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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™

Contents

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 lighting-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.
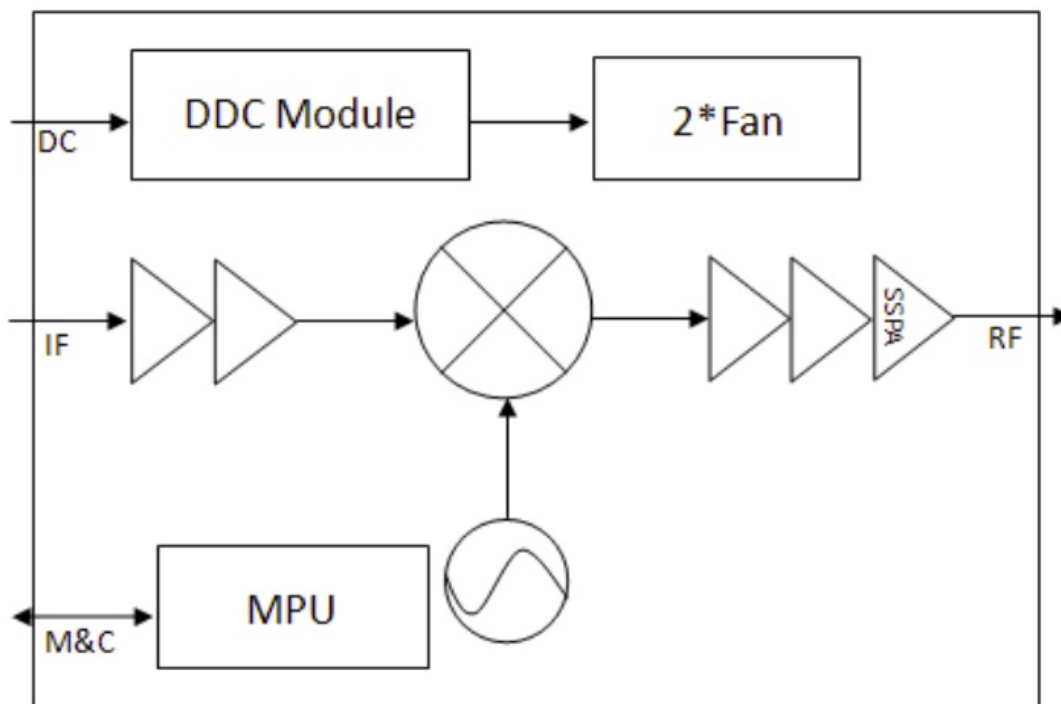
Interface

BUC Interface Description
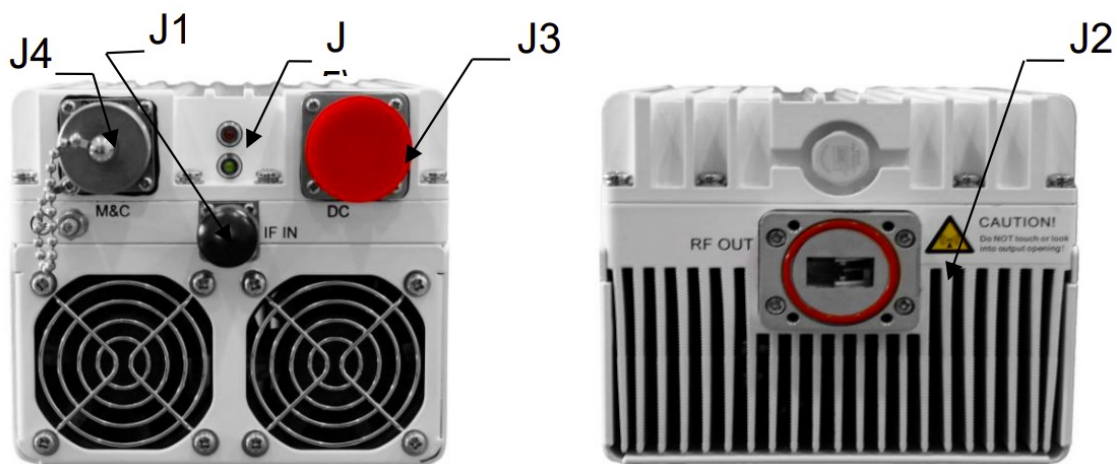
Table 1 BUC Interface Parameters

