

Palapa C band PLL LNB  
Model No. NJS8476S  
C band PLL LNB  
Model No. NJS8477S  
Insat C band PLL LNB (LO: 5.76 GHz)  
Model No. NJS8478S  
Specifications

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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 TCXO 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. NJS8476S> 3.625 to 4.200 GHz <Model No. NJS8477S> 4.500 to 4.800 GHz <Model No. NJS8478S>
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. NJS8476S> 950 to 1,525 MHz <Model No. NJS8477S> 960 to 1,260 MHz <Model No. NJS8478S>
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. NJS8476S> 5.0 dB max. at 575 MHz BW <Model No. NJS8477S> 5.0 dB max. at 300 MHz BW <Model No. NJS8478S>
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 (Ta: -40 to +60 C)	5.15 GHz +/- 3.0 ppm <Model No. NJS8476S> 5.15 GHz +/- 3.0 ppm <Model No. NJS8477S> 5.76 GHz +/- 3.0 ppm <Model No. NJS8478S>
2-13.	Phase Noise (SSB)	-70 dBc/Hz typ. -63 dBc/Hz max. at 100 Hz -80 dBc/Hz typ. -73 dBc/Hz max. at 1 kHz -85 dBc/Hz typ. -83 dBc/Hz max. at 10 kHz -90 dBc/Hz max. at 100 kHz
2-14.	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) NJS8476S : -50 dBc max. NJS8477S : -55 dBc max. NJS8478S : -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)
2-15.	Image Rejection	60 dB min.
2-16.	Output Connector	F-type female 75 ohm



#	Item	Specification
2-17.	Output V.S.W.R.(75 ohm)	2.5 : 1 max.
2-18.	Input Voltage	+13.5 to +24 V DC
2-19.	Current Drain	350 mA max.

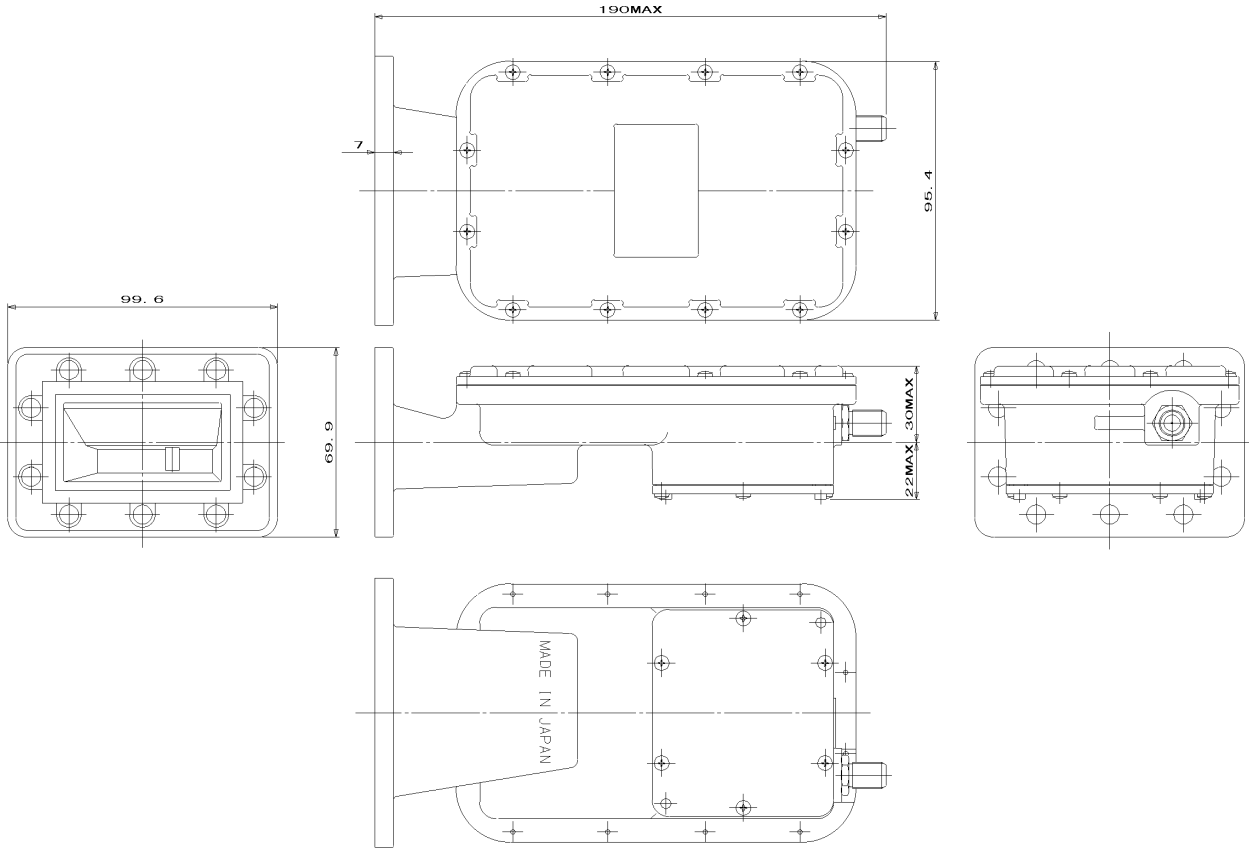
### 3. Environmental Specifications

#	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

5. Outline Drawing



Unit : mm