


# Ku LNB 10.70-12.75 GHz 2-8 Band

## Key features



- Excellent Phase Noise
- Auto LO ref Ext 10 MHz / Internal  $\pm 2.5$  ppm
- New future-proof technology platform
- Alarm and Monitoring & Control as option
- Wide IF range 950-2150 MHz
- Lower power consumption 

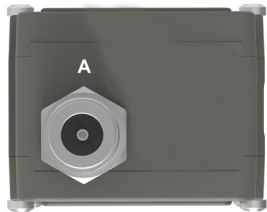


### Description

This upgrade of the bestseller Ku Multiband (also known as Q-PLL) is build on our new innovative technology platform enabling new features and improved performance. This product is switchable and ideal for full freedom of sub-bands available. Designed for single band or multiple bands. Extended IF range 950-2150 MHz.

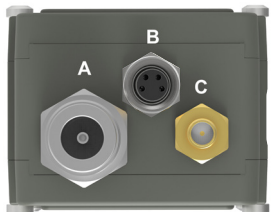
Legacy Voltage/Tone switching or optional Monitoring & Control functionality you are free to switch sub-band via Modbus RS485 and to monitor several performance parameters. Also the configurable Alarm output alerts you if the signal reception is lost or the external 10 MHz LO reference disappear. Alarm triggers can be used in redundancy control applications.

LNB connector (standard)



**Connector A (standard)**  
Type: N-f, (option F-f or SMA-f)  
Functions: L-Band out, DC in, External 10 MHz in

LNB connectors (optional)



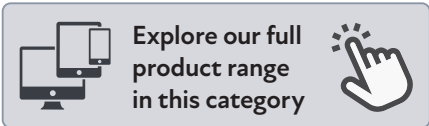
**Connector B (optional)**  
Type: M8 female, 4 pin, A-coded  
Functions: Alarm and M&C

Connector B (optional)



- 1 = Alarm open collector (max. 200 mA) or optionally DC input.
- 2 = A pos+ RS485
- 3 = B neg- RS485
- 4 = Common (GND)
- 5 = Shield

**Connector C (optional)**  
Type: SMA-f only  
Functions: Ext. 10 MHz in and/or DC input



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## Technical specifications

Parameter		
MODELS	Freq. GHz	9.75, 10.00, 10.25, 10.50, 10.60, 10.75, 10.80, 10.90, 11.00, 11.05, 11.25, 11.30 GHz or customized LO
	LO frequencies	Multiband Any combination of above LOs, max 8 Bands (legacy mode), examples next page
	Band Switching	Legacy 13/15/18/24 V and 22 kHz tone or via RS485 Modbus RTU (option)
INPUT	Input	WR75 / R120. PBR120 flange
	Frequency range	Within 10.70 to 12.80 GHz
	Pressurizable	0.1 bar max.
	Input max power	0 dBm instantaneous (not continuous)
	DC Input	nom. +12 to +24 V (11V min., 26V max.) through output connector or separate connector (SMA). 5W max.
	Input VSWR	3.0:1 max.
INTERNAL	LO ref.	Auto LO switch External 10 MHz ref / Internal $\pm 2.5$ ppm -40 to +80°C
	Ext. 10 MHz ref.	Sinus wave, input level -10 dBm to +10 dBm through output connector or optionally via separate SMA connector. Frequency stability with Ext. reference is less than 10 Hz from the Reference source.
	LO Leakage	-60 dBm max. @ waveguide input
	Gain	60 dB typ. (55dB min.)
	Flatness each band	$\pm 1.5$ dB max.
	Noise figure	0.8 dB / 59 K typ., 1.0 dB / 75 K max.
	Phase Noise	10 Hz -35dBc/Hz • 100 Hz -65dBc/Hz • 1 kHz -82dBc/Hz • 10 kHz -86dBc/Hz • 100kHz -95dBc/Hz • 1MHz -120dBc/Hz (max.)
	Image Rejection	30 dB min. (20 dB min. @ LO 11.30 GHz)
	Out of band rejection	20 dB min.
	Desensitization	max. -35 dBm, the absolute level out of band that increases NF by 0.1 dB in the band 13.75-14.50 GHz (uplink Ku).
	Spurious in band	W/o signal -75 dBm max. With -10 dBm output signal -65 dBc max. @ $f_c > \pm 1$ MHz and -60dBc max. @ $\leq \pm 1$ MHz.
Group delay	max. +/- 0.25ns @ 50 MHz BW, max. +/- 1ns @ each band	
OUTPUT	IF output range	950-2150 MHz
	Output P1dB	+15 dBm min.
	Output IP3	+25 dBm min.
	Output VSWR	1.7:1 max. (N and SMA connector), 2.3:1 max. (F connector)
	Output Connector	N-type 50 $\Omega$ , SMA-type 50 $\Omega$ or F-type 75 $\Omega$
GENERAL	Alarm functions (option)	Sum alarm, set via M&C to alarm in any combination of: LNA failure, Total current, LO lock (Ext/Int/n/a), signal power high/low, Supply voltage low. Open collector 3.3 to 28 V, max. 200 mA (pull-up 10 k Ohm at host side), pin 1 in M8 connector.
	M & C functions (option)	Via MODBUS RTU RS485 electrical interface, see document <a href="#">Monitoring and Control technical interface</a> for details. NOTE! Mates with M8 male connector/Cable, use only shielded cables
	Dimensions	128 x 56 x 47 mm (LNB with N-connector)
	Weight	370 g (LNB with N-connector)
	Temperature range	Storage and operating: -40 to +80°C, -40 to +176°F
	MTBF	MTBF as per MIL-HDBK-217F Notice 2: Environmental Condition GF (Ground Fixed): >690000 hours, Environmental Condition AIC (Airborne, Inhabited, Cargo): >360000 hours, Quality level: Commercial, Temp used for MTBF calculation: +35 C Ambient
	Miscellaneous	Enclosed conductive O-ring, hex head mounting screws (M4 x 10) 4 pcs (for LNB)
OPTIONS	Options	<ul style="list-style-type: none"> <li>- Separate SMA connector for DC input or Ext. 10 MHz reference</li> <li>- Custom LOs and input frequencies (within 10.70 to 12.80 GHz)</li> <li>- Fixing Points</li> <li>- Alarm and M&amp;C</li> </ul>

