GHz, up to 1.5kW
- Dividers/combiners 20MHz to 6GHz, up to 2kW
- Directional couplers 20MHz to 6GHz, up to 2kW, SMD, drop-in, tab and connectorised
- RF resistors DC to 6GHz, up to 800W, low capacitance, flanged and flangeless
- Terminations DC to 6GHz, up to 800W, connectorised, flanged and flangeless



### Keysight Technologies

- High reliability electromechanical coaxial switches to 40GHz, providing absolute measurement certainty and long life to 5,000,000 cycles
- Adaptors, amplifiers, and attenuators
- DC blocks and diode detectors
- Directional couplers and bridges
- Power limiters, dividers, and splitters
- Solid state PIN switches



### Koaxis

- RF coaxial cable assemblies for defence, tele communications, and cable TV applications to 60GHz
- 50Ω, 75Ω (CATV), hand-formable, semi-rigid, flexible RG assemblies and VNA cables
- K-Flex™.047, .086, .120 and .141 flexible alternatives to semi-rigid
- Low loss, phase-tracking, phase and delay matched cables
- 1.85mm, 2.4mm, 2.92mm, MCX, MMCX, MMPX, Type N, SMA, SMP, SMPM, SSMA, SSMB, SSMC, TNC, VITA 67 and size 8 connector options



### Integra Technologies

- High power pulsed RF power transistors to 10GHz for radar and avionics applications
- High voltage GaN solutions with power densities of up to 20W/mm
- (GaN/SiC) HEMT RF power transistor devices from UHF through C-band microwave frequencies
- Pre-matched, Si-Bipolar, Si-LDMOS and Si-VDMOS RF power transistors up to 3.5GHz with output power requirements of up to 1500W
- Fully-matched (50-Ohm), GaN-on-SiC and LDMOS RF power transistors for S-, C-, and X-band Radar Systems
- Standard and custom RF power amplifier pallets for next-gen radar systems



### KVG Quartz Crystal Technology

- Standard and precision ceramic crystals to 300MHz
- Crystal oscillators: XOs, VCXOs, TCXOs and OCXOs to 2.5GHz
- Ultra-low phase noise with < 180dBc/Hz noise floor
- Ultra-low g-sensitivity OCXOs and TCXOs
- Crystal filters: MCF, discrete and discriminators to 200MHz
- ESCC qualified parts list for space applications
- Custom quartz crystal products available



### JQL Technologies

- High-performance RF microwave components for DAS, radar, radio links, satcom and wireless applications
- Filters, isolators and circulators
- Directional couplers and power dividers/combiners
- Hybrids and terminations to 40GHz



### Magvention

- Electromechanical coaxial switches from DC to 67GHz
- SPDT, transfer and multi-position SP3T to SP12T switches
- SMA, K-Type, N-Type, 2.4mm, TNC and SC connector options
- Latching, failsafe, TTL and low PIM available



### Junkosha

- High performance cable assemblies from 26.5 to 120GHz
- MWX0: High phase stability to 120GHz
- MWX1: Wide temp range and high durability to 26.5GHz
- MWX2: Flexible cables for measurement instruments
- MWX3: High phase stability over temp to 40GHz
- MWX4: Formable and flexible, low insertion loss cable assemblies to 67GHz
- MWX5: Formable semi-flex cable for to 18GHz
- MWX6 Series: High precision skew match cable assemblies to 67GHz
- MWX8 Series: VNA test assemblies to 50GHz
- Aerospace and space qualified cables available



### Marki Microwave

- Passive and active components to 140GHz
- LO drive amplifiers, gain blocks, LNAs to 100GHz
- Attenuators, die, SMT and precision to 110GHz
- Baluns, bias tees, DC blocks to 67GHz
- Couplers and 3dB quad hybrids to 110GHz
- Filters: Bandpass, Lowpass and Highpass
- Positive gain slope equalizers to 70GHz
- Diplexers to 20GHz and limiters to 70GHz
- MMIC double/triple balanced mixers, bare die and modules to 130GHz
- T3 high linearity mixers to 40GHz
- I/Q mixers to 120GHz, integrated drive
- Active and passive multipliers to 125GHz
- NLTL comb generators to 85GHz
- Resistive/Wilkinson power dividers to 110GHz
- Waveguide components to 140GHz



