



Norsat Median 40 Watt KU Block Up Converter User Manual

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Preface

Purpose and Scope of the User Guide

The user guide explains the system specifics of the Nor sat Median 16/25/40 Watt KU

BUC.

This user guide is specifically written for the Median 16/25/40 Watt KU BUC

Audience

The guide will be of interest to the following personnel:

- Field users
- Systems administrators (or IT; Lifecycle/Sustainment Managers)

Revision History

Date	Nature of Revision	Release
	Initial Release	1.0

READ THE MANUAL BEFORE YOU INSTALL OR OPERATE THE Product Line™

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Summary

This document is the user manual for Norsat's Median block up converter (BUC). It describes the safety instructions, application scenarios, working principles, mechanical structure, product type and other information for the BUC

Maintenance & Service

If the equipment appears inconsistent with the guide when using, please contact

Norsat customer service.

NORSAT INTERNATIONAL, INC.

110-4020 Viking Way Richmond, BC, Canada V6V 2L4

Tel: +1 604 821-2843

Email: support@norsat.com

During the warranty period manufacturing, performance and operational deficiencies will be addressed and repaired at an authorized repair facility. The warranty does not apply and is not limited to incorrect installation, unintended use, accident, acts of god (lightning, flooding, etc...), improper storage, transportation, and etc.

Please contact our customer service department listed below for warranty service.

EMAIL: Support@norsat.com

TOLL-FREE: +1 (800) 644-4562

TEL: +1 (604) 821-2800

Safety Instructions

This product contains components and assemblies susceptible to electrostatic discharge (ESD) and produces high RF energy. Please read the safety instructions carefully in this section before installation and operation.

Please use a proper protective bag and store the product in a clean and dry environment.



WARNING!

Repair work is to be performed by authorized repair and return locations only. Any unauthorized repair behavior will void any remaining warranty.



DANGEROUS HIGH POWER RF!

The equipment's RF Out port emits high power RF energy that can cause physical injury. Ensure that the RF Out port is connected to an antenna system or a high power load before powering and operating the equipment.



HIGH SPEED FANS! DO NOT TOUCH

The equipment's fan speed is high during operation. Do not touch or move it by hand.



HOT SURFACE! DO NOT TOUCH

The equipment's surface temperature is high during operation. Do not touch or move it by hand.

- Do not turn on power supply before the equipment is connected to an antenna system or a high power load, avoiding high power RF energy injury.
- Wrap the connection ports (IF Input, RF Output, power supply, and monitoring interface) with high temperature, UV resistant and waterproof tape.

- The installation location must be ventilated to ensure optimum fan cooling.
- Ensure the supply voltage range and polarities are correct.
- The equipment is an outdoor product. Proper grounding techniques are required to reduce the potential impact of lightning-produced surge signal.
- The equipment casing is not to be opened unless instructed by authorized Nor sat personnel. Personal injury may occur; equipment may be damaged by ESD and warranty will be void.