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## Model examples

2-BAND				
Type	Band	LO	Ku-band (GHz)	L-band (MHz)
A	1	10.00	10.95-11.70	950-1700
	2	11.00	11.95-12.75	950-1750
B	1	10.00	10.95-11.70	950-1700
	2	10.75	11.70-12.75	950-2000
C	1	9.75	10.70-11.70	950-1950
	2	10.75	11.70-12.75	950-2000
D	1	10.00	10.95-11.75	950-1750
	2	10.80	11.75-12.75	950-1950
E	1	9.75	10.70-11.70	950-1950
	2	10.60	11.70-12.75	1100-2150
G	1	10.00	10.95-11.70	950-1700
	2	11.30	12.25-12.75	950-1450
W	1	10.50	11.45-11.95	950-1450
	2	11.30	12.25-12.75	950-1450
Z	1	10.00	10.95-11.85	950-1850
	2	10.90	11.85-12.75	950-1850

SWITCHING			
Option	Band	Voltage	Tone
V	1	13 V	
	2	18 V	
T	1	12-20 V	
	2	12-20 V	22 kHz

DC Voltage tolerances	
Nominal Voltage	Tolerance
13 V	11.5 to 14.5 V
18 V	16.0 to 20.0 V

DC Voltage tolerances	
Nominal Voltage	Tolerance
13 V	11.5 to 17.5 V
24 V	18.0 to 26.0 V

22 kHz switching	
Tolerance	22 kHz $\pm$ 4 kHz
Amplitude Voltage	600 mV $\pm$ 200mV
Duty cycle	40 to 60 %

Sub-band switching via Modbus RS485 according to the Modbus register map for these products. Find the product at <https://smw.se>

3-BAND				
Type	Band	LO	Ku-band (GHz)	L-band (MHz)
F	1	10.00	10.95-11.70	950-1700
	2	10.75	11.70-12.20	950-1450
	3	11.25	12.20-12.75	950-1500
H	1	10.00	10.95-11.70	950-1700
	2	10.75	11.70-12.25	950-1500
	3	11.30	12.25-12.75	950-1450
I	1	9.75	10.70-11.70	950-1950
	2	10.75	11.70-12.20	950-1450
	3	11.25	12.20-12.75	950-1500
J	1	10.00	10.95-11.70	950-1700
	2	10.60	11.55-12.25	950-1650
	3	11.05	12.00-12.75	950-1700
K	1	10.00	10.95-11.70	950-1700
	2	10.60	11.55-12.25	950-1650
	3	11.25	12.20-12.75	950-1500
L	1	9.75	10.70-11.80	950-2050
	2	10.00	10.95-12.10	950-2100
	3	10.60	11.70-12.75	1100-2150
S	1	9.75	10.70-11.70	950-1950
	2	10.60	11.70-12.70	1100-2100
	3	11.30	12.25-12.75	950-1450
U	1	9.75	10.70-11.45	950-1700
	2	10.50	11.45-12.20	950-1700
	3	11.25	12.20-12.75	950-1500
T	1	9.75	10.70-11.70	950-1950
	2	10.75	11.70-12.25	950-1500
	3	11.30	12.25-12.75	950-1450
Y	1	10.00	10.95-11.85	950-1850
	2	10.90	11.85-12.75	950-1850
	3	11.30	12.25-12.75	950-1450

SWITCHING			
Option	Band	Voltage	Tone
VT	1	13 V	
	2	13 V	22 kHz
	3	18 V	
V	1	13 V	
	2	15 V	
	3	18 V	
V 24V	1	13 V	
	2	18 V	
	3	24 V	

DC Voltage tolerances	
Nominal Voltage	Tolerance
13 V	11.5 to 13.9 V
15 V	14.2 to 16.3 V
18 V	16.6 to 20.0 V
24 V	20.3 to 26.0 V