### KDS

- Miniature crystal resonators to 80MHz
- Miniature crystal oscillators to 212.5MHz
- Arkh.3G miniature crystal technology
- XOs, VCXOs, TCXOs and OCXOs
- Miniature monolithic crystal filters to 160MHz
- Optical quartz products
- Automotive crystal products to 64MHz

# RF & Microwave Components And Sub-Systems cont.



## Megaphase

- High-performance, flexible RF cables for space and defence
- Communications and research applications to 110GHz
- Low-loss flexible, armoured, semi-flexible and semi-rigid cable assemblies
- VNA test port extension cables to 67GHz
- NMD ruggedised test port connectors



## Micro Lambda Wireless

- YIG tuned products from 500MHz to 50GHz
- YIG oscillators
- YIG retrofits and equivalents for Avantek™
- Miniature YIG oscillators including surface mount and T-08
- YIG bandpass and band reject filters
- Frequency synthesisers and multipliers
- Bench test boxes, YIG drivers and controllers
- Harmonic generators and integrated products



## Microwave Engineering Corp

- Millimeter waveguide components and systems operating up to 40GHz
- Antennas: horn, spiral, omni, reflector, patch array and slot
- Components: filters, terminations, couplers and attenuators
- Waveguide: rectangular, double ridge and flexible



## Millimeter Wave Products

- Millimeter wave products, microwave technology components and assemblies to 325GHz
- Waveguide transitions and adaptors
- Waveguide to coaxial adaptors
- Flexible, square, and double ridge waveguide
- Straights, E and H plane bends and twists
- Ferrite components
- Antennas, couplers, filters, loads and terminations
- Amplifiers, attenuators, detectors, mixers, and switches



## Quantic Croven

- Precision quartz crystal resonators
- AT, FC, IT and SC-Cut crystals from 1 to 360MHz
- Low phase noise and low ageing
- Cold weld and resistance weld holders
- QPL approved since 1967 per MIL-PRF-3098H
- Rapid prototyping capability
- Extensive inventory of samples



## Quantic TRM

- Power dividers/combiners 2 to 24 way covering DC to 26.5GHz in various industry packages
- Directional couplers, 3 and 4 port to 26.5GHz, connectorised and flatpack packages
- Hybrids high power cellular, PCS and dual band models available in industry standard packages
- Space qualified and custom solutions available



## Quasar Microwave Technology

- Passive waveguide components and sub-systems to 40GHz
- WG10/WR284 through to WG22/WR28 inclusive
- Standard rigid, double rigid and flexible waveguide components and assemblies
- High power loads and fixed/variable attenuators
- Terminations, shorts, crossguide and loop couplers
- WG to coaxial adaptors, (N, SMA, K, APC7, TNC, 7-16)
- Horn antennas from WR975 to WR28
- Filters and diplexers, switching networks and OMTs
- Waveguide hardware and calibration kits



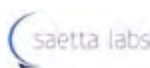
## RFbeam Microwave

- Radar sensors/Doppler devices, transceivers, and systems to 86GHz for range and distance detection
- Doppler sensors for indoor automation, movement detection and speed measurement
- Applications including automatic light activation, traffic movement/flow and security systems
- Analogue and digital processing output versions
- Doppler transceivers and simulators
- Radar signal processors, test, and measurement systems
- Antennas and custom designs available



## RF Spin

- Broadband RF & Microwave antennas from kHz to 110GHz Horn & ridged antennas covering 0.7 to 110GHz
- Precision measurement antennas for EMC, R&D and Calibration (9kHz to 40GHz plus)
- Standard & custom designs available from RF to mmWave
- In-house design, manufacture & calibration



