

External Reference N-female Type

Palapa C band PLL LNB

Model No. NJS8476EN

External Reference N-female Type

C band PLL LNB

Model No. NJS8477EN

External Reference N-female Type

Insat C band PLL LNB (LO:5,76GHz)

Model No. NJS8478EN

Specifications

Rev.04M February 18, 2003

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New Japan Radio Co., Ltd.

Microwave Components Division

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1. Scope

This specification defines the low noise amplifier and block downconverter intended for the satellite data communication downlink application in the 3.4 to 4.2 GHz, Palapa C-band, 3.625 to 4.200 GHz, C-Band and 4.5 to 4.8 GHz, Insat C-band.

This LNB has a combined 3-stage HEMT amplifier and block downconverter with 5.15 GHz or 5.76 GHz Phase Locked Local Oscillator which is constituted with S-Band VCO, Multiplier, Loop Filter and Reference Recovery VCXO providing high stability and low phase noise.

All specifications shall apply throughout the full range of the specified environmental conditions unless otherwise specified.

2. Electrical Specifications

#	Item	Specification
2-1.	Input Frequency Band	3.400 to 4.200 GHz <Model No. NJS8476EN> 3.625 to 4.200 GHz <Model No. NJS8477EN> 4.500 to 4.800 GHz <Model No. NJS8478EN>
2-2.	Input Waveguide Flange	CPR-229G
2-3.	Input V.S.W.R.	3:1 max.
2-4.	Noise Temp. (Ta: +25 C)	35 K typ. 45 K max.
2-5.	Output Frequency	950 to 1,750 MHz <Model No. NJS8476EN> 950 to 1,525 MHz <Model No. NJS8477EN> 960 to 1,260 MHz <Model No. NJS8478EN>
2-6.	Conversion Gain (Ta: +25 C)	60 dB min. 66 dB max.
2-7.	Conversion Gain Ripple (Ta: +25 C)	2.0 dB max. at 50 MHz segments.
2-8.	Conversion Gain Flatness (Ta: +25 C)	8.0 dB max. at 800 MHz BW <Model No. NJS8476EN> 5.0 dB max. at 575 MHz BW <Model No. NJS8477EN> 5.0 dB max. at 300 MHz BW <Model No. NJS8478EN>
2-9.	Output Power for 1 dB Gain Compression	+3 dBm min.
2-10.	Intermodulation Products (3rd order Intermodulation rejection with two -75 dBm input carriers separated by 10 MHz.)	45 dB min
2-11.	Output Intercept Point	+13 dBm min.
2-12.	Local Oscillator Frequency	5.15 GHz nom. <Model No. NJS8476EN> 5.15 GHz nom. <Model No. NJS8477EN> 5.76 GHz nom. <Model No. NJS8478EN>
2-13.	Phase Noise (SSB)	-70 dBc/Hz typ. -65 dBc/Hz max. at 100 Hz -80 dBc/Hz typ. -75 dBc/Hz max. at 1 kHz -85 dBc/Hz max. at 10 kHz -90 dBc/Hz max. at 100 kHz -105 dBc/Hz max. at 1 MHz *Depend on Phase Noise of External Reference
2-14.	External Reference Input Frequency	10 MHz
2-15.	External Reference Input Power	-10 to 0 dBm (50 ohm) @IF Output connector
2-16.	External Reference Input Port	IF Output connector (Combine Reference with IF Signal)
2-17.	External Reference Phase Noise	-135 dBc/Hz max. at 100 Hz -143 dBc/Hz max. at 1 kHz -145 dBc/Hz max. at 10kHz (Input Condition)

#	Item	Specification
2-18.	Spurious	a) -140 dBm max. at input, Fixed frequency spur, unrelated to test CW signal. (Measured at specified IF band ; 950 to 1,750 MHz, 950 to 1,525 MHz or 960 to 1,260 MHz) b) NJS8476EN : -50 dBc max. NJS8477EN : -55 dBc max. NJS8478EN : -55 dBc max. With test CW signal -10 dBm IF output (Measured at specified IF band ; 950 to 1,750 MHz, 950 to 1,525 MHz or 960 to 1,260 MHz)
2-19.	Image Rejection	60 dB min.
2-20.	Output Connector	N-type female 50 ohm
2-21.	Output V.S.W.R.(50 ohm)	2.5 : 1 max.
2-22.	Input Voltage	+13.5 to +24 V DC
2-23.	Current Drain	400 mA max.

3. Environmental Specifications

#	Item	Specification
3-1.	Operating Temperature Range	-40 to +60 C
3-2.	Storage Temperature Range	-40 to +80 C
3-3.	Humidity	100 % Rh max.
3-4.	Vibration	5 G (f : 50 Hz, T : 5 min. Direction : X,Y,Z)
3-5.	Shock	15 G (Direction : X,Y,Z)

4. Absolute Maximum Rating

#	Item	Specification
4-1.	RF Input Power	-10 dBm (@ CW), +10 dBm (@ Pulse)
4-2.	Supply Voltage	+28 Vdc