NO	Interfaces	Model	Parameters
J1	IF INPUT	N Type –Female	Standard Frequency 950 to 1450 MHzExtended 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
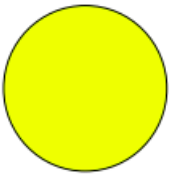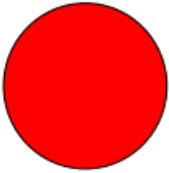
BUC Power and Monitor Interface Cable
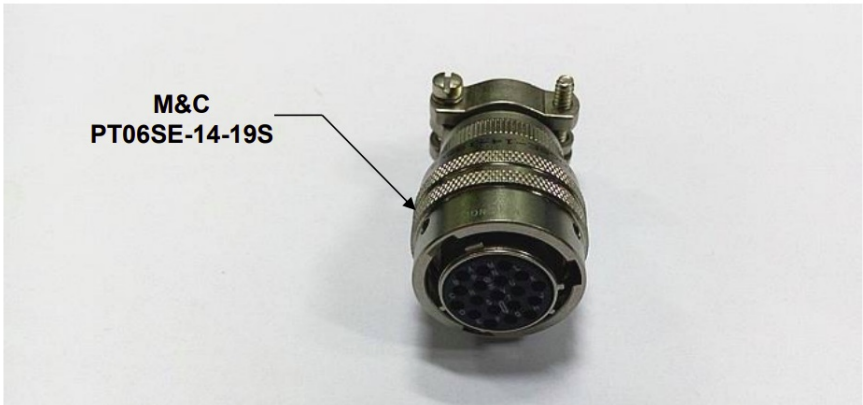
Positive Pole: Red; Negative Pole: Black