## Saetta Labs

- Sapphire loaded cavity (SLC) microwave oscillators
- Ultra high Q-factor and unparalleled low phase noise
- 7GHz, 8GHz, 10GHz and 10.24GHz versions
- Compact 4.24" x 6.25" x 3.15" package
- 12V/3.5A supply dropping to <1 amp at lab temperatures
- Radar, calibration, measurement and communications



## Safran

- High-end crystal, rubidium and integrated GPS/GNSS clocks and oscillators for telecom, defence, navigation, broadcast, instrumentation, and space applications
- SmartTiming+® disciplining with advanced holdover performance
- iSource+® range of crystal and rubidium sources for precise performance applications
- iSync+® range of synchronisation OCXO and rubidium oscillators and reference clocks



### Signal Microwave

- Precision millimetric connectors from 40 to 110GHz
- Edge launch connectors 1.0mm (110GHz), 1.85mm (67GHz), 2.4mm (50GHz) and 2.92mm (40GHz)
- Field replaceable connectors 2.92mm (40GHz)
- Vertical launch connectors 2.92mm (40GHz)
- Test boards for edge launch connectors (40 and 70GHz)
- Broadband test verification boards (40 and 70GHz)
- Adaptors 1.85mm (70GHz)



### TTM Technologies

- RF and speciality components, advanced technology and PCB fabrication solutions
- RF & microwave and signal integrity solutions
- Multi-chip modules (MCMs) and custom hybrid designs
- Custom integrated circuits (ICs)
- System integration, engineering and design



### Smiths Interconnect

- RF and microwave filters to 65GHz
- Cavity, ceramic, discrete, tubular, waveguide and thin film dielectric filters
- Duplexers/triplexers and manually tuneable filters
- Space qualified filters



### Vaunix Technology Corp

- Lab Brick™ RF and microwave test equipment to 40GHz
- Digital attenuators, signal generators and RF Switches SPDT, SP4T & SP8T to 40GHz
- Phase shifters to 12GHz, power dividers to 7.25GHz
- Custom matrix attenuators and handover test systems
- Portable USB-powered devices that are tough, versatile and affordable for the lab or in the field



### Sonoma Scientific

- Isolators, circulators, iso-adaptors, and hybrids from 40MHz to 40GHz with power handling to 4kW plus
- Surface mount, drop-in, microstrip, coaxial and waveguide
- Phase matched and low IM products
- Cellular, satcom, tetra, inmarsat, microwave radio, radar, and custom applications



### Winchester Interconnect

- Aerospace, defence and space qualified connectors and cables
- Standard and custom RF & microwave connectors, cables and interconnect solutions from DC to 110GHz and up to 50kW
- SMA, SMP, SMPM and FMA hermetic connectors as well as custom connectors and configurations
- Fiber optic connectors and cable assemblies
- RF & microwave tools



### Teletel

- Space domain hardware and software
- iSAFT data front ends/link analysers
- iSAFT power isolation/distribution units
- EGSE electrical ground support equipment
- Specialised spacecraft check-out systems
- Engineering support services (AIT/AIV etc...)



### Triad RF Systems

- Bi-directional amplifiers for high performance data and communications links
- Standard products from 20MHz to 8GHz
- Tx output powers of 2, 5, 10 or 20W
- GaN and LDMOS technologies as applicable
- Tx/Rx switching times < 1µ second typical
- Platforms include UAVs, UGVs and drones
- Dual and quad configurations for MIMO applications

## Electronic Products & Components | Systems & E-Mech | Test Solutions & EMC



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# High-Reliability Electronic Components



## 3D PLUS

- Space flight and harsh environment components and Systems in Packages (SiP)
- High density SRAM, SDRAM, DDR2, DDR3 and DDR4 memory stacks, DDR terminal regulators and DDR memory controller IP cores
- PROM, MRAM, NAND, NOR, RTIMS and MNEMOSYNE memory ICs
- SPI, QSPI, OSPI FPGA serial boot memory for processors and FPGAs
- FUSIO SRAM based FPGA inclusive of boot memory and NV memory/SDRAM
- COMBO boot and scrub solutions for SRAM FPGAs
- Camera head and lens options for space 4M, 12M, SWIR
- POL, LCR and SWITCH current limiters
- LVDS, LVT logic 4, 8, 16bit and majority voter solutions
- High density NAND/NOR/DDR3/DDR4 memories for military avionic and high temperature applications