Function Instructions

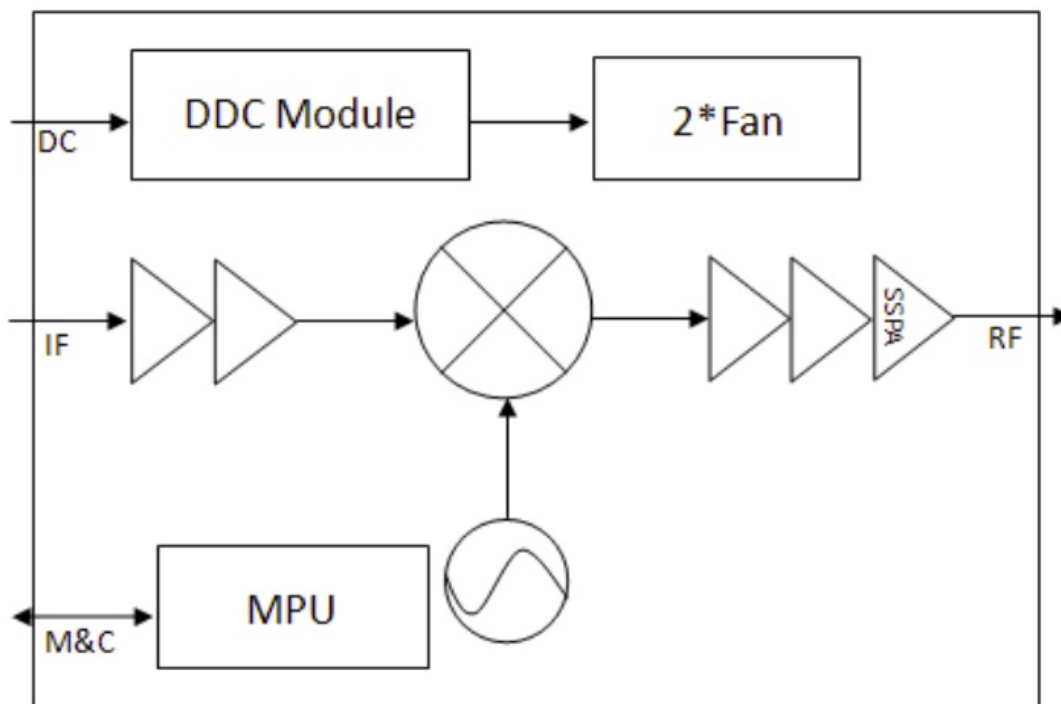
Working Principle

Ku-Band BUC function and working principle

L-band signal from the modem is converted to Ku-band RF signal, at the same time the power from the waveguide output port is amplified, transmitted to the communication satellite through the satellite antenna system.

BUC block diagram of the composition

The main modules of the Ku-Band BUC are Up Converter, Power Amplifier, Frequency Synthesizer, DC converter, Monitor module and other components.



Interface

BUC Interface Description

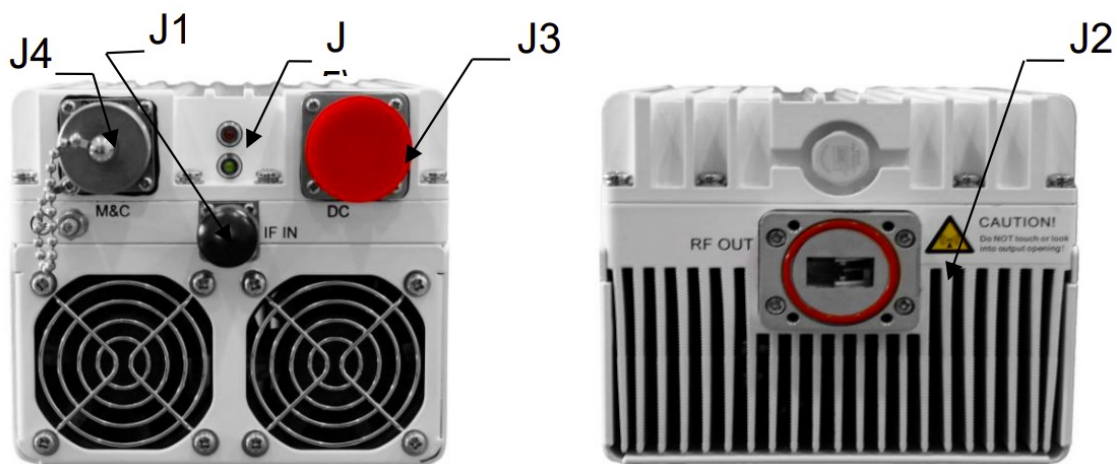


Table 1 BUC Interface Parameters

NO	Interfaces	Model	Parameters
J1	IF INPUT	N Type –Female	Standard Frequency 950 to 1450 MHz Extended Frequency 950 to 1700 MHz
J2	RF OUT	WR75 waveguide flange (Grooved)	14.0 to 14.5 GHz (Standard) 13.75 to 14.5 GHz (Extended)
J3	DC INPUT	ACS02E16-11P	+36 to +72 V
J4	M&C	PT02E-14-19P	RS-485/ RS-232/ Ethernet
J5	LED	N/A	Yellow/ Red

Table 2 PIN Description

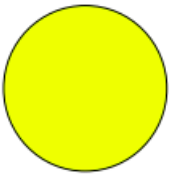
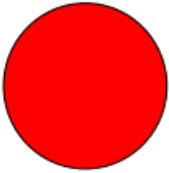
PIN	Protocol	Signal	19 PIN Connector
A	RS-485	TX+	
B		TX-	
C		RX+	
D		RX-	
E	RS-232	TX	
F		RX	
G		232_GND	
H	ETHERNET	ETX+	
J		ETX-	
K		ERX+	
L		ERX-	
M		E_GND	
N	N/A		
P	N/A		
R	N/A		
S	N/A		
T	N/A		
U	N/A		
V	RS485_GND		

LED:

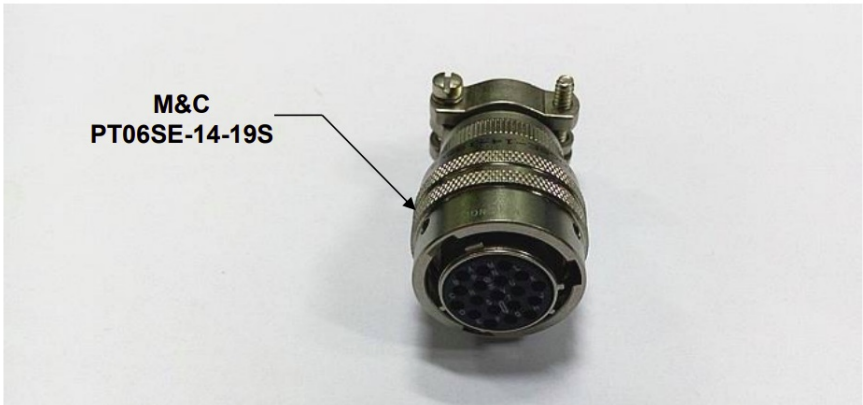
The equipment provides two LED indicator lights (yellow and red) that provide information on the following operational conditions of the BUC:

