SANSI
RF & COMMUNICATION SYSTEMS PVT LTD

An ISO 9001:2015 Certified Company &
Recognized by DIPP, Govt. of India

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ABOUT OUR COMPANY:

Our SANSI RF AND COMMUNICATION SYSTEMS PRIVATE LIMITED plays a phenomenal role in design and development of standard and custom electrical and electronic systems for various Military, Industrial, Medical and Commercial requirements. We are primarily engaged in introducing advanced technologies to achieve product performance and also other standard factors in various electronics areas like RF, Communication Systems, Signal Processing (DSP, FPGA and OS platforms) and Industry automation, Process Control Systems for various client areas. We are outfitted with over +16 Years of industrial experience and well-trained staff to deal with the electronic system design and solutions both in hardware and software. Also, we are specialized in robotics.

For prototyping a system and production, we manage component sourcing, inspection, board assembly, electrical tests through manual and automated test jigs which can be specially developed to suit the particular job under production.

OUR SERVICES & SOLUTION AREAS:

We are capable to handle all type of electronics related system designs, simulations, and can also supply custom and standard antenna systems, power amplifiers and other RF and communication system and related modules.

- **RF SYSTEM & COMPONENT SOLUTIONS (CUSTOM)**

  - Antenna Design (Custom) and Fabrication.
  - Power Amplifiers and LNA design.
  - High speed RF switching solutions and driver boards design.
  - Protocol based jammer solutions.
  - Diplexers/Triplexers/ Quadplexers/Duplexers/Power Combiners
  - RF Bias Tee
  - Mixers
  - Circulators & Isolators
  - RF Filters (Fixed and Tunable)
  - Power Splitters
  - Antenna Couplers
  - DDS synthesizers

- **RF RADIO COMMUNICATION SOLUTIONS (SOLID STATE & SDR)**

  - Hardware and Software solutions on modulation schemes (wave form) for solid state and software defined radios.
  - Hardware and software implementation solutions for standard and custom communication systems like Tactical Radios etc.
  - Hardware and software solutions on navigational & tracking systems (IRNSS,GPS,GLONASS, BeiDou) .
  - Receiver solutions from VLF to Ka Band

- **RF OVER FIBER MODULE SOLUTIONS**

  - Independent and integrated RF to Optic Converters from 10KHz to 40GHz
  - Programmable Laser Driver Solutions

- **STANDARD AND CUSTOM ELECTRONICS SYSTEM DESIGN AND DEVELOPMENT SERVICES**

  - Development of hardware and software for protocol based applications.
  - Solutions on Bare metal, RTOS and PC platforms (X86/ARM).
  - Embedded related platform based projects on different Microcontroller cores.

- **SYSTEM INTEGRATION AND TESTING SERVICES**

  - System integration and testing services as per standard procedures and client ATP procedures.

- **TEST JIG DESIGN AND DEVELOPMENT SOLUTIONS**

  - All sorts of custom and standard Test jigs - hardware and software

- **SPEECH AND IMAGE PROCESSING SOLUTIONS ON DSP, FPGA AND OS PLATFORMS**

  - Signal processing solutions on DSP, FPGA and OS platforms. We deal all type of electronics communication signal processing services.

- **RTOS SOLUTIONS (Implementation of BSP, Device Drivers)**

  - RTOS related board support package and device driver solutions on Linux platform.

- **PROTOCOL IMPLEMENTATION (I2C/SPI/UART/MOST, IEE1588V2, PCIe, SRIO etc.) SOLUTIONS**

  - Protocols on FPGA and OS Platforms based on the client requirements.
  - SDK package services on client requirements.

- **SYSTEM PERFORMANCE AND ANALYSIS SOLUTIONS (SIMULATIONS)**
  - System performance and analysis services based on standard test procedures like Vibration tests, EMI/EMC, Thermal, Stress, Pressure etc.
- **PCB DESIGN AND PROTOTYPING SERVICES**
  - Services for schematic design, PCB design for different electronic areas like RF and standard electronics areas
- **POWER SUPPLY SOLUTIONS**
  - Power supplies for various Commercial, Industrial, Military and Biomedical application requirements.