## Advanced Circuit Boards

- Bare PCB, flex and flex rigid military, space, aerospace, high temperature or large test PCBs
- High layer count complex construction
- Space level ESCC or IPC level 3
- NADCAP certification for civil avionics
- High speed and RF boards
- Quick turn options available



## Aitech Systems

- High performance processing and connectivity solutions for use in defence, aerospace and space flight applications
- Small form factor standalone SWaP-optimised Ethernet switches and AI supercomputers
- Advanced Intel and PowerPC SBCs and NVIDIA based GPGPU Boards
- Rugged, open architecture VME, VPX and high-speed serial fabric-based computers and subsystems



## Astrodyne

- High power, high reliability industrial power supplies
- Liquablade 1U liquid cooled 3ph AC-DC to 16.5kW
- Mercuryflex 2U fan cooled AC 1ph/3ph or DC-DC 3.8kW
- Hermesflex 1U 2.2kW fan cooled AC-DC
- ESPM sealed 2.5kW AC-DC 1ph
- TEMPEST/MIL COTS filters
- EMC filters to MIL-STD 461



## Cissoid

- Power control modules and components for industrial and automotive inverter and E-Drive systems
- SiC inverter modules 3 phase 1200V to 300-450A
- SiC intelligent power modules
- Half bridge, high voltage gate driver boards
- Reference designs for motor control



## Corning

- Miniature RF, compact, low weight coax connector systems for board-to-board and module-to-module connections to 65GHz
- Down to 3.098mm board-to-board standoff
- Push-on bullets GPO, GPPO, G3PO, G4PO
- Hermetic, edge mount and surface mount options
- Multiway PCB and cable block solutions



## Custom Electronics

- High voltage mica capacitors, pulse, >1kV, high temperature stability and durable
- High temperature capacitors to 360°C
- Single and multi-layer bus bars
- Portable battery storage systems to 5kW



## DDC-I

- Safety critical real-time embedded operating systems
- Deos™ - a time and space partitioned, multi-core enabled, RTOS verified to DO-178C/ED-12C DAL A
- Multi-language compilers
- Integrated development environments
- Run-time systems
- Custom software development services and legacy software system modernisation solutions



## EMI Solutions

- EMI filter solutions and cable assemblies for defence and aerospace applications
- Filtered connectors, circular, D-Sub, Micro D, ARINC
- EMI flex filter inserts to adapt non-filtered connectors
- Custom EMI filter solutions
- EMI bulkhead feed thru filters
- Quick turn filtered connector capability



## Enercon Technologies Europe

- MIL-aero and naval power supply solutions 50W to high power, MOTS or customisable
- Small, rugged Ethernet products for man-portable, UAV and field systems, embedded cards
- Military customisable solutions
- Connectorised small form factor AC-DC, DC-DC, AC & DC-DC inverters
- Generator power controls for UAVs to 2kW
- VPX 1U, 3U power cards, managed Ethernet cards
- Standard and customisable power distribution units
- Naval UPS systems AC-AC 1ph, 3ph 115V, 230V, 1kW+



## Holt Integrated Circuits Inc

- Arinc 429 databus and MIL-STD 1553, MIL-STD 1760, Arinc 825, and RS485/422 ICs with integrated lightning protection
- Arinc 429 bus transceivers single/multi channel and fully integrated protocol with SPI or parallel interface
- MIL-STD 1553/1760 bus transceivers and fully integrated protocol SoC with transformers
- Rad tolerant MIL-STD 1553 transceivers
- Arinc 825 CANBUS and RS 422 RS485 solutions
- Discrete to Digital ICs and power control ICs
- Galvanic isolated D2D and Arinc 429 ICs
- Custom avionics ASICs
- Avionics Ethernet PHYs



