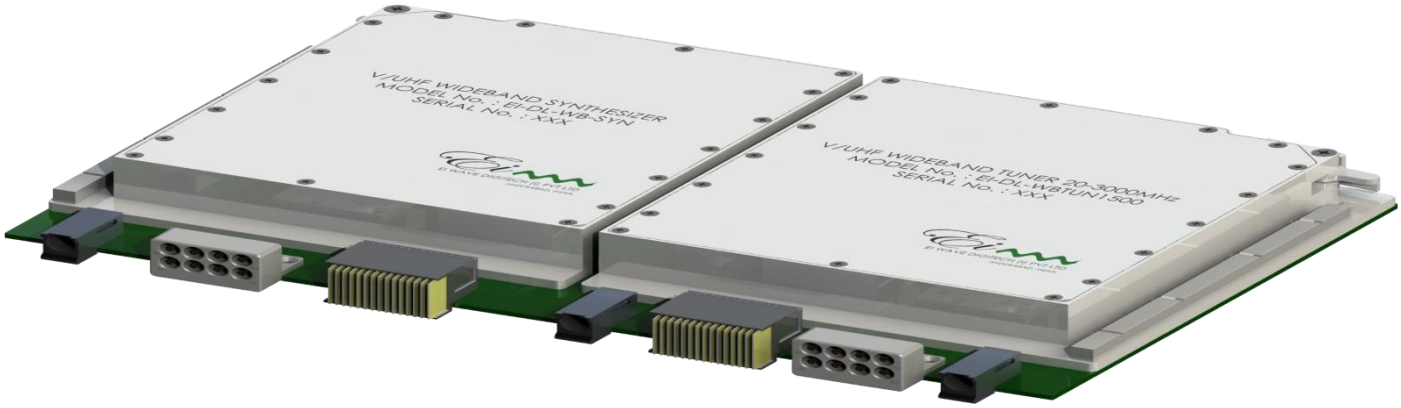
Ei Wave Digitech (I) Pvt

RF WIDEBAND TUNER (30-3000MHz)



The **EIWDTUN-20-3000**, is a single channel Wideband tuner with 40Mhz bandwidth and tuner is expandable to **100 kHz - 6 GHz**. RF Front end and synthesizer is integrated in a rugged, conduction-cooled 6U VPX module. Low Phase noise synthesizer and low noise figure front end makes this tuner suitable for communication intelligence (COMINT) and electronic intelligence (ELINT) application. For multi-channel additional RF tuners can be integrated to form a multi-channel radio solution These tuner can be user for DF application as Phase coherency is maintained. **EIWDTUN-20-3000** reduces manufacturing costs and improves production. It is designed for use in embedded applications where size, weight, and power are important factors.

Key features and benefits

- **Ultra low Phase noise** with fast tunning synthesizer.
- Single or multi-channel phase coherent operation
- High dynamic range is achieved with different mode of selection.
- Low Noise Mode, Normal Mode and Low distortion mode supported for high sensitivity and high dynamic range.
- A stable OCXO with very low ppm long term stability makes this tuner a perfect solution which can be used for years without any calibration.
- This Tuner is expandable to 100KHz - 6GHz.
- Sub-octave preselectors decrease inter-modulation products and increase dynamic range.
- Low spurs are achieved with variable reference technique.
- Inbuilt RF Byte source is provided for system failure testing.

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EIWDTUN-20-3000 specifications

RF Front End specifications

Parameter	Specification
Tuning range	30 MHz to 3 GHz
Analog IF bandwidth	Selectable 40/0.3 MHz (Other options available)
Input impedance	50 ohms
VSWR	Less than 2.5:1
Preselection	Bypass, 20-90 MHz
90MHz to 3 GHz	Suboctave preselectors
Max input level	+ 30 dBm
Image rejection	> 90 dB
IF rejection	> 90 dB
LO re-radiation	< -90 dBm
Noise figure	14 dB typical
	(10 dB with pre-amp selected)
Third order intercept	+ 3 dBm (Low Noise Mode)
	+20 dBm typical (Normal Mode)
	+35dBm (Low Distortion Mode)
Single tone SFDR	> 80 dB
Internal spurious	< -110 dBm typical
Gain control	Attenuation range 60 dB with 1 dB steps 35dB Gain for Low Noise Mode 15dB Gain for Normal Mode 0dB Gain for Low Distortion Mode
AGC Output (70 MHz)	-10dBm ± 2dBm