1. LEDs off: Equipment is functioning properly;
2. Yellow LED on: PLL alarm;
3. Yellow LED flashing: High temperature alarm;
4. Red LED on: HPA (high output PA) alarm;
5. Red LED flashing: Fan alarm.

LED Indicators



BUC Power and Monitor Interface Cable



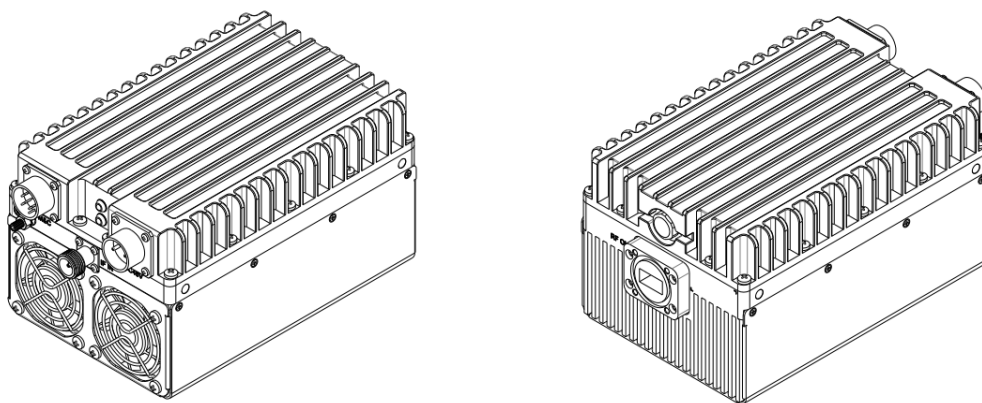
Positive Pole: Red; Negative Pole: Black



