DIVADESAM TECHNOLOGIES®

nimēṣa

REAL TIME SYSTEM

Controller

MAKE IN INDIA

MSME
MICRO, SMALL & MEDIUM ENTERPRISES
सूक्ष्म, लघु एवं मध्यम उद्यम

www.divadesam.com

CONTENTS

ABOUT nimēṣa RTS

nimēṣa Real Time System (RTS) Contoller is an advance system to ease up rapid prototyping of controllers in a real world application. The State of art, nimēṣa RTS prototype hardware in power electronics, digital and analogue system for researchers and designers are easily integrable plug and play manner.

One of the most important features of this controller is that the response time of the system is predictable and limited. This system is a time bound system which has well defined, fixed time constraints and the processing is done within these time constraints. nimēṣa RTS is developed as a Hard Real Time System where no deadline is missed which makes it equally useful in the critical research projects as well as in implementing commercial hardware systems.

HARDWARE INTERFACE

nimēṣa RTS has plenty of hardware resources to fulfil all modern control requirements. The Analogue and Digital IOs are not only having better bandwidth but also have high bit depth. All analogue ports are having 16-bit depth so that there is minimum quantization error. Digital IO can operate on more than 200 kHz. Over the top NIMĒṢA RTS can be integrated with external proprietary control devices to meet the exceptional needs.

High speed SMA contacts suitable for Sensing and measurement.Latest high end Oscilloscope are equipped with this type of contact

High Speed Analog front end ensure better signal processing and noise reduction

DEVICE I/O

nimēṣa RTS is capable to be used with various types of system. These system may include external power electronics hardware, actuators, signals, waveform generators & emulators etc. All such systems are fully supported by nimēṣa RTS with its dedicated and general purpose I/O.

ANALOGUE INPUT
16-BIT SAR ADCs

nimēṣa RTS is equipped with sixteen channels of 16-bit analogue to digital converters (ADC). Analogue channels are having in-build filters to minimize noise and take input voltage in range of ±15 V.

ANALOGUE OUTPUT
16-BIT BUFFERED DAC

In addition to ADC, sixteen channels of 16-bit digital to analogue converters (DAC) are provided with RTS. Analogue output are fully buffered and can take input voltage in range of ±15 V.

GPIOs
24-BIT HIGH SPEED GPIO

24-bit bidirectional 5 V IO ports are available on RTS. These can be configured as Input or Output. Ports are Bit or Byte addressable. In addition to this, GPIO can provide additional capability of UART, SPI using software interface.

SPECIAL PORT
High Resolution SPWM

With emerging requirement of power electronics based system development, nimēṣa RTS provides high resolution high bandwidth, dual 8- port SPWM channels.With programmable symmetric dead band these channels are best usefull in DC to AC conversion.

ROBO PORT
Special Purpose Robotics Port

nimēṣa RTS provides high resolution high capability 9-Bit Special Purpose robotics port which is used in controlling Stepper Motor and Digital Survo Motor. These motors are frequently used in robotics

MATLAB INTEGRATION

nimēṣa RTS can easily be able to integrate with MATLAB Simulink Interface by using its state of art software drivers. nimēṣa RTS can implement any type of Simulink model in the real time that is supported by code generation. In addition to this a dedicated hardware interface library is provided with package to minimize the effort in using physical resources.

CODE GENERATION

A full support for MATLAB code generation with state of art drivers and GNU compilers.

FASTER PROGRAMING

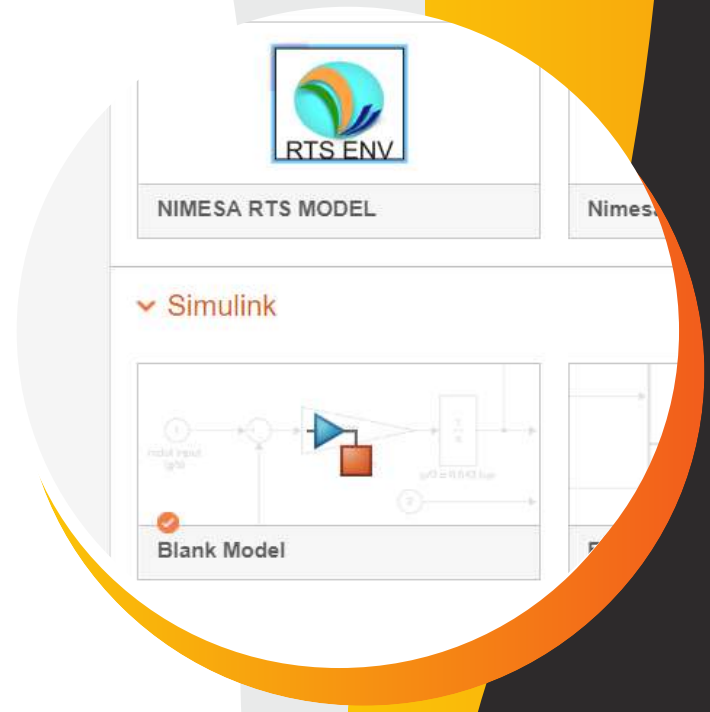
No additional key based lock mechanism and licensing requirement.