RESEARCH & DEVELOPMENT PLAN - 2020:

Our objective is to launch an indigenously developed, a very low cost software defined radio in 2020 with features like wide band, high bandwidth, with very low sensitivity receiver at front end, high dynamic range and low phase noise. The architecture has been designed to support other 3rd party environment libraries like MATLAB, GNURADIO and others.

CONTACT DETAILS:

YAMPAVALI DAMODARRAO

Managing Director

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HOURS OF OPERATIONS:

Monday - Friday, 1st & 3rd Saturday - Opens 8:30am - 5:00pm

2nd & 4th Saturday, Sunday and all public holidays - Closed

OUR PRODUCTS

RF FILTERS, DIPLEXERS, DUPLEXERS, TRIPLEXERS, QUADPLEXERS, POWER SPLITTER, POWER COMBINER, RF CIRCULATOR, RF ISOLATOR

We are capable on design and making of standard and custom type of Filters, Diplexers, Triplexers and Quadplexers for your need.

Technical Specifications:

Frequency Range: On requirement

Insertion loss(max): 1 dB

Return Loss (min): 17 dB

Isolation (min): 80 dB

Tuning provision: ± 10 MHz (For Cavity Type only)

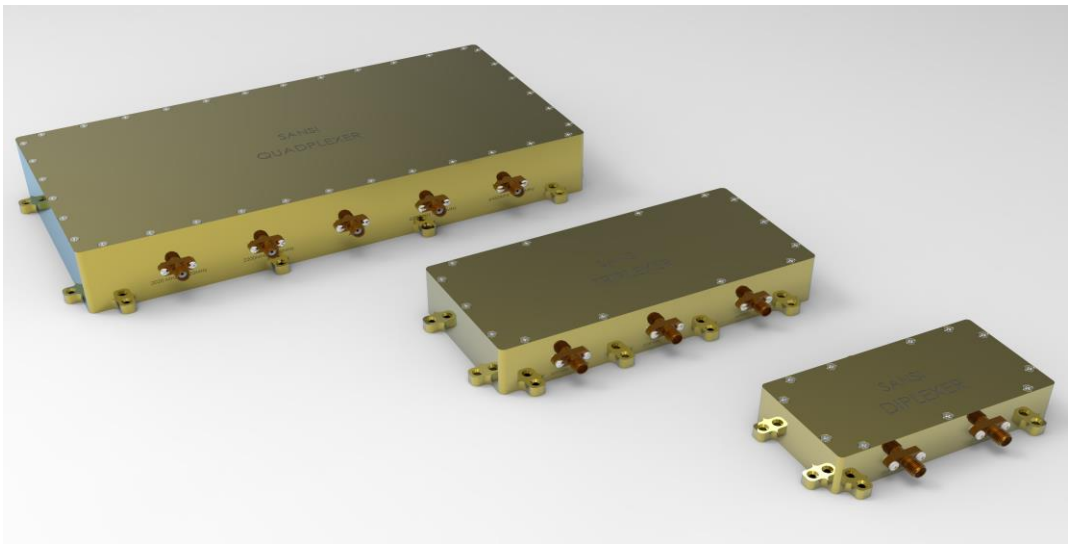
Topology: Cavity type, Microstrip & LC (Based on the frequency only)

Power: On requirement

Port Connector: On requirement

Impedance: 50 Ohms

Dimensions: On requirement



ANTENNAS

We are capable on design and fabrication of custom type of Antennas for various customer needs. We can also supply wide band antenna systems for Naval Communication needs.