Independent DC Supply

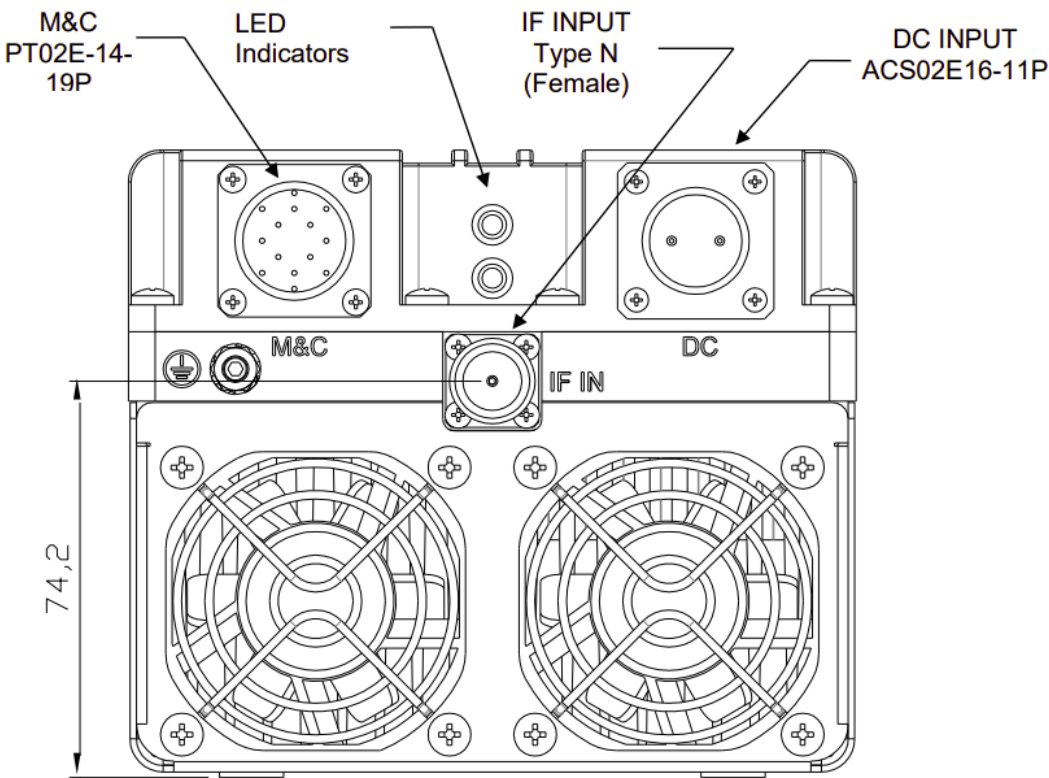


Mechanical Structure



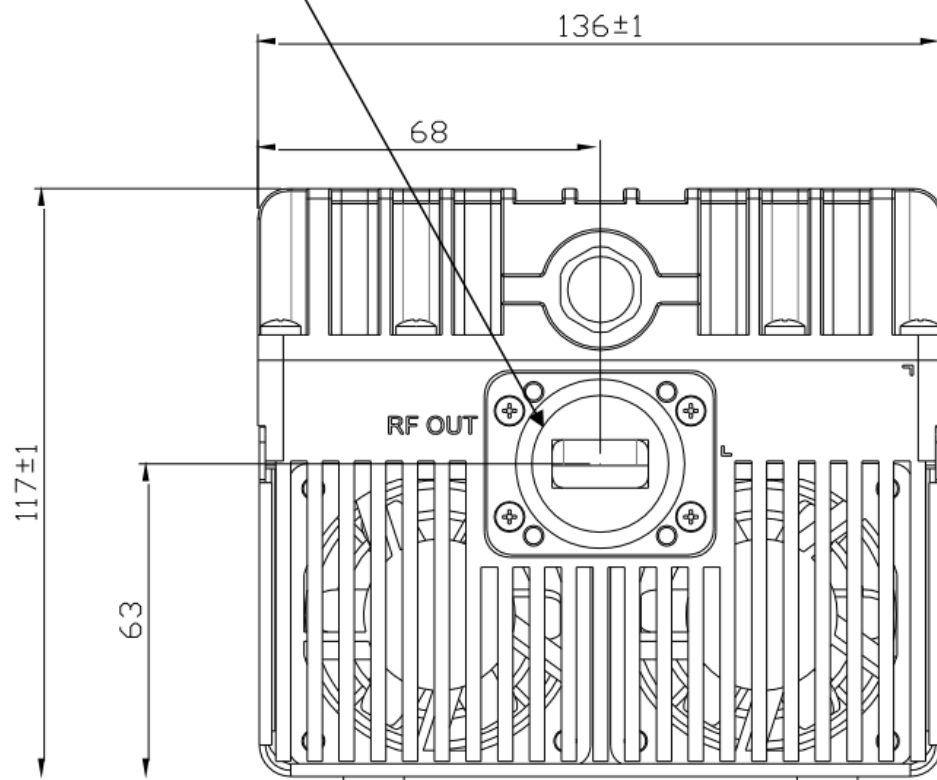
BUC 3D Structure

BUC Interface Type

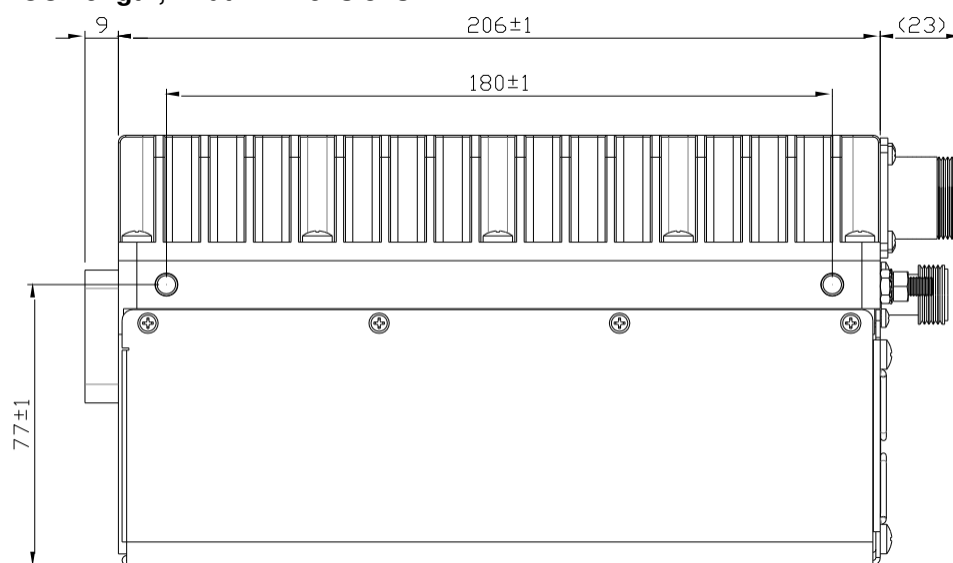


BUC Width, Height Dimensions

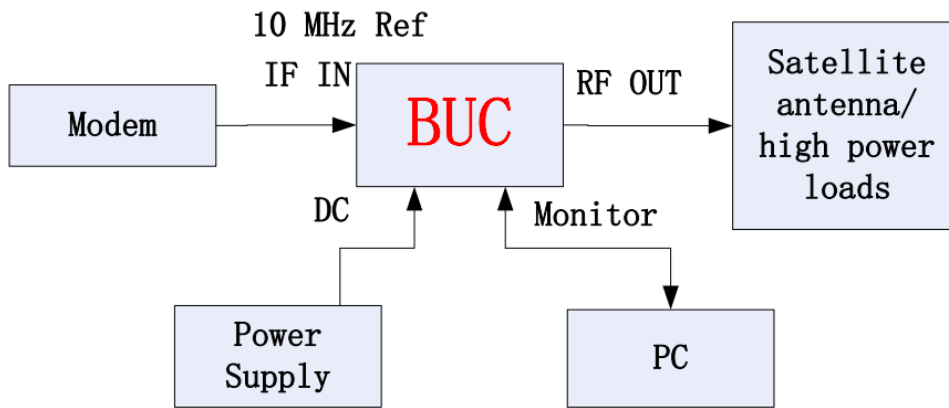
RF OUTPUT
WR 75
grooved



BUC Length, Width Dimensions



Configuration



BUC Configuration

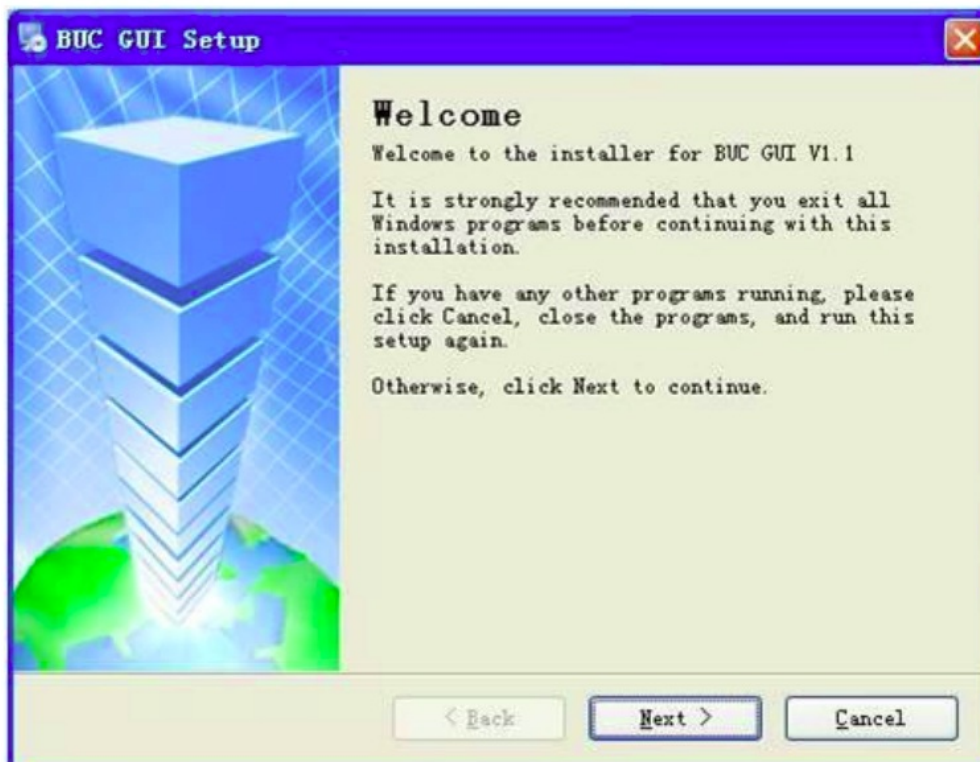
BUC System Connecting Steps

- Step 1:** Unpack the box and check the unit and accessories to make sure there is no damage or missing items.
- Step 2:** Install the unit by following the instructions. Laboratory testing requires the unit be horizontally placed in a dry and ventilated environment.
- Step 3:** Connect BUC IF IN to Modem IF Out.
- Step 4:** Install the antenna interface to antenna system or high power load tightly and ensure it is water-proof. Do not pinch the O-ring.
- Step 5:** Ensure the power supply voltage range and polarity meet requirements. This equipment only supports independent power supply.
- Step 6:** Connect BUC to computer through M&C to monitor and adjust available settings.