Synthesizer specifications

Parameter	Specification
RF tuning resolution	1 Hz via Second LO
RF tune speed	≤ 100 µSec
Phase Noise	90 dBc/Hz at 10KHz Offset (Typ.) LO1
	95 dBc/Hz at 10KHz Offset (Typ.) LO2
Frequency Range	4530-7500MHz (LO1) 40MHz Step Size
	4430 (LO2) 10Hz Step Size
Spurious	< 75dBc within 40MHz BW
	< 60dBc else-where
Output Power (LOs)	10dBm ± 2dBm (LO1)
	10dBm ± 2dBm (LO2)
Reference	Internal Reference with 10ppb max
	External Reference 10Mhz (0dBm) Option
	Reference Out for Frequency Coherency Option
RF Byte	30-3000MHz with 1KHz Step Size
Interface Specifications	
Digital Interface	Via backplane RS-232
	SPI and other interfaces are optional
Power Supply Requirement	+12 (0.3A), +5.5V(3A), +3.63V(2A)
Mechanical/environmental specifications	
Size	6U-160 VPX 1 inch pitch
Weight	< 2Kg
Operating temperature	-40°C to 70°C
Storage temperature	-55°C to +85°C
EMI/EMC	MII-STD 461-E
Environmental	JS-S5555

