

22–44 GHz Four-Output Local Oscillator Module

Four-output LO module with tunable 22–44 GHz RF11/RF12 paths and fixed 20.2 GHz RF21/RF22 paths. The paired outputs share a 100 MHz external reference and 3-wire SPI control.



Reference input REF

Parameter	Value	Unit
Reference frequency	100	MHz
Reference input power	5–10	dBm
Reference phase noise @ 100 Hz	≤-130	dBc/Hz
Reference phase noise @ 1 kHz	≤-150	dBc/Hz
Reference phase noise @ 10 kHz	≤-165	dBc/Hz
Reference phase noise @ 100 kHz	≤-165	dBc/Hz

Tunable RF outputs RF11/RF12

Parameter	Value	Unit	Notes
Tunable output frequency	22–44	GHz	-
Tunable output power	0 ±2	dBm	Supplied characterization: 22–40 GHz.
Frequency step	1	MHz	Supplied characterization: 22–40 GHz.
Frequency switching time	≤200	μs	Supplied characterization: 22–40 GHz.
Tunable-output phase noise @ 100 Hz	≤-70	dBc/Hz	Supplied characterization: 22–40 GHz.
Tunable-output phase noise @ 1 kHz	≤-81	dBc/Hz	Supplied characterization: 22–40 GHz.
Tunable-output phase noise @ 10 kHz	≤-88	dBc/Hz	Supplied characterization: 22–40 GHz.
Tunable-output phase noise @ 100 kHz	≤-92	dBc/Hz	Supplied characterization: 22–40 GHz.
Tunable-output phase noise @ 1 MHz	≤-103	dBc/Hz	Supplied characterization: 22–40 GHz.
Tunable-output spurious	≤-60	dBc	Supplied characterization: 22–40 GHz.
Isolation between paired tunable outputs	≥10	dBc	Supplied characterization: 22–40 GHz.

Fixed RF outputs RF21/RF22

Parameter	Value	Unit
Fixed output frequency	20.2	GHz
Fixed output power	0 ±2	dBm
Fixed-output phase noise @ 100 Hz	≤-75	dBc/Hz
Fixed-output phase noise @ 1 kHz	≤-87	dBc/Hz
Fixed-output phase noise @ 10 kHz	≤-94	dBc/Hz
Fixed-output phase noise @ 100 kHz	≤-96	dBc/Hz
Fixed-output phase noise @ 1 MHz	≤-106	dBc/Hz
Fixed-output spurious	≤-65	dBc
Isolation between paired fixed outputs	≥10	dBc

Power and control interfaces

Parameter	Value	Unit
Supply voltage VCC	12 ±0.5	V
Supply current	≤0.95	A
LD voltage, locked	2.7–3.5	V
LD voltage, unlocked	≤0.5	V
Control interface	3-wire SPI: LE, DAT, CLK	-
Maximum SPI clock	10	MHz
Logic level	3.3	V
Data format	16 bits; MSB first	-
REF connector	SMA-K	-
RF output connectors	2.92-K	-
Power/control pin diameter	Ø0.6	mm
Factory debug pins CD/CK	Leave floating	-

Mechanical specifications

Parameter	Value	Unit
Body dimensions	95 × 65 × 12	mm
Weight	≤130	g
Housing material and finish	Aluminum; natural conductive anodizing	-
Table dimensional tolerance	±0.2	mm

Mechanical specifications

Parameter	Value	Unit
Dimension inspection rule	Only *marked dimensions inspected	-

Environmental specifications

Parameter	Value	Unit
Operating temperature	-40–+75	°C
Storage temperature	-55–+85	°C

Absolute maximum and assembly limits

Parameter	Value	Unit
Maximum VCC input voltage	18	V
Maximum reference input power	14	dBm
Pin soldering limit	10 s at 300 °C	-

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.