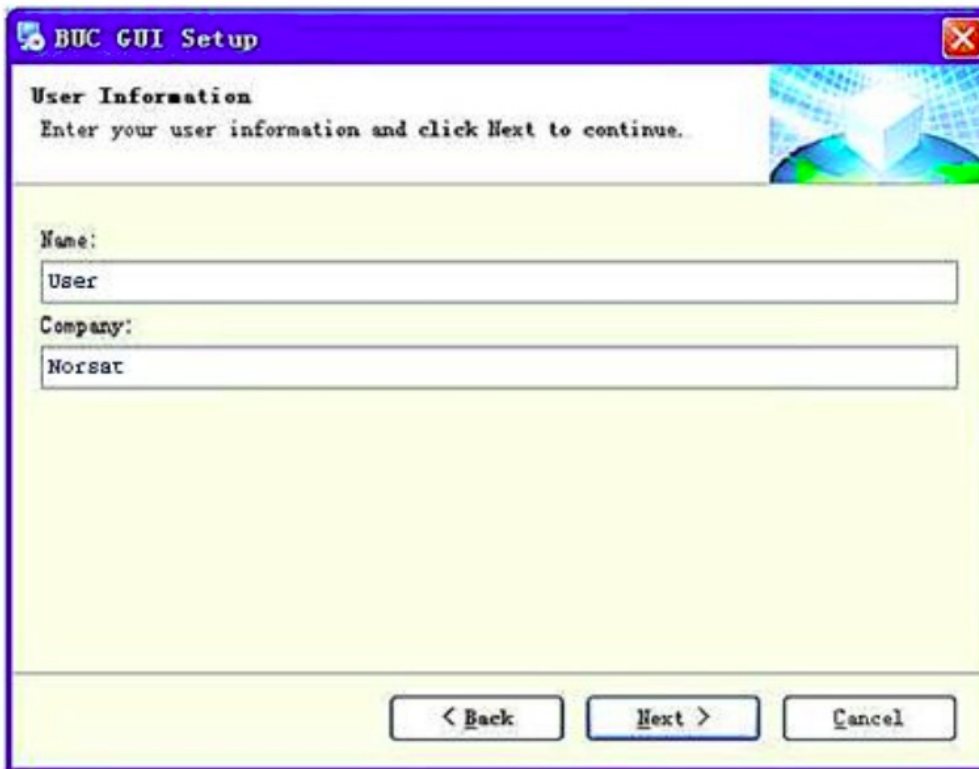
GUI

GUI Installation

Double-click setup.exe to access installation interface, install GUI by following the prompts.



Enter user name and company name.



BUC GUI Setup

User Information
Enter your user information and click Next to continue.

Name:

Company:

< Back Next > Cancel

This screenshot shows the 'User Information' step of the BUC GUI Setup. The window has a blue title bar with the text 'BUC GUI Setup'. Below the title bar, there's a header area with the title 'User Information' and a sub-instruction 'Enter your user information and click Next to continue.' To the right of the text is a small graphic of a globe with a cube on top. The main area contains two text input fields: 'Name:' with the value 'User' and 'Company:' with the value 'Norsat'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Select the installation path.



BUC GUI Setup

Installation Folder
Where would you like BUC GUI to be installed?

The software will be installed in the folder listed below. To select a different location, either type in a new path, or click Change to browse for an existing folder.

Install BUC GUI to:
 Change...

