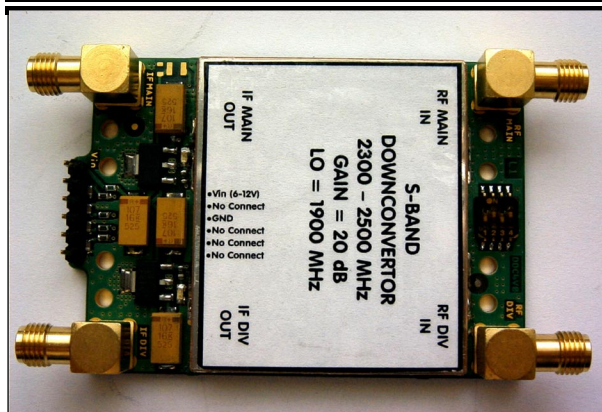


DDC4V0 2.4GHz→450MHz DATASHEET



Applications

- OFDM Wireless Camera Systems
- Broadcast Industry
- OEM Equipment/System Builders

Features

High performance Main and Diversity channels

Built-in RF Filtering helps reject unwanted signals

No external programming required - 16 Channels user selectable via dipswitch

Very Small footprint 47mm x 68mm x 12mm

Phantom power capable (optional) via the IF Main output port

Access to SPI interface provides synthesiser control if desired

Description

The Dual Downconverter (DDC) provides two Downconverters utilising a single on-board lowside Local Oscillator. The DDC is supplied with 16 pre-programmed frequency channels, which are selectable by means of a 4 way dual-in-line switch, located between the RF input connectors. Frequencies and channel spacing for the 16 channels can be changed on request.

Alternatively the synthesiser can be programmed directly using the SPI interface available via the 6 pin header.

Power and logic control is supplied via a 6 pin 2.54mm pitch header. The DDC also optionally supports phantom power feed by injecting the supply voltage onto the IF Main output from the receiving end. This allows the DDC to be installed close to the antenna allowing the effects of cable loss to be reduced.

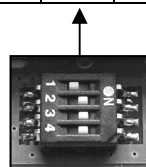
LEDs provide power good indication for each Downconverter channel.

Channel Selection

The LO frequency is selected by setting DIP switch (SW) as shown in the table below:-

SW#	CHANNEL NUMBER															
	0	1	2	3	4	5*	6	7	8	9	10	11	12	13	14	15
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
2	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
3	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
4	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
LO Freq	1950	1940	1930	1920	1910	1900	1890	1880	1870	1860	1850	1840	1830	1820	1810	1800

This example shows DIP switch set to channel 7



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Example:-

The IF output frequency versus channel number for an RF Freq of 2.400GHz is shown in the table below:-

PORT	CHANNEL NUMBER															
	0	1	2	3	4	5 •	6	7	8	9	10	11	12	13	14	15
RF	Frequency (MHz)															
IF	2400															
	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600

- Indicates default setting

RF Inputs

RF inputs are made via right angle SMA connectors. These can be changed to MCX, or other compatible connectors on request.

IF Outputs

IF outputs are made via right angle SMA connectors. These can be changed to MCX, or other compatible connectors on request.

Power/Logic Connections

These are made via a 6 pin single-in-line 2.54mm pitch header (PL1)

The pin-outs are given below. (Pin 1 is indicated by the marking 'Vin')



Pin Number	Signal	Description
1 ('Vin')	+V	Positive Supply Input 6.5V to 12V max (400mA max)
2	SPI_LE	SPI Latch Enable Input (3.3V logic)
3	GND	Negative Supply Input
4	/EXT	External SPI Interface Enable. Must be tied low when using external SPI interface
5	SDI	SPI Serial Data Input (3.3V logic)
6	SCLK	SPI Serial Clock Input (3.3V logic)

Specifications

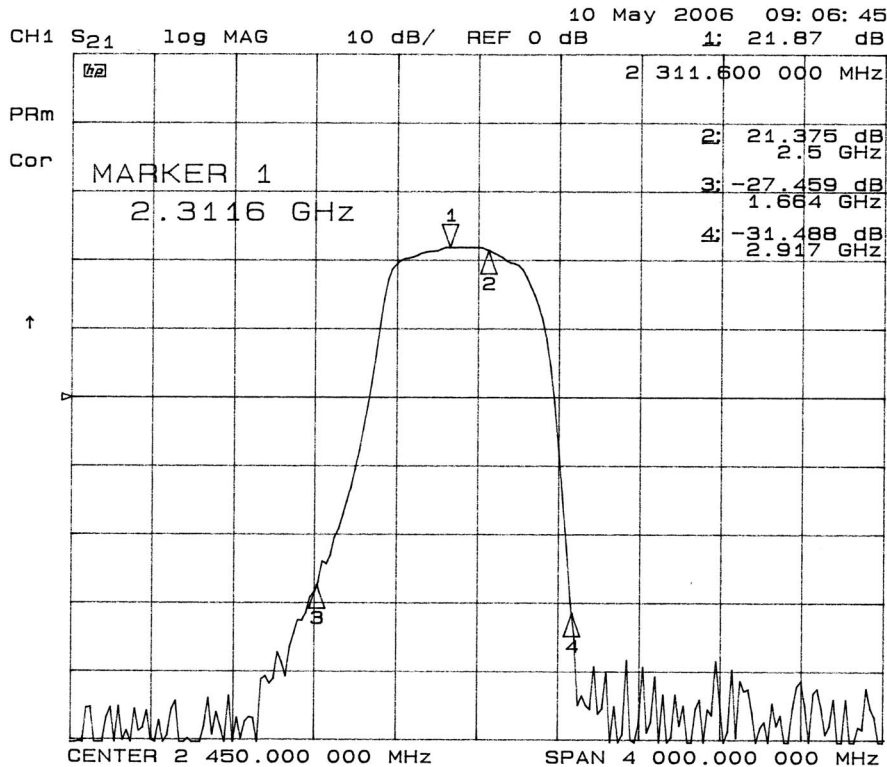
Parameter	MIN	TYP	MAX	UNITS	NOTES
RF i/p operating frequency range	2300		2500	MHz	
IF o/p frequency range	350		600	MHz	
Conversion Gain		20		dB	Can be factory configured from +10dB (+/-1dB) to +20dB (+/-1dB)
NF		2		dB	
Linearity (-20dBm input)			-45	dBc	ACPR @5MHz offset WCMA
LO SSB phase noise @10khz		-90		dBc/Hz	
LO frequency programmability	1800	1870	1950	MHz	10MHz channel spacing on standard unit
Operating Voltage	6	6.5	12	Volts (dc)	If operated at >8V then additional heatsinking is recommended
Operating Current		380	400	mA	
Phantom Power Operating Voltage	6	6.5	12	Volts (dc)	
Phantom Power Operating Current		380	400	mA	
Spurious Emissions RF Port			-57	dBm	
Spurious Emissions IF Port			-57	dBm	
Frequency Stability		+/-3		ppm	(-10 to +70°C)
Operating Temperature	-10		+70	°C	With adequate heatsinking
Dimensions	W = 47	L = 68	H =12	mm	Including the height of SMA connectors

NOTES

Phantom Power Operation: Additional components need to be fitted to allow phantom power operation. Please consult coherenceRF Ltd about this.

RF Connectors: The unit is fitted with Right Angled SMA connectors as standard. Alternative connectors with similar footprints i.e. MCX can be fitted on request.

Typical Filter Response



We are continuously extending our product range, so if you cannot see a suitable module please contact us for a more up to date product list.

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