ACCURATE CONTROL

Integrated FPGA solution are provided to accommodate fast & more accurate control

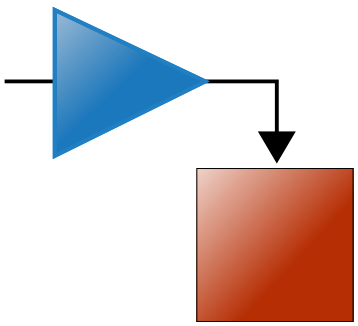
SIMULINK
MODELING

A full Simulink model support is provided with Hard and soft real time capability. An additional support for MATLAB function with sampling domain is provided.



LIBRARY
SUPPORT

NIMĒṢA RTS provide full support to Simulink Discrete system library. A Discrete-time domain blocks are fully integrable in RTS.

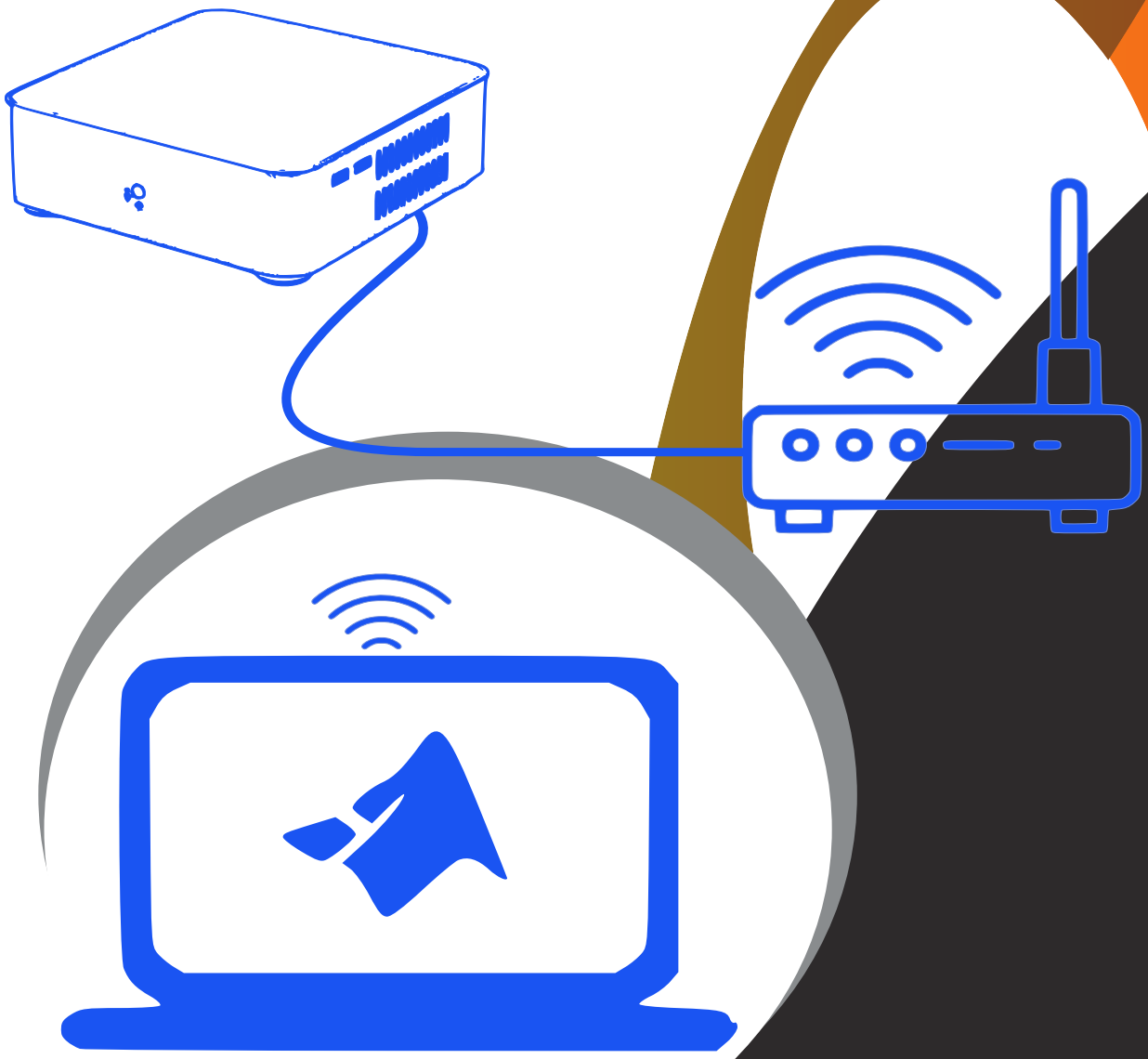


DEDICATED
FPGA BLOCKS

Complicated resource thirsty software stack like UART,TCP/IP, SPWM etc. are directly hardware implemented using FPGA.