Space required: 3.02 MB
Space available on selected drive: 25.87 GB

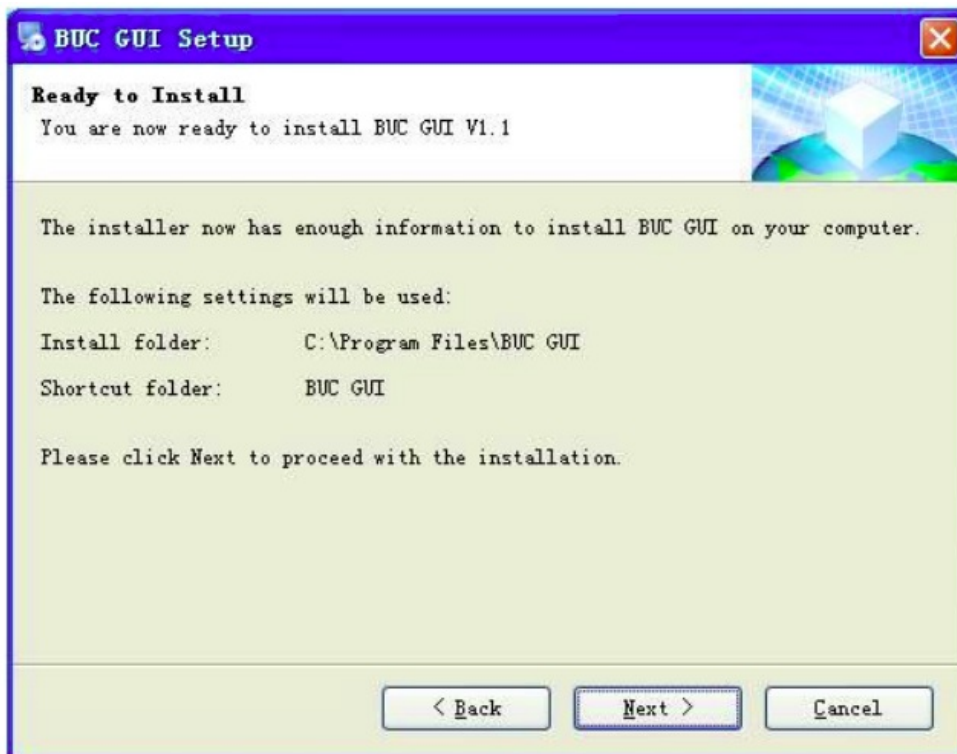
< Back Next > Cancel

This screenshot shows the 'Installation Folder' step of the BUC GUI Setup. The window has a blue title bar with the text 'BUC GUI Setup'. Below the title bar, there's a header area with the title 'Installation Folder' and a sub-instruction 'Where would you like BUC GUI to be installed?' To the right of the text is a small graphic of a globe with a cube on top. The main area contains a paragraph of text explaining that the software will be installed in the folder listed below, and that users can type a new path or click 'Change' to browse for an existing folder. Below this text is a text input field with the value 'C:\Program Files\BUC GUI' and a 'Change...' button. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. Additionally, the space requirements are listed: 'Space required: 3.02 MB' and 'Space available on selected drive: 25.87 GB'.

Select the storage directory of shortcut folder.



Review the information.

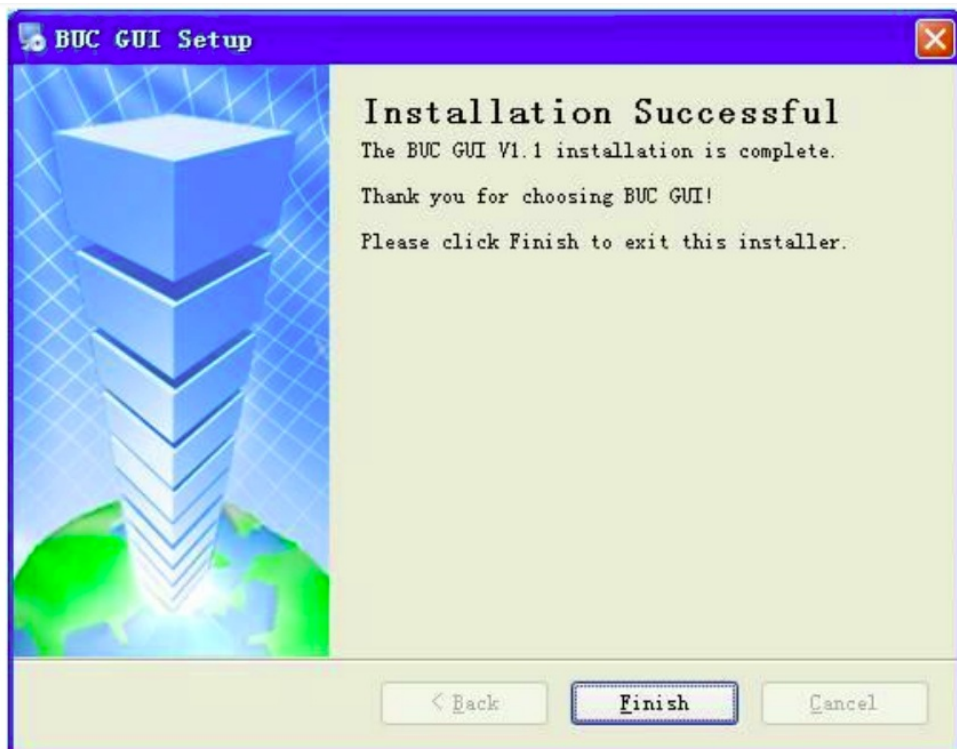


This interface shows the installation is completed.



Uninstall

Enter the uninstall program interface.



When the uninstallation is completed, click finish.



Operation



Run the application to launch the software interface. Chose one of the three supported communication protocols: Ethernet/RS232/RS-485 to connect BUC to PC.

Ethernet: Set BUC's IP address in the blank space, and then click the button

Connect to BUC. The computer's IP and BUC's IP should be the same network segment.

RS-232 Port: Select the RS-232 port and then click the button Connect to **BUC**.

RS-485 Port: Select the RS-485 port and then click the button Connect to **BUC**.