## Meteolabor

- HEMP/NEMP protection for fixed or mobile applications
- Power, data lines, Ethernet, telephone and USB to threat level MIL-STD 188-125 and lightning protection IEC 61000-4-5
- Power protection AC or DC 24, 30, 48V, high power levels
- Customisable armoured vehicular power protection inlet and lightning solutions
- Custom vehicular solutions



### Teledyne (incl. Micropac)

- RF products: high-reliability RF signal-chain components for aerospace and defence applications
- Power products: transistors (GaN HEMT & e-HEMPT); gate drivers and power modules
- Signal chain products: linear and logic, memory products, legacy QPL and obsolescence solutions
- Optoelectronics: optocouplers (levels commercial to Rad Assured) and fibre optic transceivers
- Microelectronics: power management (SSR & SSPCs incl. rad tolerant) & DC-DC converters (3U VPX PSC for LEO satellite applications)
- Sensors and displays: optical & Hall effect sensors plus high-intensity LEDs (MIL QPL, space illumination, custom assemblies)



### Modular Devices Inc

- Rad tolerant, space-grade DC-DC converter and POL 1W to 1kW power rating
- Hybrid chip and wire/GaN FET technology
- Integrated MIL-STD 461 filters
- PCB mount or connectorised
- Solid state power converters and current limiters
- High temperature DC-DC converters



### Neuro Logic Systems

- Rugged displays and high vibration resistant computers for military, avionics, ground mobile and marine applications
- Rack, panel and door mount displays with touch screen and NVIS options 8" to 30" and 60" displays with up to 4K/2K resolution
- Pull out and rackslide keyboard video mouse
- Monitors 1U-3U to 19" /20.1" display, single to 3 head in 2U form



### Nicomatic

- Standard COTS rugged rectangular connectors for MIL-aero, land and space applications



### OPT Hellas

- Crystal filters for military radio applications 10 to 45MHz
- LC, notch, highpass and notch and lowpass filters
- Cavity filters bandpass 480-960MHz, duplexer filters 66MHz to 960MHz



### Pyramid Semiconductor

- MIL QPL manufacturer with a catalogue of legacy memories, logic and processors
- SRAM 1K, 4K, 16K, 64K, 72K, 256K, 1M and 4M SRAM
- Industrial SRAM 64bit to 4Mbit
- EEPROM 16k, 64k, 256k and 1Mbit in DIP, SOJ and SOIC
- Logic FCT and FCT-T 28 transceivers/octals and logic
- Customisable pinouts and other legacy solutions



### State of the Art Inc

- MIL QPL certified resistor manufacturer
- MIL PRF-55342, MIL-PRF914 and MIL-PRF 32159 for avionics, military and space applications
- Surface mount chip resistors, high power, high voltage and high frequency (flip chip and wrap around)
- Zero ohm jumpers for space applications
- Resistor arrays
- 4 terminal resistors



### TRAD

- Radiation test specialists for space, industrial, medical, nuclear and avionics markets
- FASTRAD radiation simulation software for space
- RayXpert radiation simulation software for industrial applications, helps to calculate shielding
- R2COTS automotive grade components with guaranteed TiD specification for New Space
- Radiation test services TiD and SEU/SEFI/SEL/SEGR/SET



### Vanguard Electronics

- MIL QPL certified supplier of magnetics for defence, space, avionics, medical and high temperature
- RF toroidal/air core inductors, chip inductors and RF beads
- Power common mode chokes and diff mode inductors
- Flyback transformers, gate drive transformers, high current chip and toroidal inductors
- Planar inductors, shielded power inductors
- Signal isolation transformers, pulse and high voltage pulse transformers



### Virtium

- Industrial rugged solid state memory solutions
- -40 to 105°C, SATA, NVMe, SFF and memory modules for military applications
- SSD from 1.92TB to 30TB
- 2.5" SATA 2.5" 1.92 to 15TB, 2.5SATA to 6GBs
- U.2 7mm to 8TB and M.2 SATA to 640GB
- mSATA, NVMe, eMMC, NVMe, DIMM, SDRAM and DDR to DDR5
- EMMC 5.1 BGA MLC and pSLC to 64GB
- Space COTS+



