

BDC Series

1800-3600MHz Input Block Down Converter

Features

- Input Frequency : 1800 to 3600MHz
- Output Frequency: DC to 1800MHz
- Fixed Local Oscillator: 1800MHz
- Conversion Gain: -3 to +7dB
- Noise Figure: 5dB
- Internal Reference TCXO: 12MHz
- DC Power: 12V
- SMA Connector

Description

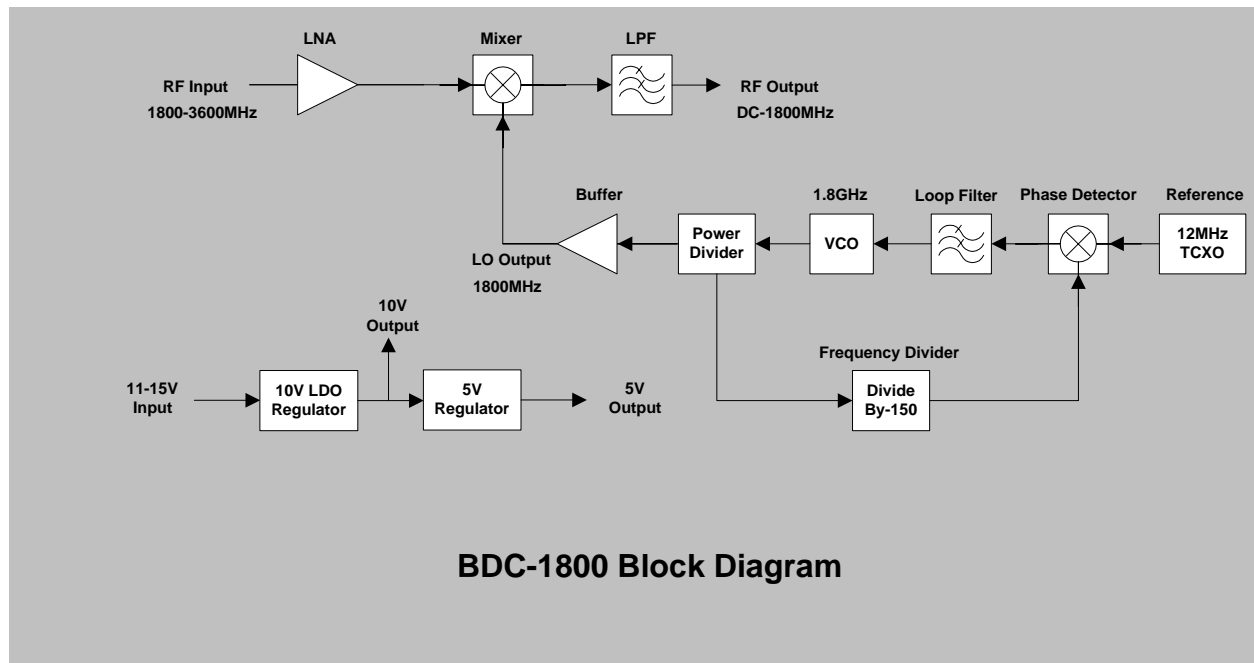
BDC-1800 is a low cost Block-Down Converter, designed for extending 1.8GHz spectrum analyzer measurement range to 3.6GHz.

Electrical Specifications @ +25 °C, $Z_S = Z_L = 50$ Ohms

Parameter	Unit	Minimum	Typical	Maximum
Input Frequency Range	MHz	1800		3600
Output Frequency Range	MHz	DC		1800
Maximum Input Power Level	dBm		-5	
Conversion Gain	dB	-3		+7
Noise Figure	dB		5	
P_{1dB} @ 2.4GHz Input	dBm		0	
Fixed Local Oscillator Frequency	MHz		1800	
Fixed Frequency Divider Ratio			150	
Internal Reference TCXO	MHz		12	
Phase Noise @ 1KHz Offset*	dBc/Hz		-93	
LO Leakage at RF Output	dBm		-19	
Input VSWR			1:1.5	
Output VSWR			1:2.0	
DC Power Supply	V	11	12	15
Supply Current	mA		350	