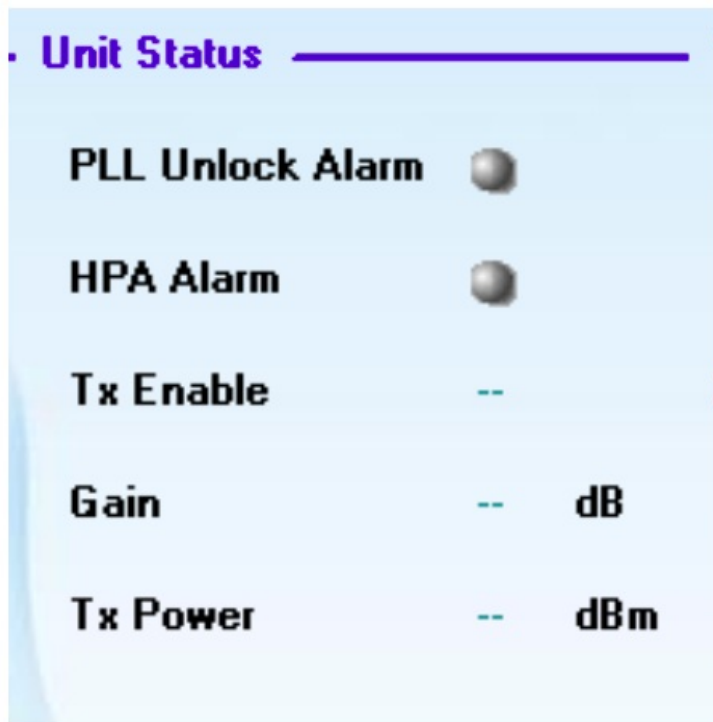
The image shows a software interface for connecting to a BUC. It has a light blue background with a faint circular pattern. On the left, there are three radio buttons with corresponding labels: 'RS-232', 'RS-485', and 'Ethernet'. The 'RS-232' button is selected. To the right of the radio buttons are input fields: a dropdown menu showing '1' for RS-232, and a text box containing '192.168.1.1' for Ethernet. On the right side of the interface, there are two buttons: 'Connect BUC' and 'Check Status'. The 'Connect BUC' button is highlighted with a yellow border, and the 'Check Status' button is in a lighter shade.

Click the Check Status button to confirm the device status.



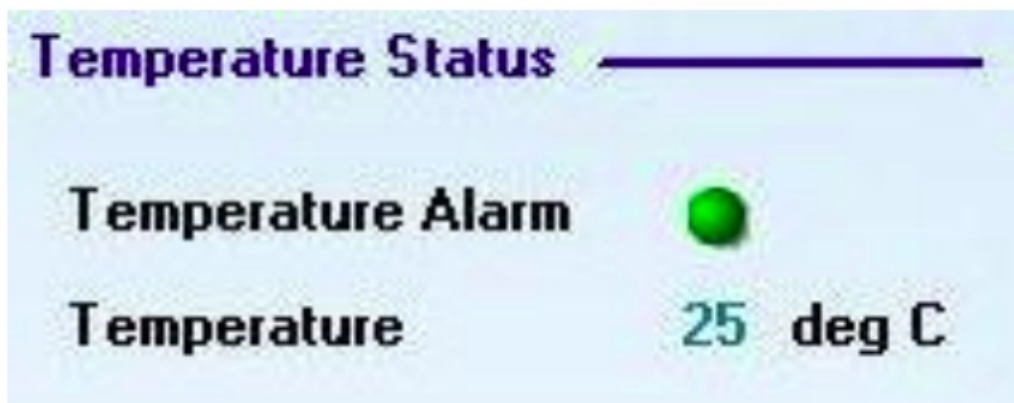
Unit Status

- **PLL Unlock Alarm:** Indicator will appear Red when BUC signal is unlocked.
- **HPA Power Alarm:** Indicator will appear Red when BUC HPA current TX power is higher than its threshold.
- **TX Enable:** Unit TX enable status.
- **Gain:** Unit current Gain.
- **TX Power:** BUC TX power value.



Temperature Status

- **Temperature Alarm:** Indicator will appear Red when the BUC's internal temperature is above the upper limit.
- **Detected Temperature:** Displays the temperature of unit's internal M&C board.



Unit Information

- **Model Number:** Unit Model number.
- **Serial Number:** Unit serial number.
- **Firmware Version:** The version of the firmware on the unit.

Unit Information

Model Number


Serial Number

Firmware Version

Fan Status

- **Fan Alarm:** Indicator is red when the fan rotation is abnormal.
- **Fan Speed:** The speed of the fan.

Fan Status

Fan Alarm 

Fan Speed --

TX Status Set

- **TX Enable:** On/Off TX enable.
- **Gain:** Set the Gain of uni

Tx Status Set

Tx Enable

▼

Gain

Min Max dB

Documents / Resources

	<p>Norsat Median 40 Watt KU Block Up Converter [pdf] User Manual 16, 25, 40, Median 40 Watt KU Block Up Converter, 40 Watt KU Block Up Converter, KU Block Up Converter, Block Up Converter</p>
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References

-  [Norsat International Inc.](#)