Independent DC Supply

Mechanical Structure
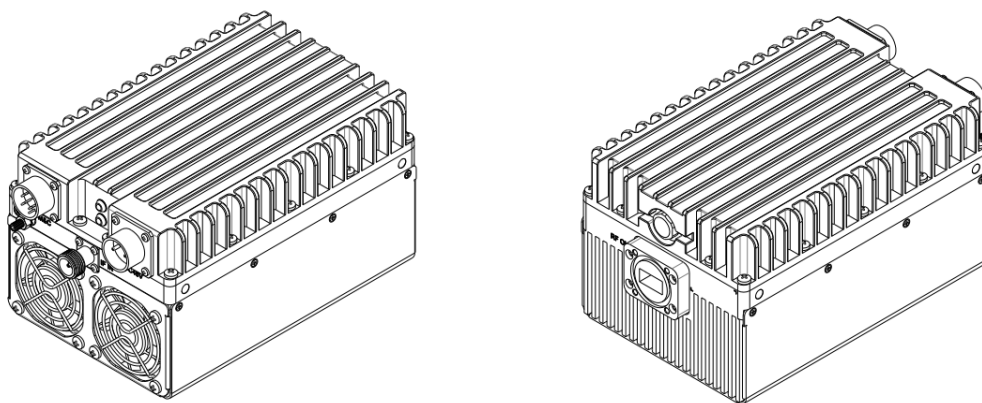
BUC 3D Structure

BUC Interface Type
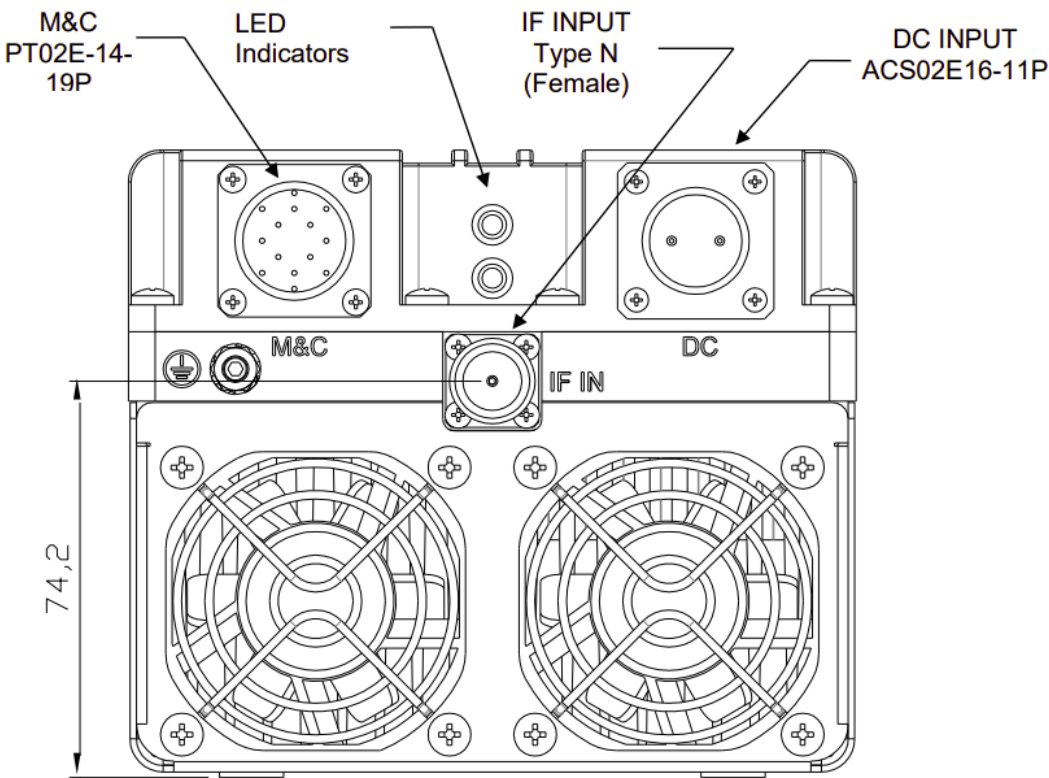
BUC Width, Height Dimensions

RF OUTPUT
WR 75
grooved

136±1

68

117±1

63

RF OUT
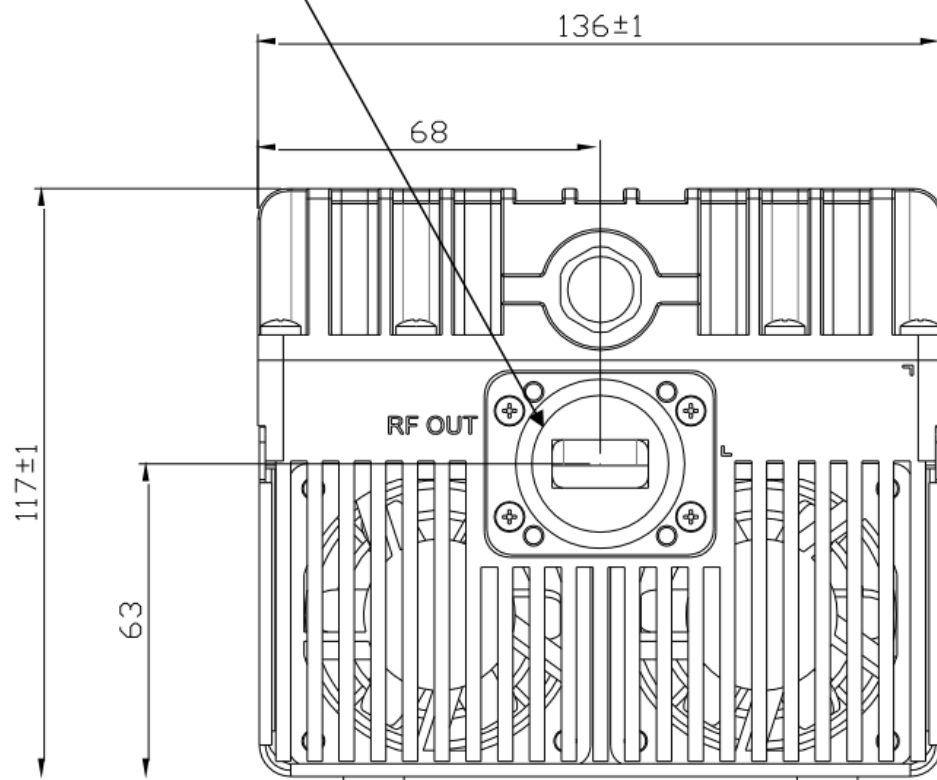
BUC Length, Width Dimensions

9

206±1

180±1

(23)