DEVICE CONNECTIVITY

nimēṣa RTS controller works on the Ethernet / Wifi protocol. This makes it able to control & program devices in a local area network with wired or wireless connection while providing access to multiple user.



IoT ENABLED SYSTEM

nimēṣa RTS controller provides a special feature that enable it to communicate as a IoT device.One of the key benefits of an IoT-enabled RTS system is the ability to access real-time data and information over the internet. By connecting sensors and other devices to the RTS system, IoT can provide real-time monitoring and control of the system's operations. In addition to real-time monitoring and control, an IoT-enabled RTS system can also provide valuable insights into the system's performance over time. By analyzing historical data, operators can identify trends and patterns, and make informed decisions to improve the system's performance and efficiency

EXTERNAL
MODULES INTEGRATION

nimēṣa MICROGRID
EXTERNAL CONTROLLER

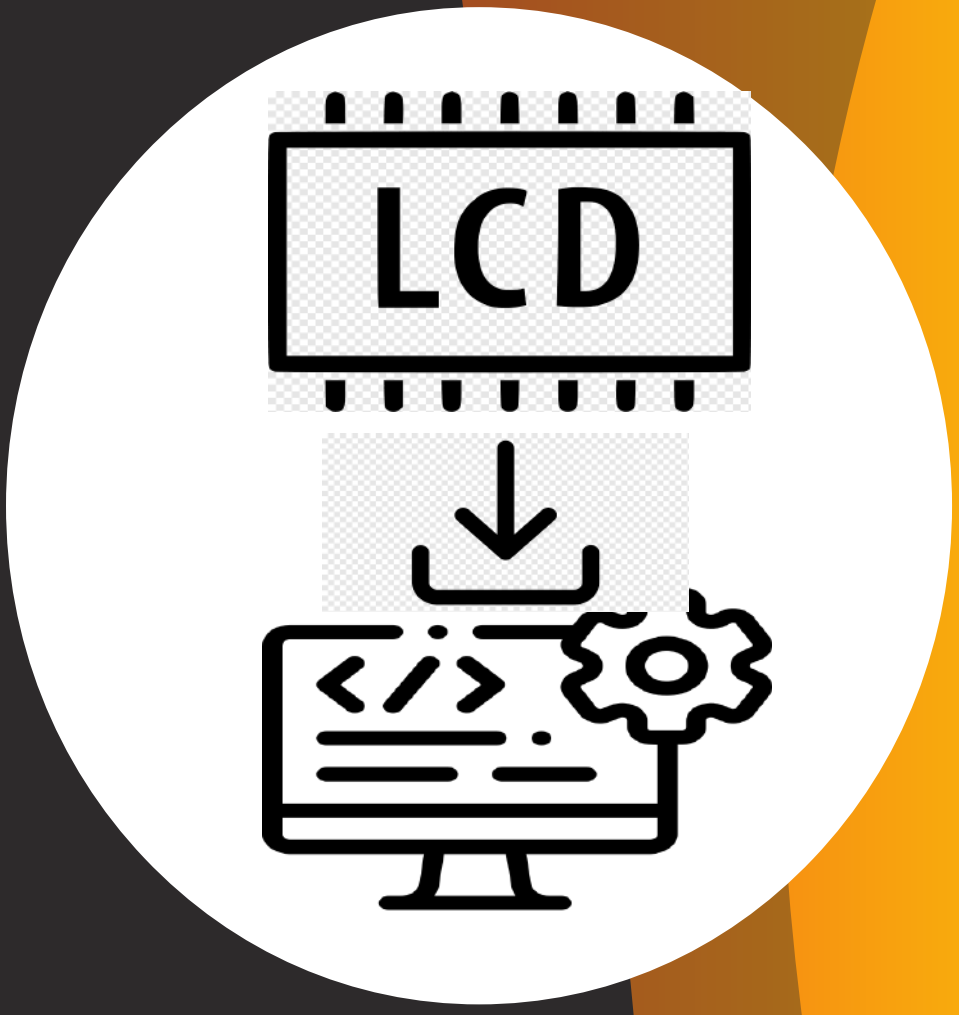
nimēṣa RTS controller has generally four interfaces i.e. DAC, ADC, GPIO and special PWM interface. In addition to these interfaces an external module interface is includes in the hardware which supports the communication with the external compatiable power electronics devices to the nimēṣa RTS controller. These external modules are primarily nimēṣa Microgrid and many other external modules like high power DC/DC converters, Inverters, dc-drives, Solar Emulators, Wireless Power Transfer kit and other renewable energy devices which can be directly interfaced with nimēṣa RTS.

LCD DISPLAY
PROGRAM SAVING MODE

This is the unique and advance feature of the RTS Controller. The LCD display will be used to control the system and advance save option for programs, are unique features that make RTS controller a powerful tool for managing and controlling real-time system.With these features, users can easily monitor and control the system, save time and reduce errors, and ensure that the system is operating efficiently and effectively.The controller allows users to save programs or configurations, which can be easily recalled and executed at a later time.

