DWave S.r.l

Data Sheet Rev 1.0

DW146107 downconverter

Is a downconverter managing Ku band signal into L band.

DW146107 Ku to L Dc

10.7-12.75GHz input
0.9-2.15GHz output

APPLICATIONS

- Ku band LNB
- RF Downconverter

INTERFACE DESCRIPTION

The interface is well described in the following table.

Port Name	Description
Supply	5Vdc typical 100mA
RF input	Ku band input signal
RF output	L band output signal
LB/HB	Digital TTL signal

Module specifications

The specifications provided are measure at a temperature of 25°C

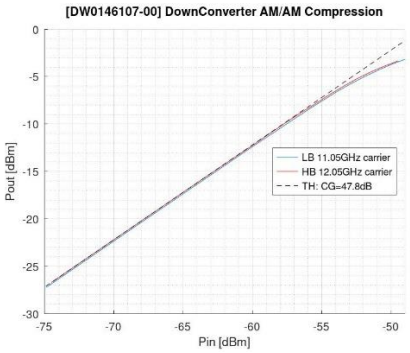
Specifications	Description
Mechanical	Dimensions 100mm (L) x 62mm (W) x 14mm (H)
Input Frequency	10.7GHz (Min) 11.75GHz (Typ) 12.75GHz (Max)
Output frequency	950MHz (Min) 1450MHz (Typ) 2150MHz (Max)
Frequency conversion	-9.750GHz (Low Band) -10.600GHz (High band)
Temperature	Operating -25°C to 85°C Storage -45°C to 125°C
Input dynamic range	-75dBm (Min) -60dBm (Typ) -50dBm (Max)
Output dynamic Range	-27dBm (Min) -12dBm (Typ) -3.5dBm (Max)
Conversion gain	43.6dB (Min) 47.8dB (Typ) 48dB (Max)
DC Power Supply	4.75V (Min) 5.00V (Typ) 5.25V (Max) 100mA (Typ)

Phase Noise Measurements

Frequency	Phase Noise Level
10Hz	-26.4 dBc/Hz
100Hz	-56.8 dBc/Hz
1kHz	-82.5 dBc/Hz
10kHz	-86.2 dBc/Hz
100kHz	-91.0 dBc/Hz
1MHz	-107.0 dBc/Hz
10MHz	-112.2 dBc/Hz

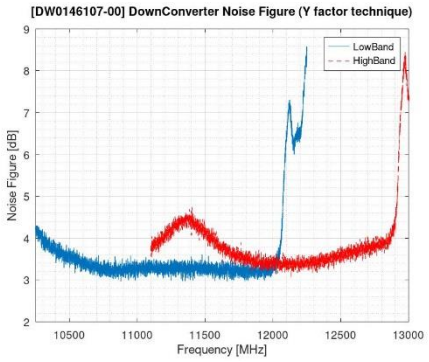
AM/AM Compression

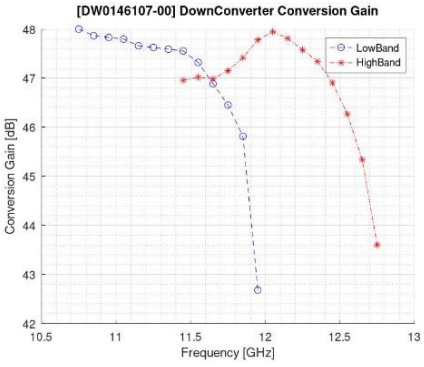
The figure below shows that when input signal is below -55dBm no compression is performed. Output 1dB compression is -5dBm.



Noise Figure

The following figure shows the noise figure measurements using Y-factor method.



Conversion Gain

The following figure shows the conversion gain measurements. Two curves are shown in Low Band and High Band configurations.