



RF-LAMBDA

The power beyond expectations

RFBDC14G15GA

BLOCK DOWN CONVERTER

IF Output 200MHz~800MHz
RF Input 14.85GHz~15.35GHz



Summary

RFBDC14G15GA down-converter unit uses the phase lock technology, and it uses the crystal oscillator with temperature compensating function as the referenced signal of PLL, what's more, it uses the low phase noise Analog Device ADF4107BRS as the frequency synthesizer chip of PLL. So the frequency of its inner part LO has a good stability in a wider temperature range.

RFBDC14G15GA Down-converter use two band pass filter inside so that It can give better out band rejection.

General Specification

IF Output frequency: 200MHz~800MHz
 RF Input frequency: 14.85GHz~15.35GHz
 External reference 10MHz interface available.
 Frequency stability 2×10^{-6} / Hour
 Frequency hopping < 10ms / 5MHz
 High linearity low spurious in / out band
 Handle high peak to average ratio signal such as OFDM, QPSK, DSSS signal.
 Ideal for point to point radio station.
 Small package, high mobility.

Electrical Specifications

RF input range	14.85GHz-15.35GHz	IF Output Frequency	200MHz-800MHz
P1dB	+10dBm	Stability	2×10^{-6}
Conversion Gain:	50dB \pm 0.5dB $\Delta G/\Delta T=0.03\text{dB}/^\circ\text{C}$	In/ Out VSWR:	1.5 : 1
Flatness:	+/-2.0dB max.	Frequency step	0.5MHz
In-Band spurious	65dBc min. (-10dBm output)	Out-Band Spurious	50dBc min (-10dBm output)
LO Phase Noise	-110dBc/Hz (100KHz offset)	Reference	10MHz external reference (GPS)
Input Power	-20dBm (Max)	DC Voltage:	+11VDC~+15VDC (2W)

Mechanical and Environmental Specifications

Operation Temperature:	-40°C to 85°C base plate	Mechanical shock	30G, 11mSec half sin wave, 3 axis both directions
Vibration:	14.2g RMS (15-2000Hz) functional	Humidity	95% relative humidity, 65°C 96Hour
	16.2g RMS (15-2000Hz) endurance, 1 hour /axis	MTBF	50000 hour min
Connectors:	RF SMA-F / N-F Removable	Case:	Sea Gray Paint
	Power Supply feed in through IF port.	Dimension Size (L x W x H):	133.5mm x 85.5mm x 30.5mm

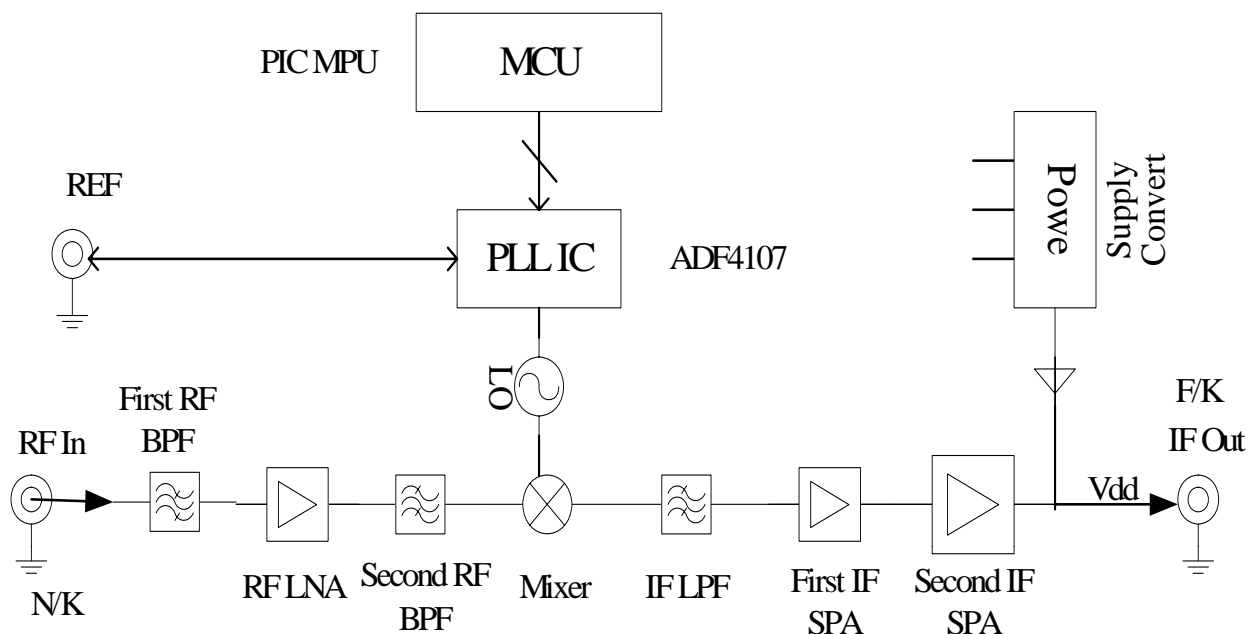
FREQUENCY BLOCK DOWN CONVERTER 14.85GHz-15.35GHz



