8500–10500 MHz X-Band RF Downconverter with Internal LO and AGC



LCMIXD-8500-10500 converts 8500–10500 MHz RF signals to a 1200 MHz typical intermediate frequency. The module integrates a low-noise amplifier, mixer, internal 7300–9300 MHz local oscillator and variable-gain amplifier with automatic output-level control.

Typical operating voltage is 5 V and typical dynamic current is 700 mA. The source specifies a 3 dB maximum noise figure and a 25 dBm minimum output third-order intercept point. The 110 × 63 × 16 mm body has SMA-K female RF-input and IF-output connectors, with supply and SPI signals on a PHD-2*5AWD connector.

Electrical specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
RF input frequency	BW	8500	-	10500	MHz
RF input power range	Pin	-85	-	-35	dBm
IF output frequency	BW	-	1200	-	MHz
IF output power range	Pout	-3	-	0	dBm
AGC settling time	T	-	20	-	µs
Noise figure	NF	-	-	3	dB
Output third-order intercept point	OIP3	25	-	-	dBm
Internal LO frequency	BW	7300	-	9300	MHz
LO frequency tuning step	-	-	10	-	MHz
Operating voltage	VDC	-	5	-	V
Dynamic current	IDD	-	700	-	mA

Absolute maximum ratings

Parameter	Value	Unit
Absolute maximum supply voltage	+7	V
Absolute maximum RF input power	+12	dBm

Environmental limits

Parameter	Value	Unit
Operating temperature	–40–+70	°C
Storage temperature	–40–+85	°C

Interfaces

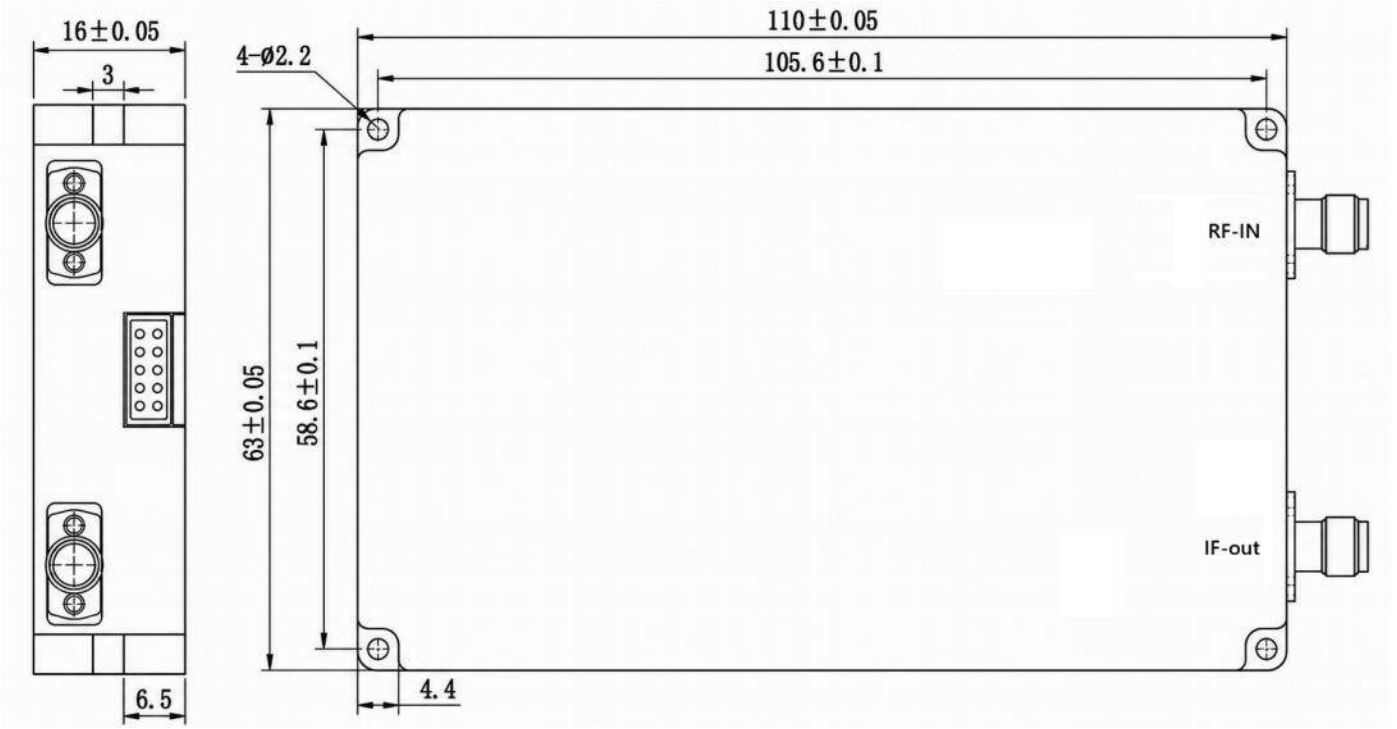
Interface	Specification
RF input connector	SMA-K female
IF output connector	SMA-K female
Power and control connector	PHD-2*5AWD

Power and control pin assignments

Pin #	Assignment
Pin 1	+5 V
Pin 2	+5 V
Pin 3	GND
Pin 4	GND
Pin 5	SPI SCK
Pin 6	SPI CSB
Pin 7	SPI MOSI
Pin 8	SPI MISO

Mechanical specifications

Parameter	Value	Unit
Body dimensions	110 × 63 × 16 (Body only, excluding connector protrusions; each outer dimension has ±0.05 mm tolerance.)	mm
Mounting-hole centre spacing	105.6 × 58.6 (Centre spacing; ±0.1 mm tolerance on each axis.)	mm
Mounting holes	4 × Ø2.2	mm



Document notice

Specifications are subject to revision. Before design release, confirm the current document revision and product-specific requirements with LCRF. The approved quotation and order documentation define the supplied configuration.