77±1
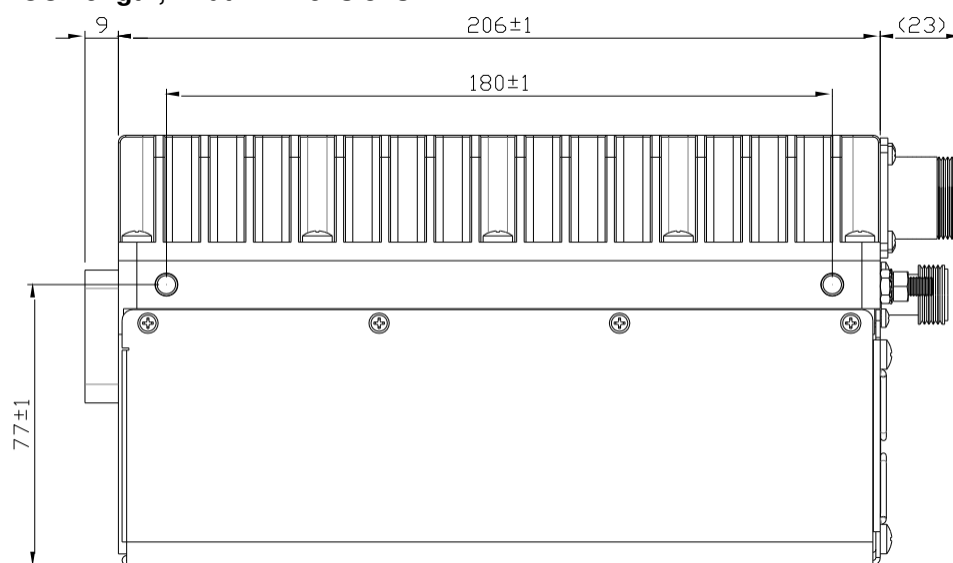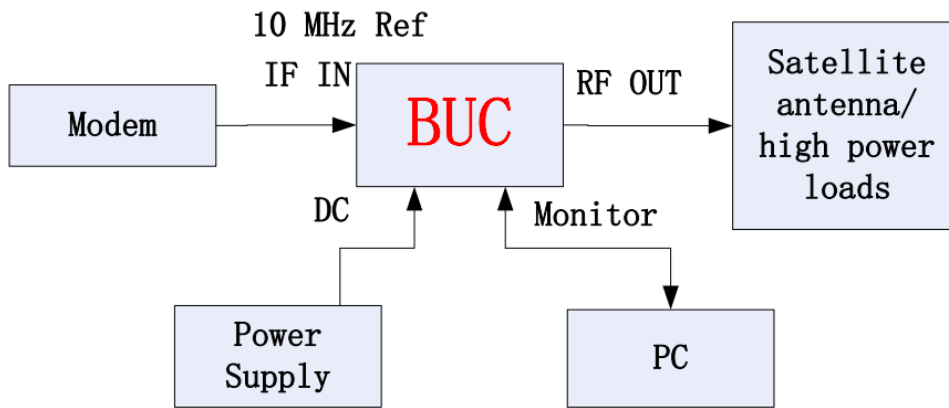
Configuration