14.85GHz-15.35GHz DOWNCONVERTER TESTING TABLE

Output IF Frequency (GHz)	Input RF Frequency 14.85GHz				Supply Current (mA)
	Output IF Parameter	-20 Deg	+25 Deg	+70 Deg	
14.85	Gain (dB)	51.32	50.24	50.52	160
	NF (dB)		3.34		
	P1dB (dBm)		13.3		
Output IF Frequency (GHz)	Input RF Frequency 15.05GHz				Supply Current (mA)
	Output IF Parameter	-20 Deg	+25 Deg	+70 Deg	
15.05	Gain (dB)	50.23	51.34	50.55	160
	NF (dB)		3.92		
	P1dB (dBm)		13.33		
Output IF Frequency (GHz)	Input RF Frequency 15.35GHz				Supply Current (mA)
	Output IF Parameter	-20 Deg	+25 Deg	+70 Deg	
15.35	Gain (dB)	51.23	50.45	51.65	160
	NF (dB)		3.92		
	P1dB (dBm)		13.44		

BLOCK DIAGRAM



FREQUENCY BLOCK DOWN CONVERTER 14.85GHz-15.35GHz

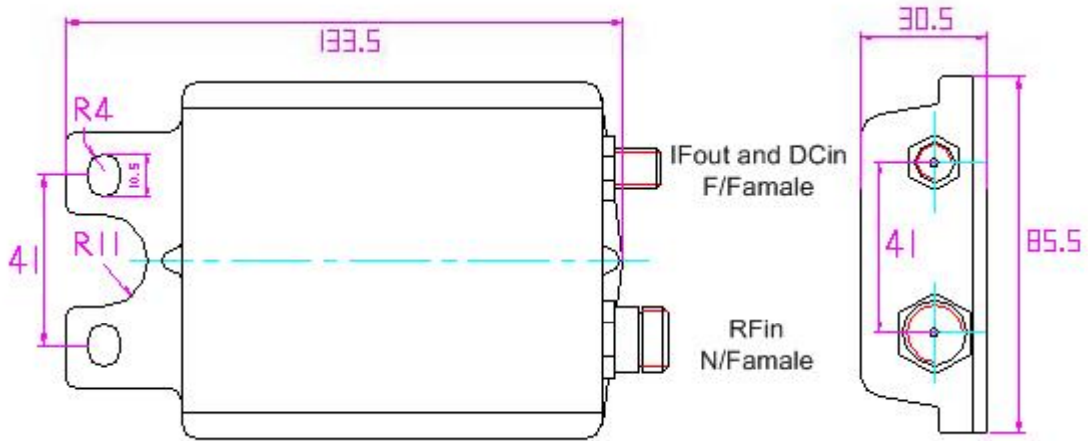


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MECHANICAL DRAWING



FREQUENCY BLOCK DOWN CONVERTER 14.85GHZ-15.35GHZ