* Phase Noise is measured at 1800MHz LO

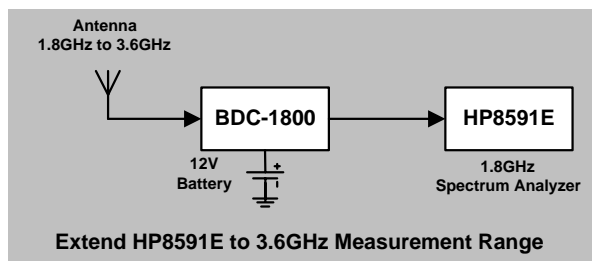
Block Diagram



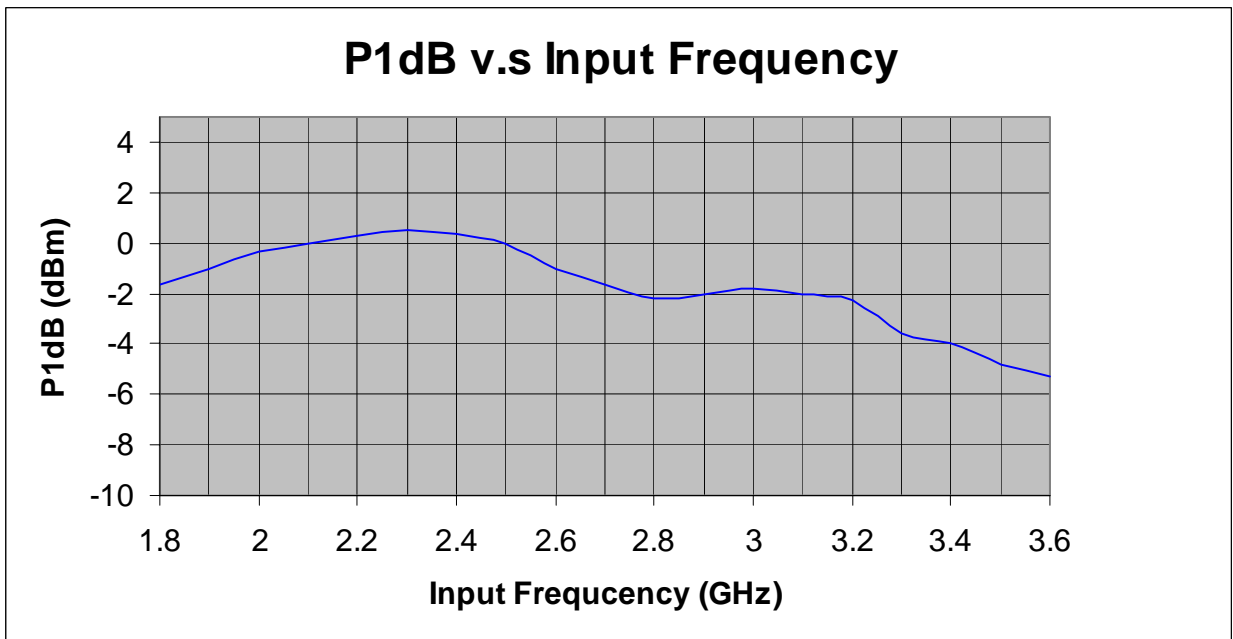
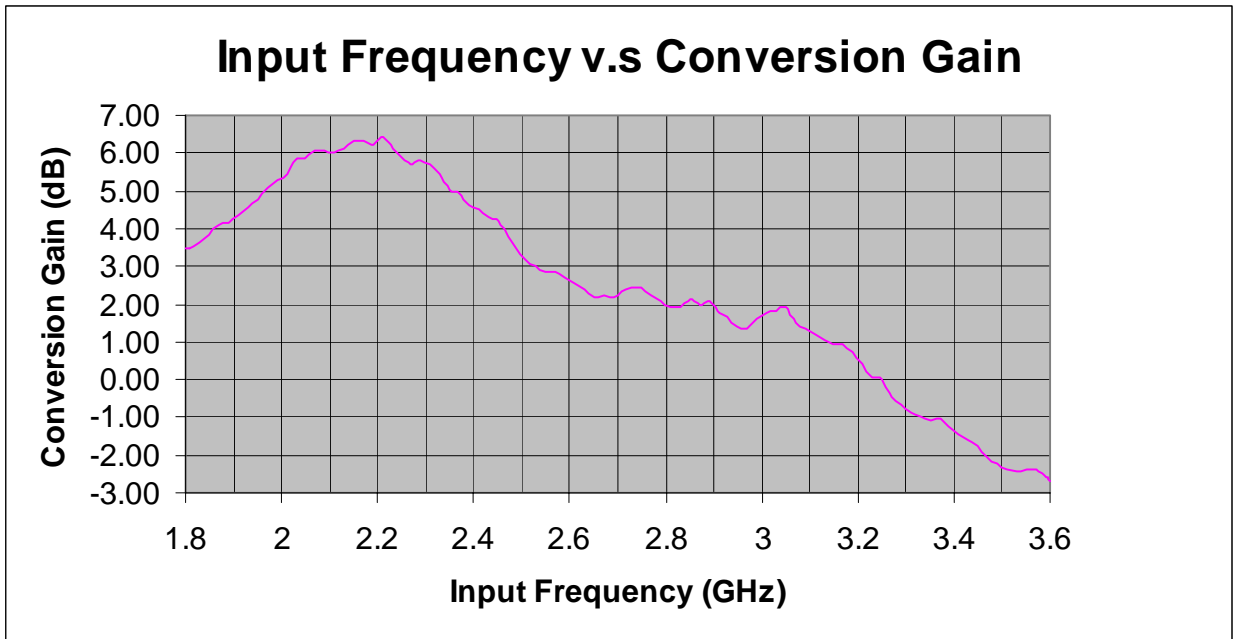
Operation Theory