4-BAND				
Type	Band	LO	Ku-band (GHz)	L-band (MHz)
M	1	9.75	10.70-11.20	950-1450
	2	10.25	11.20-11.70	950-1450
	3	10.75	11.70-12.25	950-1500
	4	11.30	12.25-12.75	950-1450
N	1	9.75	10.70-10.95	950-1200
	2	10.00	10.95-11.70	950-1700
	3	10.75	11.70-12.25	950-1500
	4	11.30	12.25-12.75	950-1450
O	1	9.75	10.70-11.20	950-1450
	2	10.25	11.20-11.70	950-1450
	3	10.75	11.70-12.20	950-1450
	4	11.25	12.20-12.75	950-1500
P	1	10.00	10.95-11.45	950-1450
	2	10.50	11.45-11.95	950-1450
	3	10.75	11.70-12.20	950-1450
	4	11.25	12.20-12.75	950-1500
R	1	10.00	10.95-11.70	950-1700
	2	10.75	11.70-12.25	950-1500
	3	11.30	12.25-12.75	950-1450
	4	9.75	10.70-11.70	950-1950
V	1	9.75	10.70-11.50	950-1750
	2	10.00	10.95-11.75	950-1750
	3	10.50	11.45-12.25	950-1750
	4	11.05	12.00-12.80	950-1750

SWITCHING			
Option	Band	Voltage	Tone
VT	1	13 V	
	2	13 V	22 kHz
	3	18 V	
	4	18 V	22 kHz

DC Voltage tolerances	
Nominal Voltage	Tolerance
13 V	11.5 to 14.5 V
18 V	16.0 to 20.0 V

C-BAND

X-BAND

KU-BAND

KA-BAND

Q/V-BAND

RFoFIBER

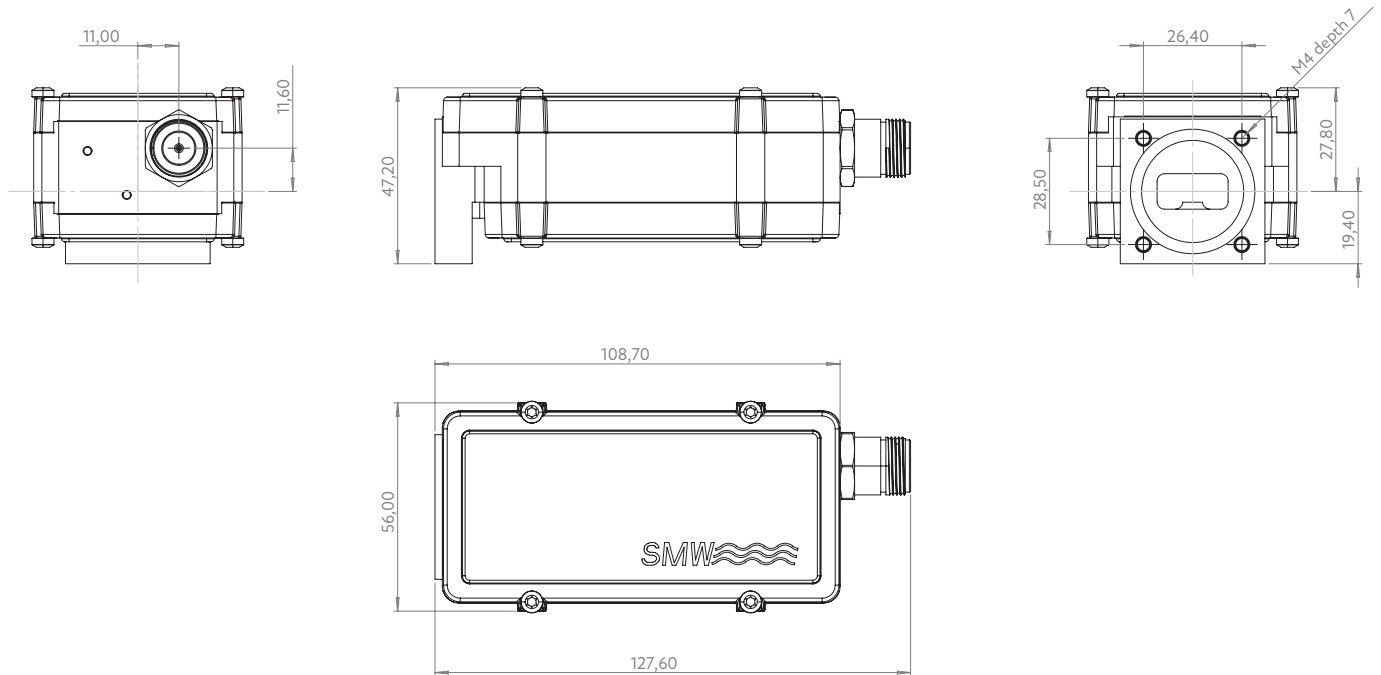
L-BAND

EXT REF

OTHER

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## Technical Drawing



Professional Satcom Frequency Converters & Components. All products are fully CE and RoHS compliant and every device includes full documentation of performance tests and quality control. Please contact [sales@smw.se](mailto:sales@smw.se) to configure or customize to your needs. Visit [smw.se](http://smw.se) or scan QR code to see our full product range and request a quick quote.