HF DIPOLE ANTENNA

Technical Specifications:

Frequency Range: 1.8MHz – 30MHz (with Antenna Coupler)

Gain: 0 to 8dBi (Depending on conditions)

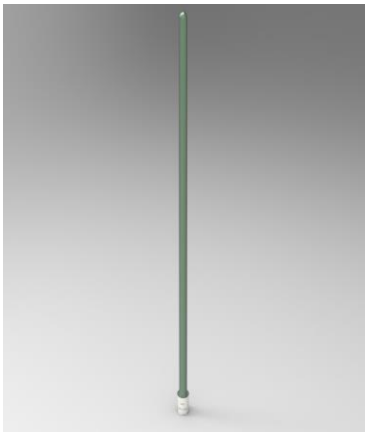
VSWR: <2:1

Impedance: 50Ω

RF Power: Up to 1000W (On requirement)

Dimensions (L X W X H): 30 x 8 x 9 (m)

HF WHIP ANTENNA



Technical Specifications:

Frequency Range: 1.8MHz – 30MHz (with Antenna Coupler)

Gain: -18 to 3dBi (Depending on conditions)

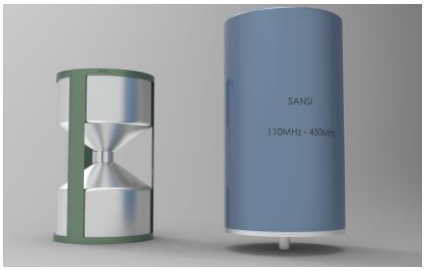
VSWR: <2:1

Impedance: 50Ω

RF Power: Up to 1000W (On requirement)

Dimensions (H): 8 m

VHF/UHF BICONE ANTENNA



Technical Specifications:

Frequency Range: 110MHz – 450MHz

Gain: 0 to 5dBi (Depending on conditions)

VSWR: <3:1

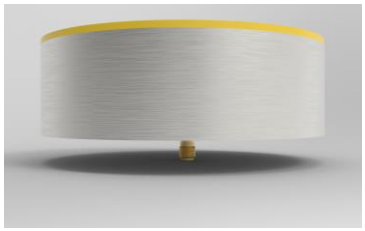
Impedance: 50Ω

RF Power: Up to 500W (On requirement)

Dimensions (H x OD): 40cm x 15 cm

IRNSS MICROSTRIP ANTENNA (ACTIVE/PASSIVE)

Technical Specifications:



Frequency Range: 1150MHz – 1190MHz / 2460MHz – 2510MHz

Gain: 5dBi (Depending on conditions)

VSWR: <2:1

Impedance: 50Ω

RF Power: 5dBm with LNA

DC Bias: 5VDC for LNA

Dimensions (H x OD): 5cm x 13cm/ 5cm x 10cm

GPS/GLONASS MICROSTRIP ANTENNAS (ACTIVE/PASSIVE)

Technical Specifications:

Frequency Range: 1160MHz – 1590MHz

Gain: 5dBi (Depending on conditions)

VSWR: <2:1

Impedance: 50Ω

RF Power: 5dBm with LNA

DC Bias: 5VDC for LNA

Dimensions (H x OD): 5cm x 13cm

UHF SATCOM QUADFILAR HELIX ANTENNA

Technical Specifications:

Frequency Range: 290MHz – 520MHz

Gain: -3dBi to 10dBi (Depending on conditions)

