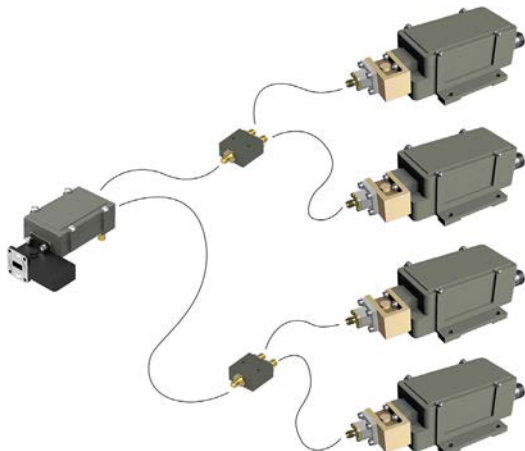


Ka System 17.30-22.30 GHz Quad

Key features



HF cables and DC cable included

- Auto LO ref Ext. 10 MHz, fallback to Internal ref
- Full Ka Receive band coverage
- High P1dB and IP3
- Excellent Phase noise meets all profiles of DVB-S2X.
- Customized LO as option
- Alarm and Monitoring & Control as option



Description

The Ka-Band Quad System provides full coverage of the Ka receive band. The system consists of Ka LNA Wide-band with waveguide isolator, Ka BDC's with waveguide isolators and matched HF cables. Excellent Phase Noise to support all profiles of DVB-S2X services.

Options include customized LO, customized frequency ranges, customized gain, separate DC power input and separate input for the external 10 MHz reference. As an option the SMW M&C interface provides possibility to daisychain several units in one Modbus RTU RS485 network for the optional Alarm and Monitoring & Control functionality.

BDC connector (standard)



Connector A (standard)

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

BDC 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

Ka System 17.30-22.30 GHz Quad

Technical specifications

MODEL		17.30 - 22.30 GHz			
INPUT	Input frequency	BDC 1: 17.30-18.55 GHz	BDC 2: 18.55-19.80 GHz	BDC 3: 19.80-21.05 GHz	BDC 4: 21.05-22.30 GHz
	LO frequency	BDC 1: 16.35 GHz	BDC 2: 17.60 GHz	BDC 3: 18.85 GHz	BDC 4: 20.10 GHz
	Input LNA	Waveguide WR 42 / R 220. Flange PBR 220.			
	Input BDC	SMA female 50Ω			
	DC Input BDC	+12 to +24 V through output connector or separate SMA connector (optional), power consumption 5W typ.			
	DC input LNA	+12 to +24 V / 110 mA typ. Supplied through separate SMA connector via included DC cable, mated from BDC # 1			
	Input VSWR LNA	1.35:1 max. with Isolator (included)			
INTERNAL	LO ref.	Auto LO ref. External 10 MHz ref / Internal ±2.5 ppm -40 to +80°C			
	External LO ref.	Sine wave, Level -10 to +10 dBm. Supplied through output connector.			
	LO Leakage	-60 dBm max. @ RF input, -40 dBm max. @ IF output			
	Gain	60 dB typ. (55dB min.)			
	Gain variation over 24h	±0.1 dB @ 23°C			
	Flatness	±0.4 dB within 30 MHz, ±2 dB max. over each band			
	Noise figure	1.8 dB / 149 K typ.			
	Group Delay	±1 ns max.			
	Phase Noise	-35 dBc @ 10 Hz -65 dBc @ 100 Hz -80 dBc @ 1 kHz -85 dBc @ 10 kHz -95 dBc @ 100 kHz -112 dBc @ >1 MHz typ.			
	Image Rejection	30 dB min.			
OUTPUT	IF output	950-1950 MHz, (950-2250 MHz optional)			
	Output P1dB	+ 15 dBm			
	Output IP3	+ 25 dBm			
	Output VSWR BDC	1.7:1 typ.			
	Output connector LNA	SMA-type 50Ω			
	Output Connector BDC	N-type 50Ω , SMA-type 50Ω or F-type 75Ω			
GENERAL	Alarm (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 (option)	Via MODBUS RTU RS485 electrical interface, see document Monitoring and Control technical interface for details. NOTE! Mates with M8 male connector/Cable, use only shielded CAT 5 cables			
	System power consumption	23 W max.			
	MTBF	MTBF as per MIL-HDBK-217F Notice 2: Environmental Condition GF (Ground Fixed): >690000 hours, Environmental Condition AIC (Airborne, Inhabited, Cargo): >360000 hour, Quality level: Commercial, Temperature used for MTBF calculation: +35°C Ambient			
	Dimensions LNA	103 x 63 x 34 mm, including isolator			
	Dimensions BDC	171 x 80 x 46 mm (N-connector) (for drawing, see www.smw.se)			
	Weight LNA	160 including isolator			
	Weight BDC	418 g (N-connector)			
OPTIONS	Temperature range	Storage and operating: -40 to +80°C, -40 to +176°F			
		- Separate SMA connector on BDC for DC input or Ext. 10 MHz reference - Alarm and Monitoring & Control - Customized gain - Customized LO - Extended IF			

Ka System 17.30-22.30 GHz Quad

Example and wiring diagram

Example Ka-Band QUAD System configurations					
P/N (x = connector type F, N or SMA)	Frequency range (GHz)	BDC	LO	Ka-band (GHz)	L-band (MHz)
55769x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.20 - 21.20	1	16.25	17.20-18.20	950-1950
		2	18.25	19.20-20.20	950-1950
		3	17.25	18.20-19.20	950-1950
		4	19.25	20.20-21.20	950-1950
55771x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.30 - 22.10	1	16.35	17.30-18.50	950-2150
		2	18.75	19.70-20.90	950-2150
		3	17.55	18.50-19.70	950-2150
		4	19.95	20.90-22.10	950-2150
55772x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.30 - 22.30	1	16.35	17.30-18.55	950-2200
		2	18.85	19.80-21.05	950-2200
		3	17.60	18.55-19.80	950-2200
		4	20.10	21.05-22.30	950-2200
55775x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.70 - 21.20	1	16.75	17.70-18.60	950-1850
		2	17.65	18.60-19.50	950-1850
		3	18.55	19.50-20.40	950-1850
		4	19.45	20.40-21.20	950-1850
55776x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.70 - 21.90	1	16.75	17.70-18.75	950-2000
		2	18.85	19.80-20.85	950-2000
		3	17.80	18.75-19.80	950-2000
		4	19.90	20.85-21.90	950-2000
55773x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	17.70 - 21.70	1	16.75	17.70-18.90	950-2150
		2	19.15	20.10-20.90	950-1750
		3	17.95	18.90-20.10	950-2150
		4	19.95	20.90-21.70	950-1750
55783x-V02 Auto LO ref. Ext. 10 MHz/Int.±2.5 ppm	18.20 - 22.00	1	17.25	18.20-19.40	950-2150
		2	19.15	20.10-21.20	950-2050
		3	18.05	19.00-20.20	950-2150
		4	19.95	20.90-22.00	950-2050

NOTE:

x = 0 for F connector

x = 5 for N connector

x = 8 for SMA connector

Ka Quad Band System

