

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><br>3.625 to 4.200 GHz <Model No. NJS8477S><br>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><br>950 to 1,525 MHz <Model No. NJS8477S><br>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><br>5.0 dB max. at 575 MHz BW <Model No. NJS8477S><br>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<br>(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<br>(Ta: -40 to +60 C)   | 5.15 GHz +/- 3.0 ppm <Model No. NJS8476S><br>5.15 GHz +/- 3.0 ppm <Model No. NJS8477S><br>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<br>-80 dBc/Hz typ. -73 dBc/Hz max. at 1 kHz<br>-85 dBc/Hz typ. -83 dBc/Hz max. at 10 kHz<br>-90 dBc/Hz max. at 100 kHz  |
| 2-14. | Spurious   | a) -140 dBm max.<br>at input, Fixed frequency spur, unrelated to test CW signal.<br>(Measured at specified IF band ; 950 to 1,750 MHz, 950 to 1,525 MHz or 960 to 1,260 MHz)<br>b) NJS8476S : -50 dBc max.<br>NJS8477S : -55 dBc max.<br>NJS8478S : -55 dBc max.<br>With test CW signal -10 dBm IF output<br>(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  |

# -PRELIMINARY-



| #     | 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.       |

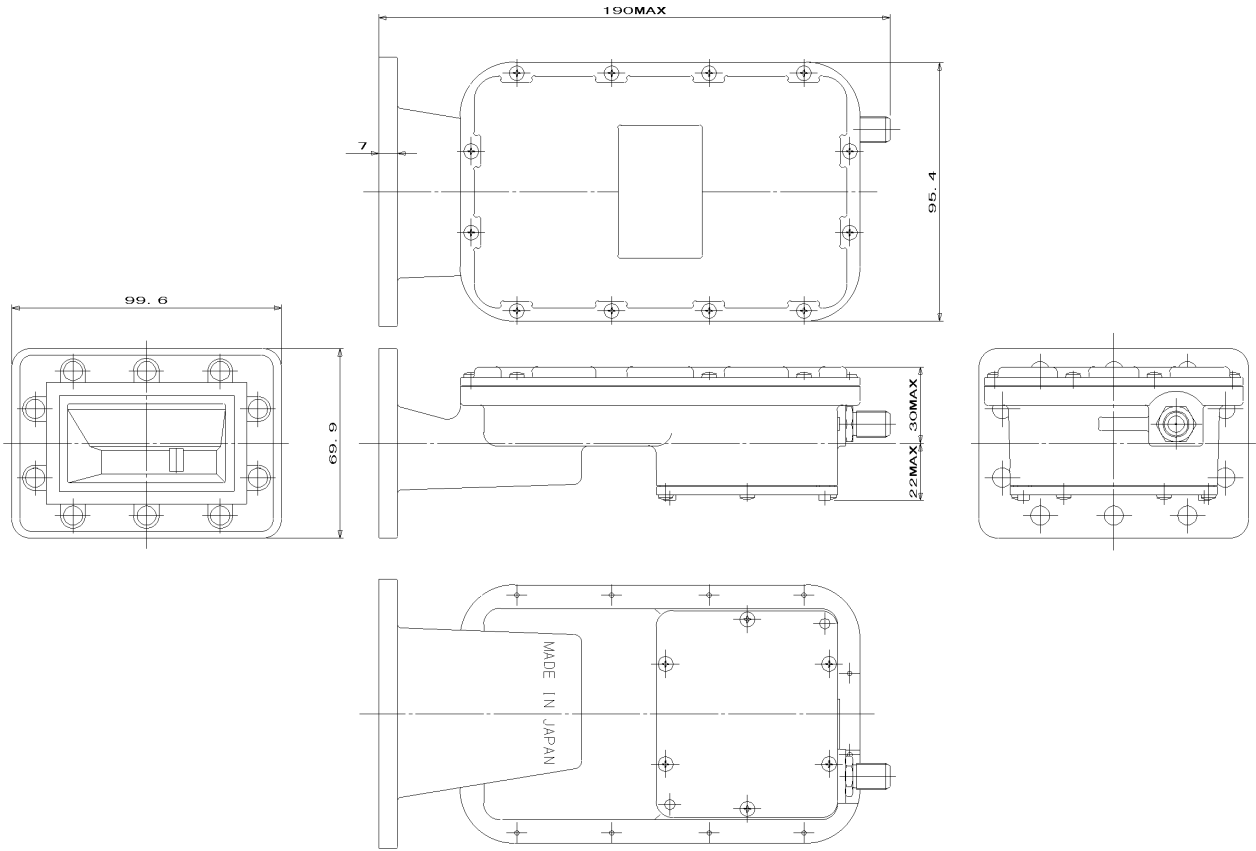
### 3. Environmental Specifications

| #    | 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