

GNSS L5/E5a Radio

Front-End

ACGNS-L5_E5a-FE-V1



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ACORDE's ACGNS-L5_E5a-FE-V1 consists of a GNSS Radio Front-End (FE) with SPI controls specifically designed to interface the Stratix II EP2S180 DSP FPGA development board and other pin-compatible boards. It uses 2.54mm-connectors but custom interfaces for other platforms can be provided.

The FE is designed to work at the GPS L5 and Galileo E5a bands, but can be adapted for L2 reception upon request. The device is fully reconfigurable (filtering, IF, output data format...) according to customer needs. An MMCX connector can be used as an output to have a buffered version of the internal TCXO reference, or (optionally) as an input for an external source.

This module can be used with either a passive or an active antenna.

RECEIVER OEM SPECIFICATIONS

Input frequency	1176.45MHz
FE Analog 3dB Bandwidth.....	{2.6, 4.2, 8 MHz} band-pass, 15MHz Low pass*
FE NF.....	1.3dB
TCXO Frequency.....	10 to 40MHz*
TCXO Stability	0.5ppm
Sampling Frequency	fTCXO, fTCXO/2, fTCXO/4, 2xfTCXO (40MHz max)
Input Impedance	50 Ω
Data Output	1-2 bits (I&Q), Analog
VCC	3.3V (internally regulated)
ICC	<178mA (passive antenna)

* For wideband operation correct sampling frequency and filtering must be selected. For typical L5/E5a configuration the 15MHz low-pass filter is required, and a 26MHz crystal oscillator is provided by default (other frequencies can be requested).

POWER SUPPLY

DC input voltage	3.5-10V DC
Active Antenna supply voltage	3.3V DC (provided by FE via input SMA connector)
Antenna Supply Current.....	20mA max.

ENVIRONMENTAL SPECIFICATIONS

Storage temperature	-40 to +85°C
Operating temperature.....	-20 to +55°C
Relative humidity	Up to 95%

MECHANICAL SPECIFICATIONS

Interfaces:	
RF Input	SMA female
Supply, control input and data output	Two 1x2 and two 10x2 Female 2.54mm connectors
Dimensions.....	74 mm x 43 mm

APPLICATIONS

- Baseband Hardware Research and Development
- Education
- GNSS applications development