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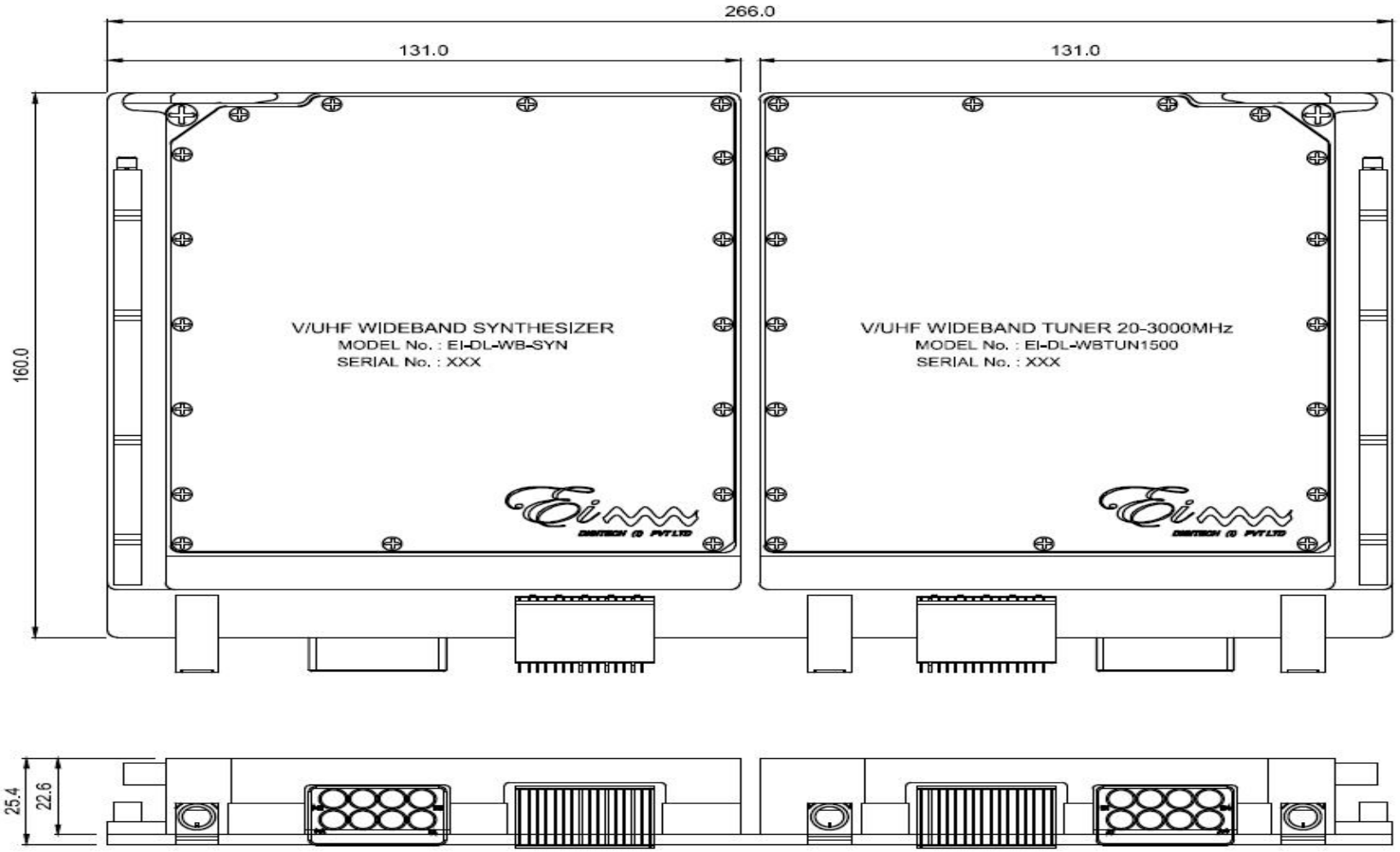
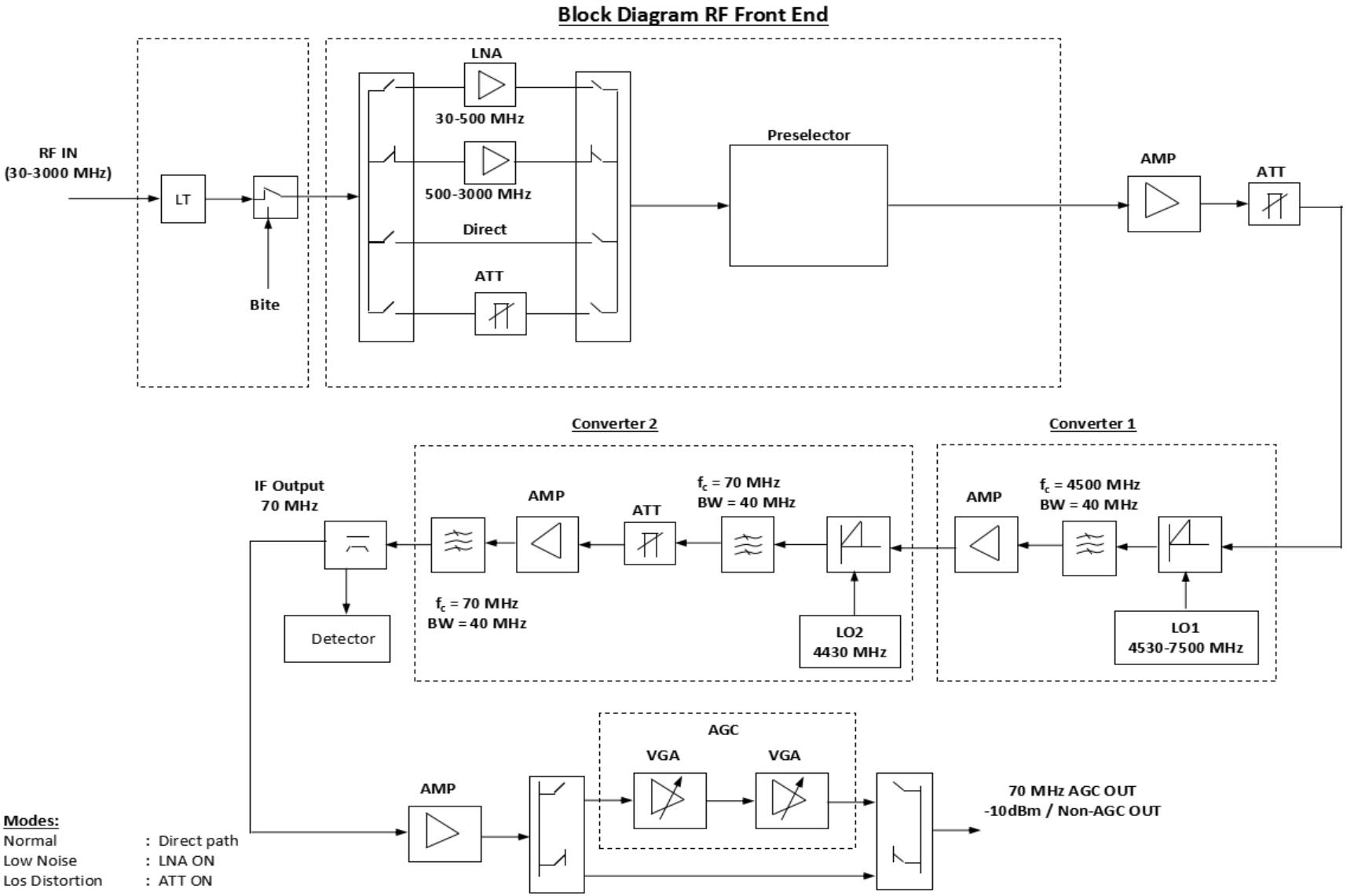
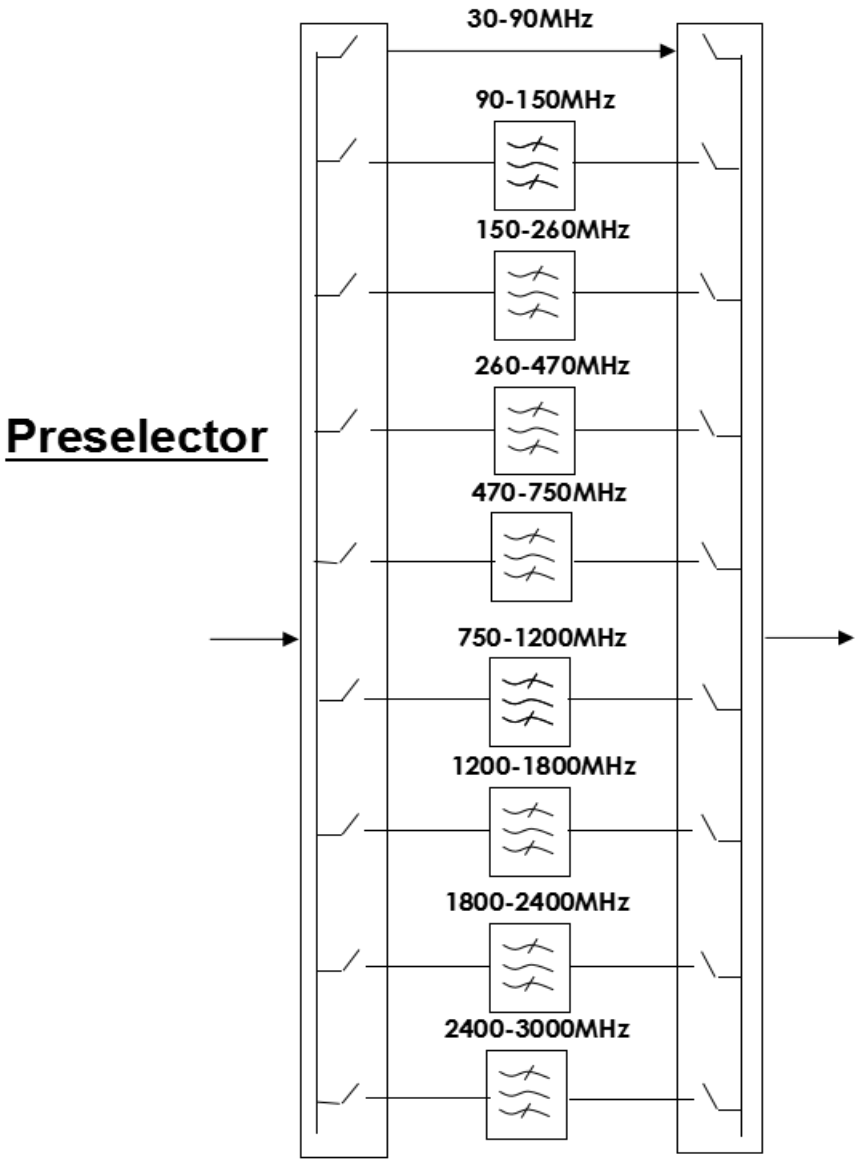
Mechanical


266.0
131.0
131.0
160.0
V/UHF WIDEBAND SYNTHESIZER
MODEL No. : EI-DL-WB-SYN
SERIAL No. : XXX
V/UHF WIDEBAND TUNER 20-3000MHz
MODEL No. : EI-DL-WBTUN1500
SERIAL No. : XXX
25.4
22.6

Block Diagram (RF Front End)



Block diagram of Preselector



Block diagram of synthesizer

BLOCK DIAGRAM OF SYNTHESIZER :