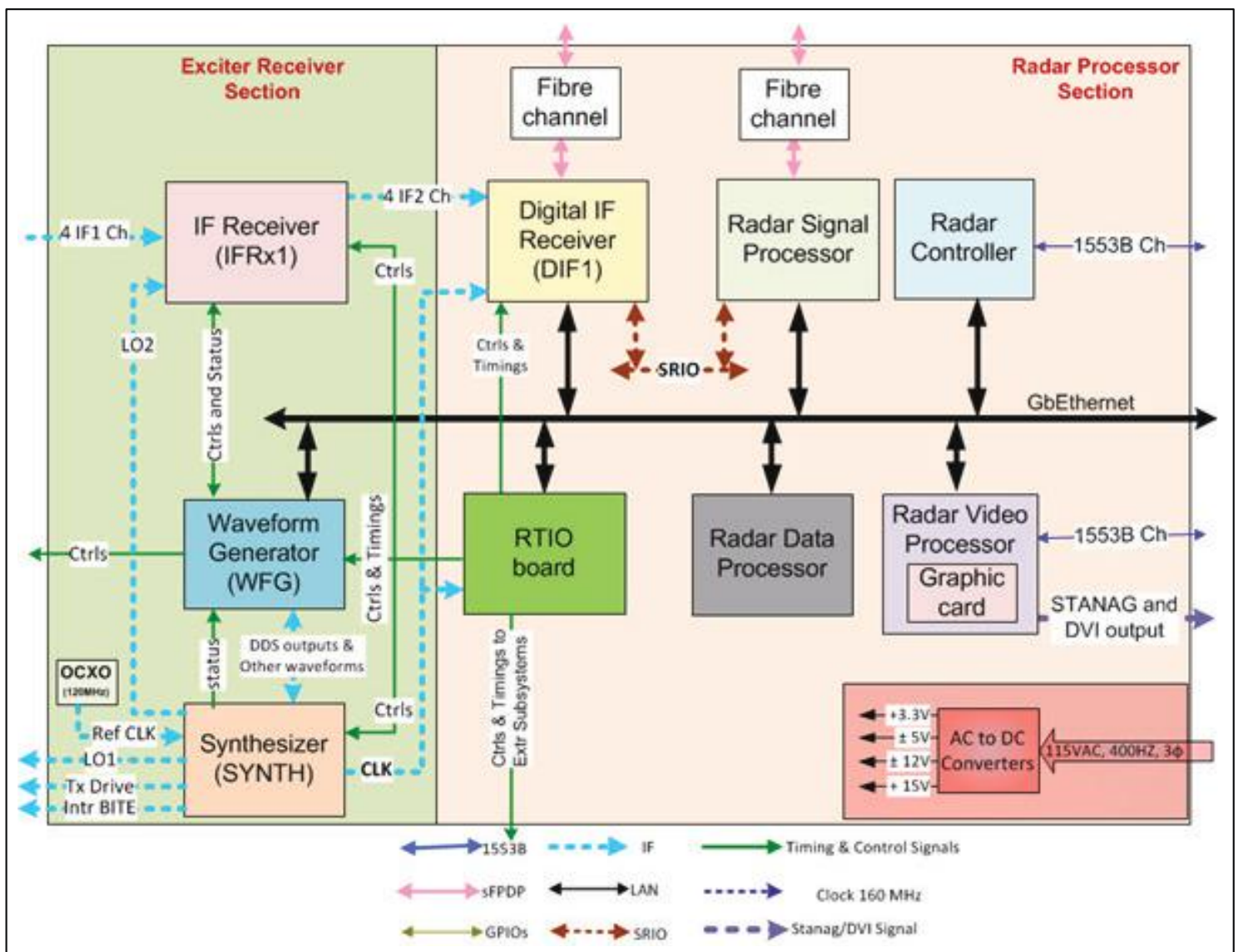


Exciter Receiver Processor Unit (ERPU)

Exciter Receiver Processor Unit (ERPU) is indigenously developed by CoreEL and LRDE. CoreEL has developed all the sub-modules in house, except VPX & HCD.

ERPU is a Multi-Processor system, which is designed to meet high processing speeds and bandwidth. It receives the four RF channels from the RF down converter (RFDC) of AAAU of AESA Radar. Inside ERP, these four channels of frequencies 1630MHz for narrow band (NB) mode and 1640MHz for wideband (WB) mode will be down converted to 70MHz for NB mode and 200MHz for WB mode. Further, these IF signals will be brought to baseband and quadrature demodulated to give In-phase & Quadrature-phase data (IQ data) on each channel. The baseband data is processed by signal processor to give detection reports which are further processed by radar data processor and perform tracking operation. Finally radar video is generated in ERP which is sent to display. The ERP control and command all its modules and various external interfaces with avionics buses for receiving INS/GPS and OAC data using radar controller.





KEY FEATURE

- X-Band (9–10 GHz) Transmit Drive Output, with phase noise of better than $-70\text{dBc}/\text{Hz}@100\text{Hz}$ offset, under vibration
- 4-channel L-Band Receivers
 - Wideband Mode:
 - IF1: 1640 MHz, BW=64MHz
 - IF2: 200MHz, BW=64MHz
 - Narrowband Mode:
 - IF1: 1630MHz, BW = 5MHz
 - IF2: 70MHz, BW = 5MHz
- 12 Slot Conduction Cooled Full ATR chassis

SPECIFICATIONS

Main hardware

The Radar Processing unit chassis consists of the following boards:

- Waveform Generator board
- Synthesizer board
- 4-Channel IF Receiver board
- 4-Channel Digital IF receiver board
- Radar Timing and IO generation board
- Single Board Computers
- Signal Processing boards
- Open VPX VITA 62 compliant Power Supply capable of supplying 500W of power

Interfaces

- Front panel MIL-DTL-38999 Series III connectors
- TNC and SMA connectors for RF input and outputs
- Power, Digital IO, MIL 1553B
- Eight sFPDP interfaces (fiber optic) for high speed communication
- 3 Gigabit Ethernet ports
- SRIO for inter-board communication

MECHANICAL

- 12 Slot Hybrid Conduction Cooled Full ATR chassis
- Dip brazed folded fins for efficient heat transfer
- The system (with all modules) weighs <31 kg

POWER CONSUMPTION

- Input Supply is 3-Phase, 115V AC, 400Hz
- Maximum power consumption is 500 Watts

ENVIRONMENTAL

- Temperature range
 - -40°C and +85°C (Storage)
 - -40°C and +55°C (Operational)
- Designed to meet the following MIL standards
 - MIL-STD-810E
 - MIL-STD-461E
 - MIL-STD-704D

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CoreEL Technologies (I) Pvt. Ltd. # 21, 7th Main, 1st Block, Koramangala, Bangalore - 560 034, India.

T: +91 80 4197 0400, F: + 91 80 3072 3638, E-mail: sales@coreel.com

www.coreel.com