Norsat 3120

Norsat LNB 3120 C-Band PLL LNB Instruction Manual

Model: 3120

Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Norsat 3120 C-Band Phase-Locked Loop (PLL) Low Noise Block (LNB). The Norsat 3120 is designed for reliable signal reception in C-Band satellite communication systems, offering high stability and low noise performance.

Safety Information

Observe the following safety precautions to prevent damage to the device or injury to personnel:

- Ensure all power sources are disconnected before installation or maintenance.
- Handle the LNB with care to avoid physical damage.
- Do not expose the LNB to extreme temperatures or moisture beyond its specified operating conditions.
- Only qualified personnel should perform installation and service.

Package Contents

Verify that all items are present in the package:

- Norsat 3120 C-Band PLL LNB
- Instruction Manual (this document)
- Mounting hardware (if applicable, check packaging)

Product Overview

The Norsat 3120 LNB is a high-performance C-Band LNB designed for professional satellite reception. Key

features include:

- **Model:** 3120F
- **Input Frequency:** 3.40 - 4.20 GHz
- **Output Frequency:** 950 - 1750 MHz
- **Local Frequency:** 5.15 GHz
- **Local Stability:** ±5 kHz
- **Noise Temperature:** 20K

Figure 1: Front view of the Norsat 3120 C-Band PLL LNB, showing the input waveguide and output F-connector.

Setup and Installation

Follow these steps for proper installation of the Norsat 3120 LNB:

1. **Mounting:** Securely attach the LNB to the feed horn of your C-Band satellite dish. Ensure the LNB is properly aligned and tightened to prevent movement.
2. **RF Connection:** Connect the LNB's output F-connector to the coaxial cable leading to your satellite receiver or modem. Use high-quality coaxial cable and ensure connections are tight and weatherproof.
3. **Powering:** The LNB is typically powered via the coaxial cable from the satellite receiver (DC power over coax). Verify that your receiver is configured to supply the correct voltage (e.g., 13V/18V).
4. **Polarization Adjustment:** If your feed horn allows, adjust the LNB's rotation for optimal polarization alignment with the satellite signal. This may require fine-tuning while monitoring signal strength on your receiver.

Figure 2: Illustrative diagram of the Norsat 3120 LNB mounted on a C-Band feed horn.

Operating Instructions

Once installed and powered, the Norsat 3120 LNB operates continuously to convert the C-Band satellite signal to an intermediate frequency (IF) suitable for your receiver.

- Ensure your satellite receiver is correctly configured for the LNB's local oscillator frequency (5.15 GHz) and the desired input/output frequency ranges.
- Monitor signal strength and quality on your receiver to confirm optimal performance.

Maintenance

The Norsat 3120 LNB is designed for minimal maintenance. However, periodic checks can ensure long-term reliability:

- **Visual Inspection:** Periodically inspect the LNB and its connections for any signs of physical damage, corrosion, or loose cables.
- **Cleaning:** Keep the LNB's waveguide opening clear of debris, ice, or snow. Use a soft, dry cloth for cleaning the exterior. Do not use abrasive cleaners or solvents.
- **Weatherproofing:** Ensure all outdoor connections are properly weatherproofed to prevent moisture ingress.

Troubleshooting

If you experience issues with your Norsat 3120 LNB, consider the following:

Problem	Possible Cause	Solution
No Signal / Weak Signal	◦ Incorrect dish alignment ◦ Loose or damaged coaxial cable ◦ Insufficient LNB power ◦ Incorrect receiver settings	◦ Re-align satellite dish and LNB polarization. ◦ Check all cable connections and replace damaged cables. ◦ Verify receiver is supplying correct LNB voltage. ◦ Confirm receiver LNB settings (LO frequency, band).
Intermittent Signal	◦ Loose connections ◦ Weather interference (heavy rain, snow) ◦ Obstruction in signal path	◦ Tighten all F-connectors. ◦ Wait for weather conditions to improve. ◦ Clear any obstructions (trees, buildings).

Specifications

Parameter	Value
Model Number	3120

Parameter	Value
Input Frequency	3.40 - 4.20 GHz
Output Frequency	950 - 1750 MHz
Local Oscillator Frequency (LO)	5.15 GHz
Local Oscillator Stability	±5 kHz
Noise Temperature	20K
Product Dimensions	7 x 4 x 3 inches
Item Weight	1.47 pounds
Manufacturer	Norsat

Warranty Information

Norsat products are typically covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and duration, please refer to the warranty card included with your product or visit the official Norsat website. Keep your purchase receipt as proof of purchase.

Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Norsat customer support. Contact information can typically be found on the official Norsat website or on your product packaging.
Norsat Official Website: www.norsat.com