This feature saves time and reduces errors by allowing users to quickly and easily set up the system to perform a specific task or operation.

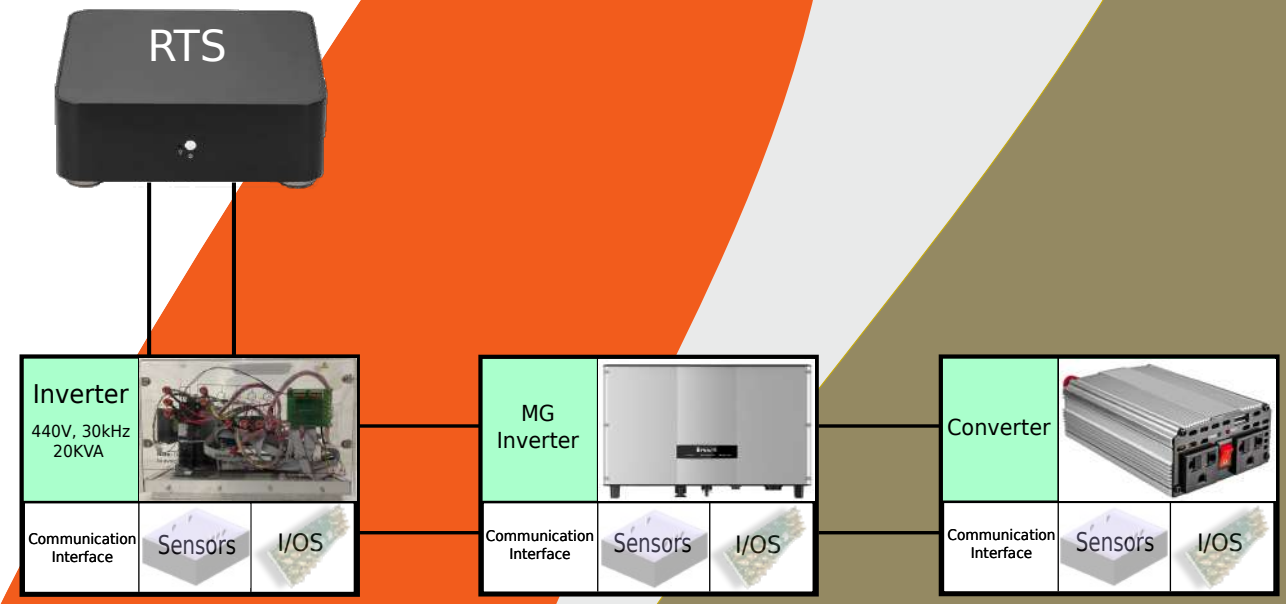
The LCD display also provides a visual representation of the system's status, allowing users to easily monitor and control the system's operations.



DAISY MODULE

The Daisy Chain connection is a method of connecting multiple external hardware devices to a single Real-Time System (RTS) controller. This method is beneficial because it simplifies the wiring process and reduces the number of cables needed to connect multiple devices Daisy chain network in power electronics enables us to control the different devices connnected with the same RTS controller.

Devices are connected to each other in a chain-like manner. This connection method eliminates the need for a separate cable from RTS for each device, which not only reduces clutter but also reduces the cost of hardware and installation.