BDC-1800 Block-Down Converter is designed for using with 1.8GHz spectrum analyzer to extend its operating range to 3.6GHz by converting 1.8GHz-3.6GHz frequency spectrum to DC-1.8GHz frequency spectrum. The internal 1.8GHz local oscillator is phase locked to a 12MHz Temperature Compensated Crystal Oscillator (TCXO). Internal Low-Drop Out (LDO) linear voltage regulator allows unit to operate from 11V to 15V.

Typical Application



Typical Performance @ +25 °C





BDC Series

1800-3600MHz Input Block Down Converter

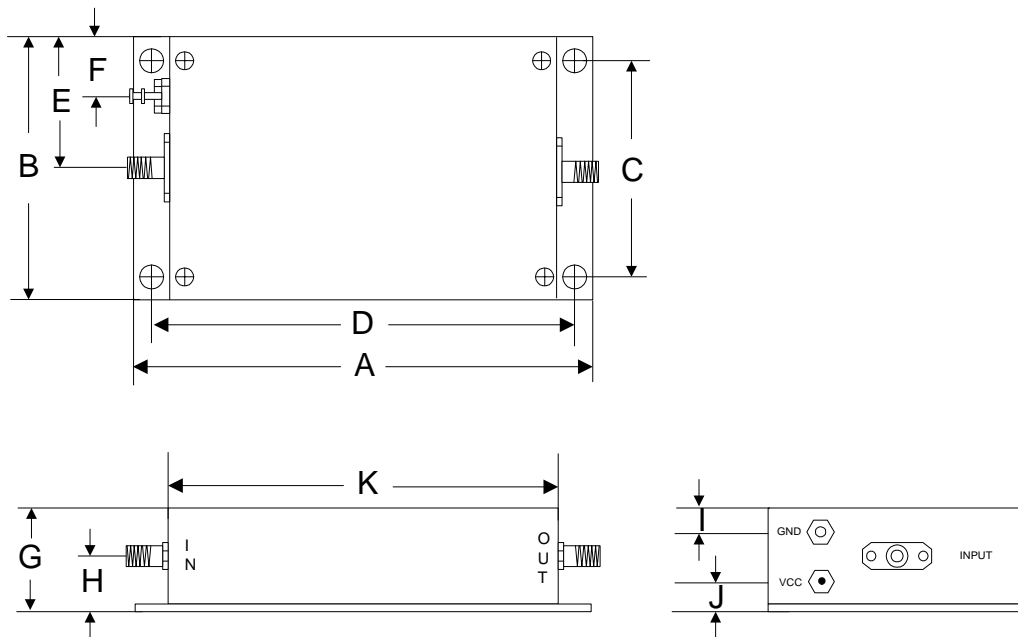
Gain Table @ +25 °C

In(MHz)	Out(MHz)	Gain(dB)	In(MHz)	Out(MHz)	Gain(dB)	In(MHz)	Out(MHz)	Gain(dB)
1801	1	3.48	2410	610	4.5	3030	1230	1.82
1810	10	3.48	2430	630	4.33	3050	1250	1.92
1830	30	3.63	2450	650	4.22	3070	1270	1.53
1850	50	3.85	2470	670	3.78	3090	1290	1.37
1870	70	4.12	2490	690	3.47	3110	1310	1.20
1890	90	4.17	2510	710	3.17	3130	1330	1.06
1910	110	4.38	2530	730	3.00	3150	1350	0.92
1930	130	4.58	2550	750	2.88	3170	1370	0.94
1950	150	4.78	2570	770	2.88	3190	1390	0.72
1970	170	5.09	2590	790	2.72	3210	1410	0.40
1990	190	5.29	2610	810	2.55	3230	1430	0.08
2010	210	5.45	2630	830	2.38	3250	1450	0.02
2030	230	5.82	2650	850	2.17	3270	1470	-0.47
2050	250	5.88	2670	870	2.22	3290	1490	-0.67
2070	270	6.06	2690	890	2.17	3310	1510	-0.84
2090	290	6.08	2710	910	2.33	3330	1530	-0.98
2110	310	6.03	2730	930	2.43	3350	1550	-1.10
2130	330	6.10	2750	950	2.43	3370	1570	-1.05
2150	350	6.35	2770	970	2.25	3390	1590	-1.22
2170	370	6.35	2790	990	2.09	3410	1610	-1.43
2190	390	6.23	2810	1010	1.93	3430	1630	-1.60
2210	410	6.45	2830	1030	1.93	3450	1650	-1.78
2230	430	6.12	2850	1050	2.15	3470	1670	-2.06
2250	450	5.90	2870	1070	2.00	3490	1690	-2.22
2270	470	5.68	2890	1090	2.10	3510	1710	-2.38
2290	490	5.80	2910	1110	1.77	3530	1730	-2.43
2310	510	5.72	2930	1130	1.65	3550	1750	-2.36
2330	530	5.42	2950	1150	1.43	3570	1770	-2.40
2350	550	5.02	2970	1170	1.33	3590	1790	-2.57
2370	570	4.93	2990	1190	1.60	3595	1795	-2.60
2390	590	4.62	3010	1210	1.77	3599	1799	-2.67

Absolute Maximum Ratings

Parameter	Absolute Maximum
Input Power	+20dBm
Supply Voltage	+16V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C

Outline



	A	B	C	D	E	F	G	H	I	J	K
Inch	3.750	2.000	1.750	3.400	1.000	0.400	0.813	0.375	0.300	0.238	3.000
mm	92.25	50.80	44.45	86.36	25.40	10.16	20.64	9.53	7.62	6.03	76.20