### Voltage Multipliers Inc

- High voltage and MIL QPL diodes and multipliers from 2kV to 20kV, small signal, current to 2-3 amps
- High voltage optocouplers and optodiodes with up to 25kV isolation
- ENIG and PVM miniature SMD series multipliers 3kV to 7kV 50µA and 14 stages
- XRS and CRT power supplies to 50kV 200 µA
- LPS and LP6 power supplies 8kV to 10kV, 6W to 11W



### Vorago Technologies

- Rad hard microcontrollers for space, avionics and oil & gas
- M0/M4 Arm® cortex® based microcontrollers with Ethernet, ADC and DAC options and NV boot memory
- Ceramic and plastic package options
- Rad tolerant Arm® A72 cortex® processor with GPU
- High temperature 175°C - 200°C



### Xsis Electronics Inc

- MIL QPL manufacturer of high reliability hybrid crystal oscillators and crystal units
- Space-qualified, 100krad GEO and 30krad LEO total dose radiation oscillators
- TTL 5V and LVDS 3.3V, 2.5V to 200MHz
- AC/MOS/HCMOS 1.8V, 2.5V, 3.3V and 5V to 120MHz
- Multiple SMD and DIL pin options
- HC49 QPL crystals MIL PRF 3098
- DIP, LCC and SMD packaged high temperature oscillators

# RF & Microwave Test Equipment



## Aaronia AG

- High frequency measurement technologies from 10kHz to 100GHz
- Real-time spectrum analysers
- USB controlled signal generators
- Probes and antennas
- Splitters, couplers and RF over fibre solutions



## Chroma ATE

- Thermal platforms (hot/cold plates)
- Mechanical (MRPT), nitrogen (LN2) or liquid carbon dioxide (LCO2) controlled platforms
- Cryogenic metal treatment systems
- Biomedical/pharmaceutical thermal platforms
- Liquid recirculating chillers
- Cascade condensers



## Farran

- Frequency extension products for VNAs/PNAs/PNA-Xs, SAs, NFAs and signal generators (40 to 500GHz)
- Low cost mmWave, 2 port VNA test solutions (50 to 75GHz, 60 to 90GHz and 75 to 110GHz)
- Frequency extension controller modules and extender calibration kits (40 to 500GHz)



## Focus Microwaves

- Active and passive load pull equipment to 140GHz
- Delta tuners for on-wafer measurements, fundamental and harmonic to 67GHz ideal for 5G applications
- Active load pull with the RAPID product line for fast load pull and modulated measurements to 40GHz
- Passive tuners for fundamental and harmonic applications from 10MHz to 140GHz
- Auriga pulsed I-V (current-voltage)/RF characterisation system for active devices including FETs, BJTs, GaN HEMTs, LDMOS, SiC and graphene
- Mesuro behaviour modelling of high frequency transistors through a direct extension from linear s-parameters



## Pico Technology

- RF and microwave PC based, USB controlled test products
- PicoVNA 100 series 6 and 8.5GHz USB VNAs
- PicoSource PG900 series USB differential Picosecond pulse generators
- PicoSource AS108 8GHz USB agile synthesizers
- PicoScope 2000, 3000, 3000E, 4000, 5000 and 6000 series real-time oscilloscopes
- PicoScope 9000 series USB broadband oscilloscopes
- Data acquisition products
- E-Cal automated calibration kits



## Sharq Instruments

- Solutions for the quantum industry and R&D in optical frequency metrology, stabilisation and manipulation
- High current sources
- High voltage piezo drivers
- Low noise photo detectors

## Our Accreditations & Memberships



## All of the technologies and components you need in one place

- High-reliability components
- RF & microwave components and sub-systems
- Test and measurement solutions
- EMC compliance and test equipment
- Shielded compartmented information facilities (SCIFs)
- Embedded computing and displays
- Time and frequency synchronisation
- Medical computing
- Connectors, cables and cable glands



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