External Modules for Daisy Network

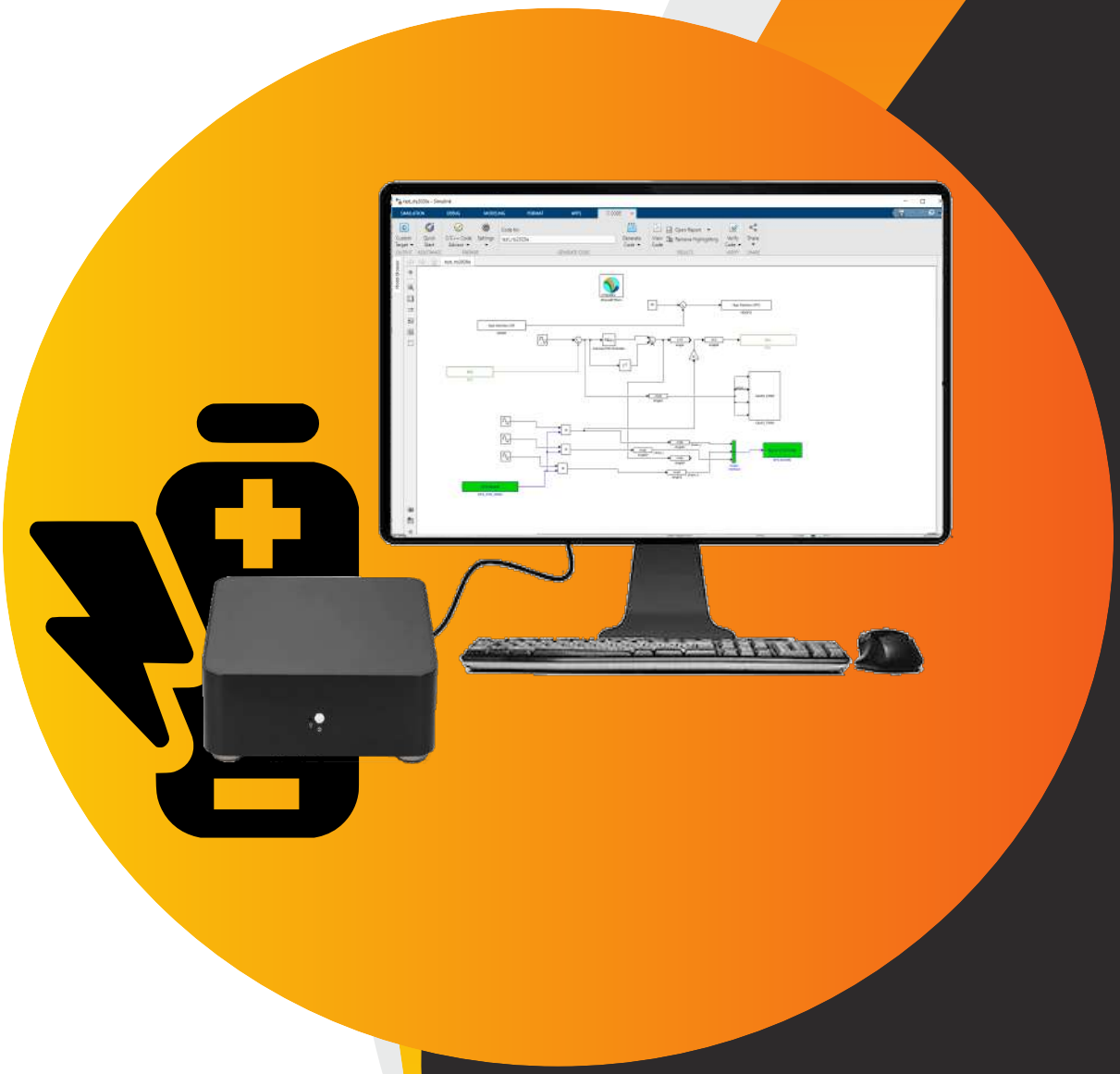
- RTS Inverter kit
- MG Inverter kit
- Sensors
- Converter
- WPT

BATTERY POWERED

nimēṣa RTS Controller has one unique feature that it is battery powered, which allows this to operate even in situations where a power source is not readily available. It has incorporated the battery within the system according to the power requirements of the system and the expected duration of use. Battery-powered RTS controller can be particularly useful in situations where a power source is not available or where mobility is required. This feature allows the RTS Controller the extended period of operation without continuous power source.

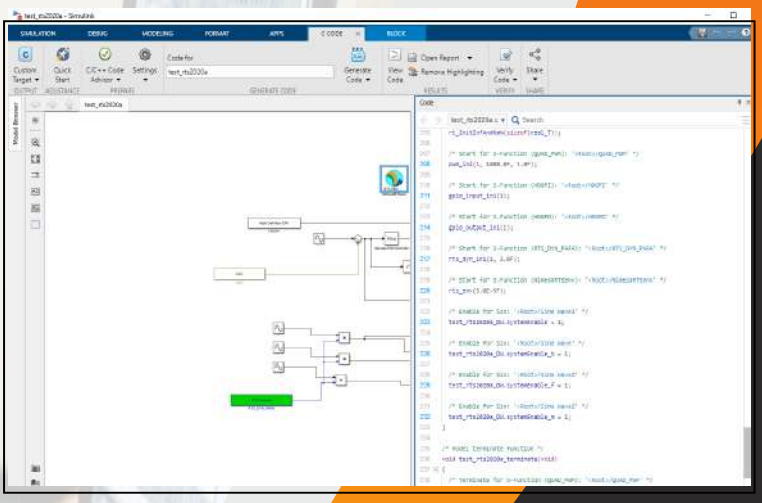
Used in remote location without power source and provides backup for extended operation when power is off.

Used in mobile applications where the controller needs to be moved frequently.

