ERZIA
DATASHEET FAMILY

Frequency Converters

Up & Down Converter Family



Up & Down Converters

ERZIA designs and manufactures frequency converters from L-band to Q/V-band: narrowband block up-converters (BUC) and low noise block down-converters (LNB), and wideband up & down converters. All models share a hi-reliability construction and are tailored in frequency plan, power level and interfaces.

Main Features:

- Up, down and up & down conversion
- RF from 7.9 GHz up to 48 GHz
- IF from L-band (950-1950 MHz) to 16.5 GHz
- Output power up to 46 dBm (Psat)
- Noise figure down to 1.5 dB (Ka LNB)
- Adjustable gain and RS422 telemetry
- Internal PLL or external reference
- Coaxial and waveguide interfaces
- Hi-reliability and dedicated screening

Typical applications:

- Satcom ground, mobile and airborne terminals
- Telemetry and Earth observation ground stations
- Spectrum monitoring and test instrumentation

Family Overview

Type	Conversion	RF range	IF range	Output power	Key figures
Up / Down Narrowband (BUC / LNB)	Up or Down	7.9-8.4 GHz (X) 17.7-21.2 / 27.5-31 GHz (Ka) 37.5-42.5 / 47.75-48.25 GHz (Q/V)	0.95-1.95 GHz 1.25-1.75 GHz	Psat up to 46 dBm	Gain 45-75 dB adjustable
Up / Down Wideband	Up + Down	18-40 GHz	2-16.5 GHz	+3 to +20 dBm	Both paths in one module or individual up / down

COTS Converters

Model	Type	Input (GHz)	Output (GHz)	Inst. BW	NF typ (dB)	Output power (dBm)	Gain (dB)	Max. input
ERZ-UPC-0790-0840-10	NB Up	0.95-1.45	7.9-8.4	500 MHz	-	Psat 10	14 ± 1 (att. > 30 dB)	+10 dBm
ERZ-BUC-0790-0840-46	NB Up	0.95-1.45	7.9-8.4	500 MHz	-	Psat 46	68	+10 dBm
ERZ-BUC-2750-3100-43	NB Up	0.95-1.95	27.5-31	1 GHz	-	Psat 42 Plin 40	45 to 75	0 dBm
ERZ-BUC-2750-3100-46	NB Up	0.95-1.95	27.5-31	1 GHz	-	Psat 45 Plin 40	45 to 75	0 dBm
ERZ-BUC-2800-3000-43	NB Up	0.95-1.95	28-30	1 GHz	-	Psat 42 Plin 40	45 to 75	0 dBm
ERZ-BUC-4775-4825-37	NB Up	1.25-1.75	47.75-48.25	500 MHz	-	Psat 37	51	0 dBm
ERZ-BUC-3750-4250-39	NB Up	0.95-1.95	37.5-42.5	1 GHz	-	Psat 39 Plin 36	50	0 dBm
ERZ-LNB-1770-2120-75-1.5	NB Down	17.7-21.2	0.95-1.95	1 GHz	1.5	Psat 17	45 to 75	0 dBm
ERZ-LNB-3750-4250-50-3	NB Down	37.5-42.5	1.25-1.75	500 MHz	2.5	Psat 17	55	0 dBm
ERZ-DWN-1800-4000-16	WB Down	18-26 25.5-40	2-10 2-16.5	Full band	< 15.5	Psat 4	16 ± 3.5	+15 dBm
ERZ-UDC-1800-4000-19	WB Up	2-16.5	18-40	Full band	-	Psat 22	30 ± 3	+15 dBm
	WB Down	18-40	2-16.5	Full band	< 22	Psat 12	17	+15 dBm

NB = narrowband (fixed band, L-band IF) · WB = wideband (full K/Ka coverage, multi-GHz IF).
Typical values at 25 °C case temperature.

Narrowband Platform

Feature	Value
Channel selection	Selectable sub-bands
Gain control	45 to 75 dB adjustable
Frequency reference	External 10 or 50 MHz through the IF connector, or internal (optional)
Monitoring & control	RS422 serial interface: temperature and current monitoring, PLL lock, mute, power detector, band status
Interfaces	IF: SMA (F), N-type option RF: Waveguide/Coaxial
DC supply	24 to 32 V (BUC) · 15 to 18 V (LNB)

Wideband Converter

Feature	Value
Sub-bands	18-26 GHz and 25.5-40 GHz, electronically selected
Isolation between sub-bands	60 dB min
Image rejection	50 dBc min
Input power handling	+15 dBm CW without damage
Blanking	> 35 dB, 65 ns ON/OFF – Option
Built-in test	Internal test signal generator - Option
Configuration	Both conversion paths in one housing or individual up / down converters

Configuration Options

Option	Available configurations
Frequency plan	RF and IF bands and sub-band
Local oscillator	Internal PLL synthesiser or external LO input
Reference	Internal, or external 10 / 50 MHz through the IF connector
Output power	From low-level exciters (-5.5 dBm P1dB) to 40 W Psat in Ka-band
Gain control	Fixed gain or digital attenuator, mute, blanking
Monitoring & control	RS422 serial interface, alarms and telemetry
RF interfaces	SMA, 2.92 mm, N-type, TNC and waveguide (WR-19 to WR-42)
DC supply	Single supply, 15 to 32 V depending on model
Channels	Single or multi-channel

- Options are subject to engineering review. Contact sales@erzia.com.

Environmental Specifications (By Design, typical)

Operating Temperature:	-55 to +85 °C [1]	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

[1] Maximum operating case temperature is +70 °C on some models; see each model datasheet.

RoHS & REACH Compliance

This part is compliant with EU 2011/65/UE RoHS (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) and REACH (Registration, Evaluation, Authorization and restriction of Chemical substances) directives.



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