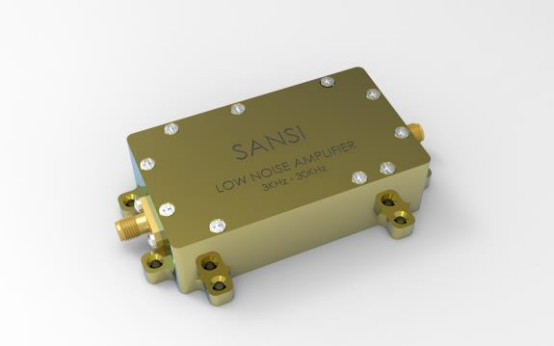
VSWR: <2:1

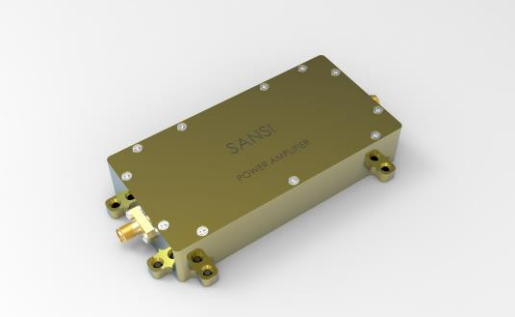
Impedance: 50Ω

Dimensions (H x OD): 150 x 90cm

RF POWER AMPLIFIERS & LOW NOISE AMPLIFIERS

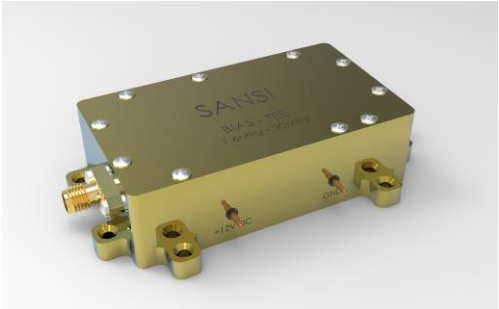
We are capable on design and development of standard and custom type of power amplifiers for various customer needs. We also support R & D works for researchers in advanced amplifier areas. We can supply related substrate materials for RF Power Amplifiers. We have a strong mechanical team for temperature and vibration analysis for to make cooling mechanism for different application areas. We have a dedicated test facility for to measure NF and Output Power.





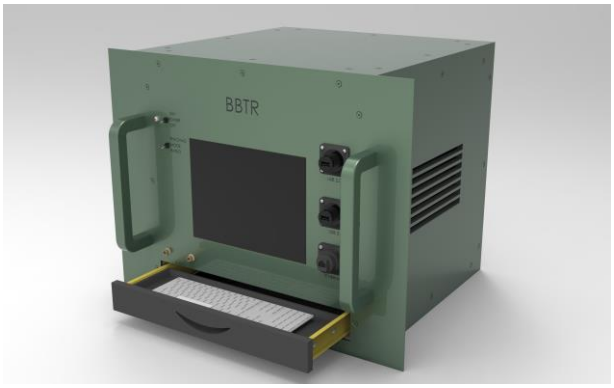
BIAS-TEE, RF SWITCHES

We can design and supply bias tees for wide frequency application for powering of active devices or modules. We have a dedicated development team for to customize RF switching modules for VLF to EHF applications to meet important specifications like low insertion loss, etc.



BROAD BAND TACTICAL RADIO (SDR & SSR)

The **BBTR** system comprises of electronics for standard radio communication SAR transmitter for Search and Rescue operations (COSPASS-SARSAT) at emergency situations and RF front end. The system provides a complete end to end solution for advanced communication equipment in military sector and also named as Custom Software Defined Radio/Solid State Radio. This unit can be configured as a desktop access radio and also as a remote access radio. The system can be used for basic communication using different waveforms and also can be customized as per the client requirement. User can send text message using touch display as well as external keyboard provided. An external alphanumeric keyboard is an optional keyboard for emergency use. It has a dedicated Ethernet interface to configure the radio for one of the two modes. It has a user friendly controllable touch display at front panel. User can easily configure parameter setting like frequency, modulation, band width, power etc. for their communication. It supports waveforms like AM, FM (voice), BPSK, DQPSK, OFDM (Data). Optional waveforms also can be configured based on the requirement. It has a dedicated Spectrum Tracker mode, and it can be used for monitor available spectrums for various user analyses. Dedicated navigation receivers are comprised with the radio electronics for IRNSS/GPS/GLONASS satellites. Also a dedicated algorithm is included to SAR operation to communicate with COSPASS-SARSAT satellite at emergency situations. RF Front End unit is an optional for application use and can be customized based on the requirement. This system architecture also supports Fiber Optic interface for distance communication interface between RF Front End and BBTR.



AUTONOMOUS MAGNETIC CRAWLER

Our autonomous magnetic crawler unit is developed to measure thickness of metal frames. We are developing the entire system for one of our valuable PSU customer. It is under development stage. It measures the thickness of metals like steel, aluminum, copper, etc. and it notifies the replacement of the metal frame by providing a software mark. Dedicated software developed for the system handles both scan and movement of robot on the metal frame. It can measure thickness up to 50mm.