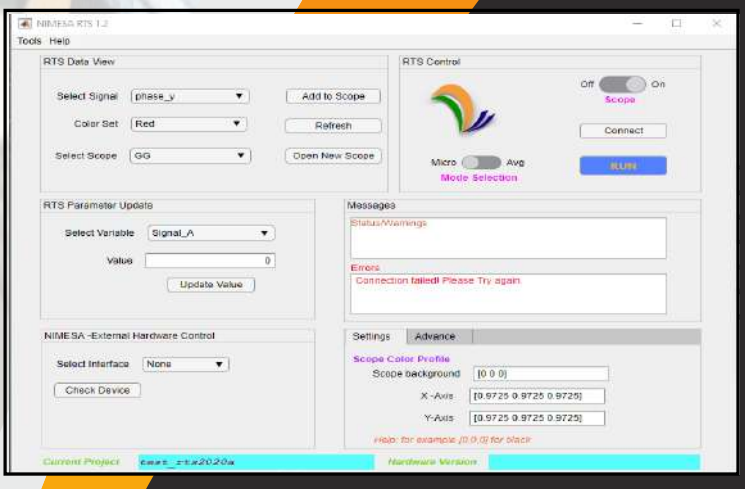


nimēṣa RTS
MATLAB APP

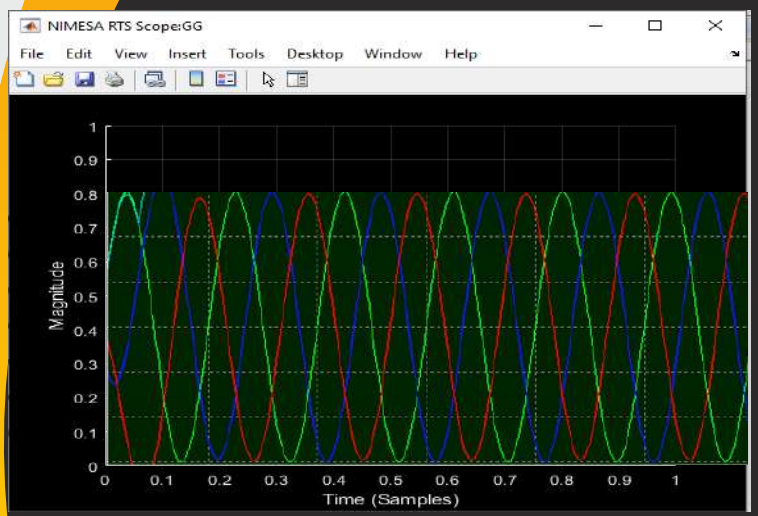
01 CODE GENRATION



02 NIMĒṢA RTS APP

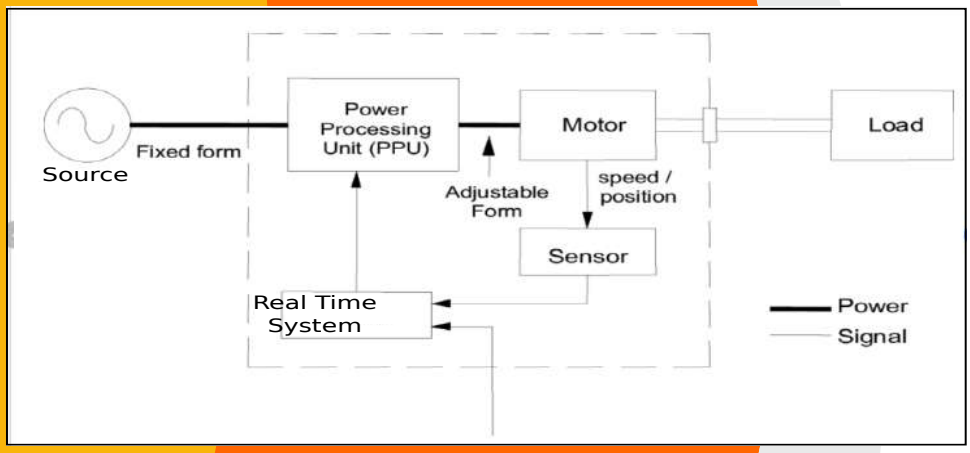


03 NIMĒṢA RTS SCOPE

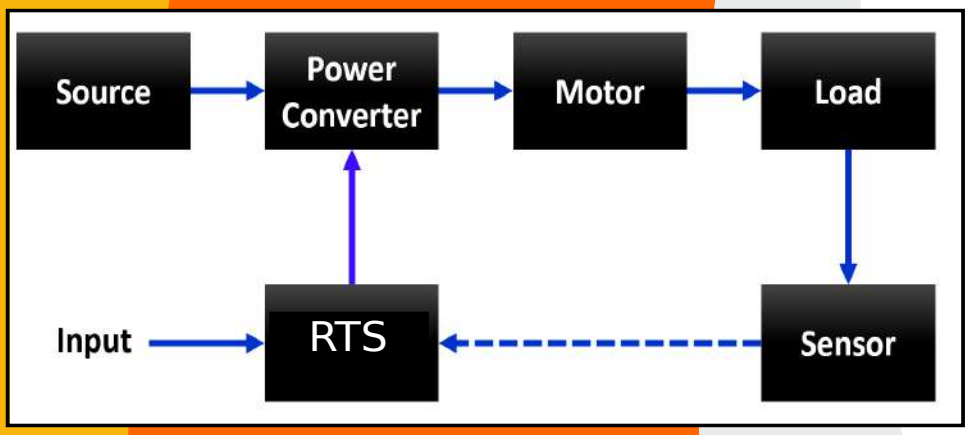


nimēṣa RTS APPLICATIONS

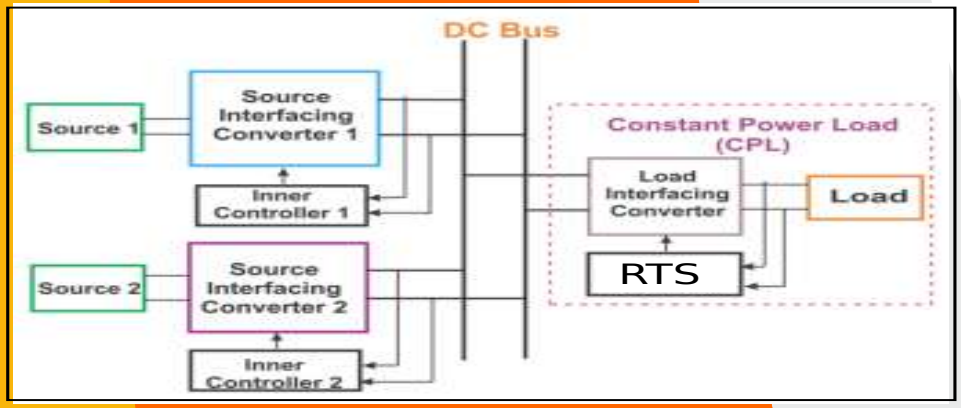
Power Electronics Drives



Power Electronics Conversion Devices