GEO-MARITIME DISTRESS SAFETY SYSTEM (ELT/EPIRB/PLB)

It is a worldwide accepted proven system and communicates with COSPAS-SARSAT satellite at 406.025MHz frequency with a standard protocol through a message format. This system is designed and developed in two different models (hardware). In our first model the main hardware is USRP N210. In further development, up gradation to transceiver made the system very cheaper with optimum performance (Certification under process).

VLF RECEIVER

Generally VLF band is used for submarine communication. We had developed a receiver for VLF signals to receiver at less than -115dBm sensitivity. For this we had developed two different systems. In the first system we used USRP N210 and the other with a 24-Bit 2MSPS ADC. For the reception of VLF signals we had designed and developed a specific antenna and LNA. The signals had been received with good SNR. A team of experts from NAVY & L&T had confirmed the reception of signals.

RADIOSONDE TRANSMITTER & RADIOSONDE GROUND STATION RECEIVER

It is an indigenous system developed for atmospheric parameter measurements. Transmitter transmits the acquired parameter packet for every 1 sec. The ground station receiver displays the parameter on the LCD as well as sends the same data frame to analysis software (under certification process).

Technical Specifications:

Frequency Range: 400MHz – 406MHz

Transmitter Frequency: 24dBm

Receiver Sensitivity: -120dBm

Antennae: Bicone and Patch

Measurement parameters:

Pressure: 15-300KPa

Temperature:-100 to 100 °C

Wind speed

GPS NMEA: Latitude, Longitude, Time, Date, Fix

AUTOMATIC DEPENDENT SURVEILLANCE RECEIVER (ADS-B)

A prototype version had been developed for a client. It has been under testing. It is also a type of tracking system used for aircraft tracking purpose and considers it as a secondary radar. The system receives a formatted data at frequency 1090MHz with PPM technique.

RF OVER FIBER MODULE

We have a dedicated team for optic application modules. We are capable on customizing for your Optical communication transmitter and receiver modules.

RF Fiber Optic Transmitter Specifications:

OPERATIONAL WAVELENGTH	1310 nm or 1550 nm
OPERATIONAL OUTPUT POWER	+5 dBm– 30dBm
OPTICAL FIBER TYPE	Single Mode Fiber
INPUT 1DB COMPRESSION LEVEL(TYP)	10 dBm
MODULATION BANDWIDTH	500 MHz to 20 GHz
GAIN FLATNESS	±1.0 dB Full Span, Entire Frequency Range and ±0.2 dB any 1 GHz Band
INPUT VSWR	2.0:1
INPUT THIRD ORDER INTERCEPT(IIP3)	+15.0 dBm(min)
NOISE FIGURE	15 dB(max)
OPTICAL OUTPUT CONNECTER	Customer Specified
RF OUTPUT CONNECTER	Customer Specified, 50 Ohm
DC POWER CONNECTER	Customer Specified
OPERATIONAL TEMPERATURE	-25.0 C to +70.0 C
STORAGE TEMPERATURE	-55.0 C to +85.0 C
HEALTH & STATUS MONITORING	Customer Specified
MODULE DIMENSIONS	Customer Specified

RF Fiber Optic Receiver Specifications:

OPERATIONAL WAVELENGTH	850 nm to 1650 nm
BANDWIDTH	500 MHz to 20 GHz
3DB BANDWIDTH	20 GHz (min), 22 GHz (typ)
INPUT LEVEL (OPTICAL)	18 dBm (max)
INPUT BACK REFLECTION	-35 dB
RF LINK GAIN	≥0 dB with 6 dB Optical Loss
OUTPUT VSWR	2.0:1
OPTICAL INPUT CONNECTER	Customer Specified
RF OUTPUT CONNECTER	Customer Specified ,50 Ohm
DC POWER CONNECTER	Customer Specified
OPERATIONAL TEMPERATURE	-25.0 C to +70.0 C
STORAGE TEMPERATURE	-55.0 C to +85.0 C
HEALTH & STATUS MONITORING	Customer Specified
MODULE DIMENSIONS	Customer Specified