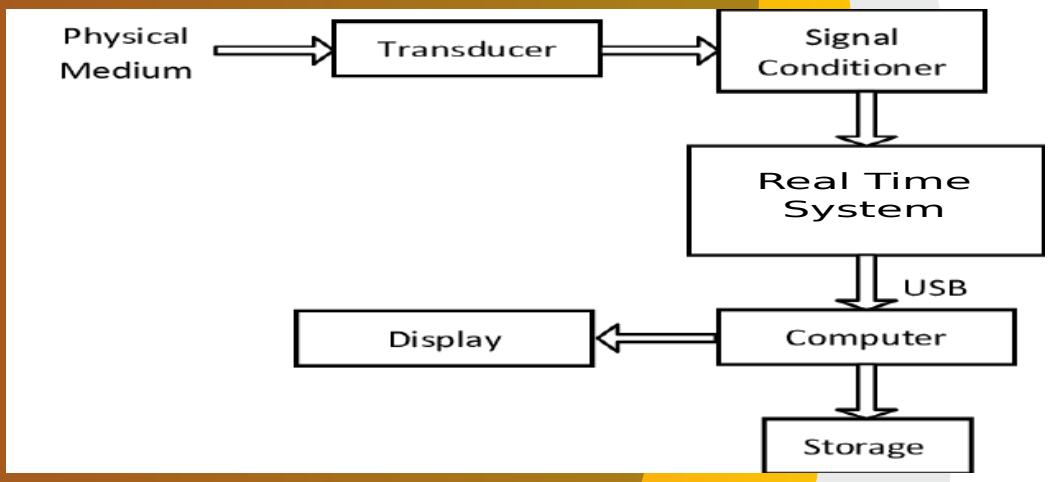
Microgrid Converters



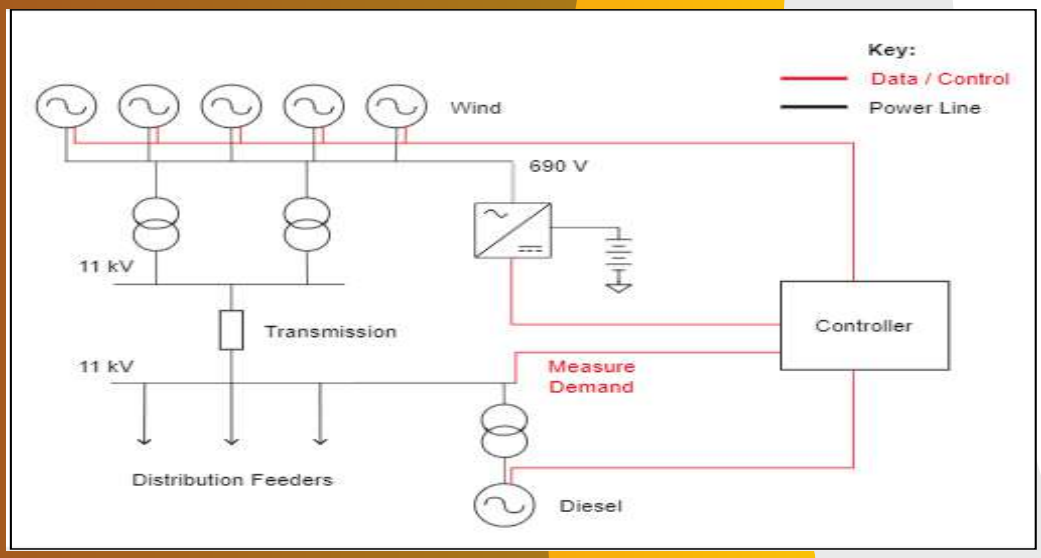
nimēṣa RTS

APPLICATIONS

Sensing & Data Acquisition



Industrial Power Supplies



nimēṣa RTS MODELS

01 nimēṣa RTS Basic v3.0

MODEL NUMBER: NRTSC2408B

FEATURES:
16 Bit SAR ADC
16 Bit BUFFERED DAC
24 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM

02 nimēṣa RTS Basic+ v3.0

MODEL NUMBER: NRTSC2416B

FEATURES:
16 BIT SAR ADC
16 BIT BUFFERED DAC
24 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM

03 nimēṣa RTS Robo+ v3.0

MODEL NUMBER: NRTSC2416R

FEATURES:
16 BIT SAR ADC
16 BIT BUFFERED DAC
24 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM
9 BIT SPECIAL ROBOTICS INPUT/OUTPUT

04 nimēṣa RTS Prime v1.1

MODEL NUMBER: NRTS6416PI

FEATURES:
16 Bit SAR ADC
16 Bit BUFFERED DAC
64 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM
IoT ENABLED SYSTEM
LCD DISPLAY AND PROGRAM SAVING MODE

05 nimēṣa RTS XTend v1.1

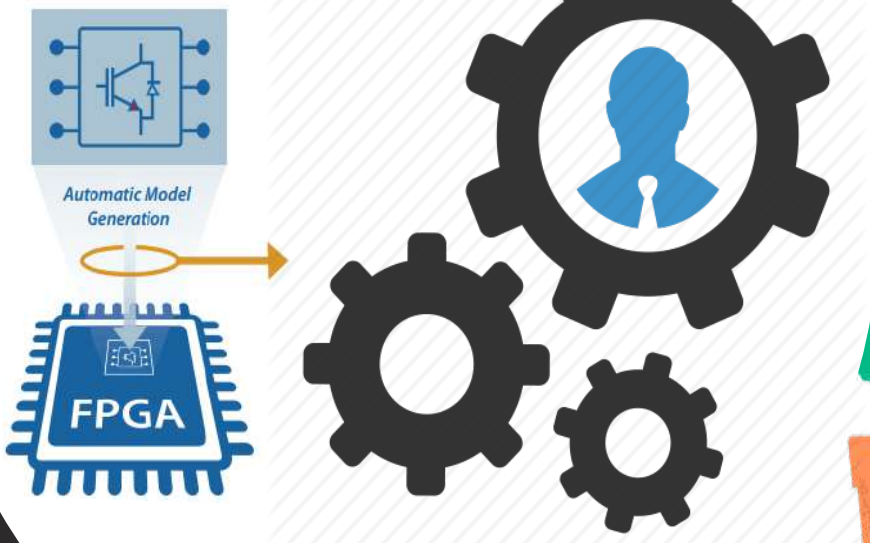
MODEL NUMBER: NRTS6416XL

FEATURES:
16 Bit SAR ADC
16 Bit BUFFERED DAC
64 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM
IoT ENABLED SYSTEM
DAISY IMPLEMENTATED
LCD DISPLAY AND PROGRAM SAVING MODE

06 nimēṣa RTS Max v1.1

MODEL NUMBER: NRTS6416MB

FEATURES:
16 Bit SAR ADC
16 Bit BUFFERED DAC
64 BIT HIGH SPEED GPIO
4*2 HIGH RESOLUTION SPWM
IoT ENABLED SYSTEM
DAISY IMPLEMENTATED
LCD DISPLAY AND PROGRAM SAVING MODE
BATTERY POWERED SYSTEM



THE BEST
EXPERT SUPPORT

We are providing unique expert support for the dynamic and innovative research products especially in the field of power electronics and renewable technologies. As a tech start-up we are excelling in the every minute fields of new age technologies and providing advance research products and proper guidance to the keen research scholars in the electrical and electronics engineering. Some of the areas are are provided in the next page where we extend our supports as a sound technical partner

Customised Research Products

Unique customised research products; Power Electronics Lab equipments; Goal oriented research products as well as stimulation for further innovations

Technical Support

Optimizing Algorithms, Hardware Enhancement and Software Upgradation

Technical Consultancy

Technical feasibility of a future and running projects; Best suitable Hardware Design and Development

Maintetance Support

Fixing & Optimizing Hardware and Software for certain research products

Collaborative Research

MoUs with Institutions and Research individuals to attain research goals and future innovation.

VISION

At Divadesam Technologies we are striving to bring innovation into your daily life to enhance the quality of life. Our mission as a tech company is to bring out the best technologies possible in engineering to develop suitable products and services for a better research environment for researchers and industries.

DIVADESAM TECHNOLOGIES®

Contact Us

Web: www.divadesam.com
Email: info@divadesam.com

Phone: 0135-2977570
+91-8445561729

Regd. Office:C-326, Lane-3G, Saraswati Vihar, Ajabpur Khurd, Dehradun, UK, India-248121

R&D Facility: First Floor, Gauraaj Villa, New Canal Road, Kedarpur, Dehradun, UK, India-28001