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.
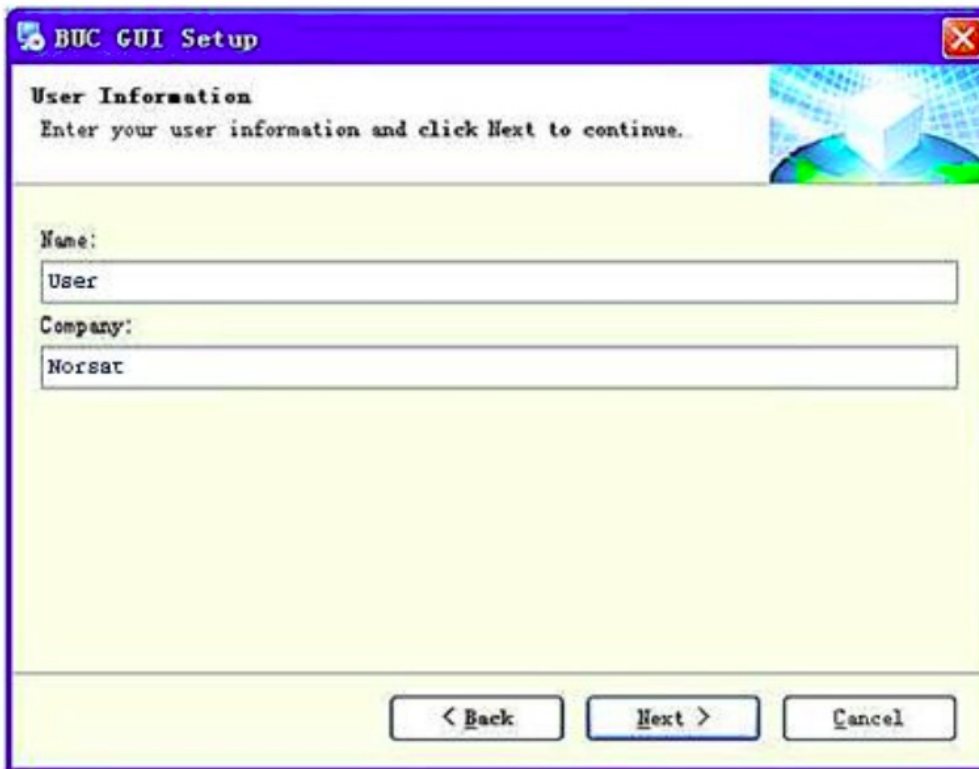
GUI

GUI Installation

Double-click setup.exe to access installation interface, install GUI by following the prompts.
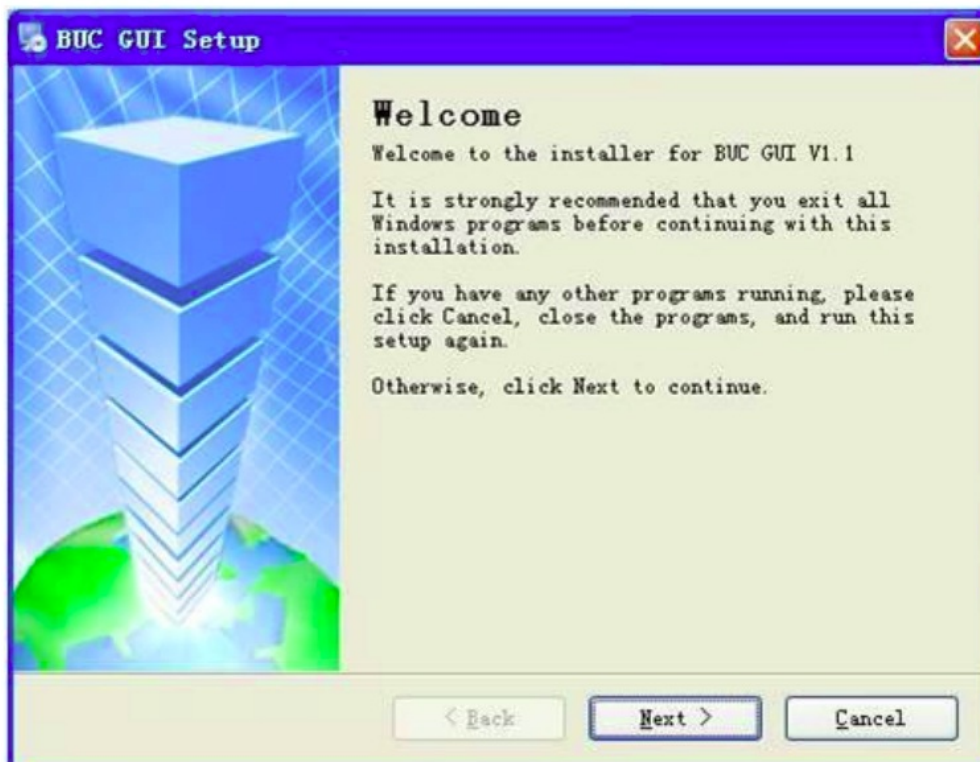
Enter user name and company name.

Select the installation path.

Select the storage directory of shortcut folder.
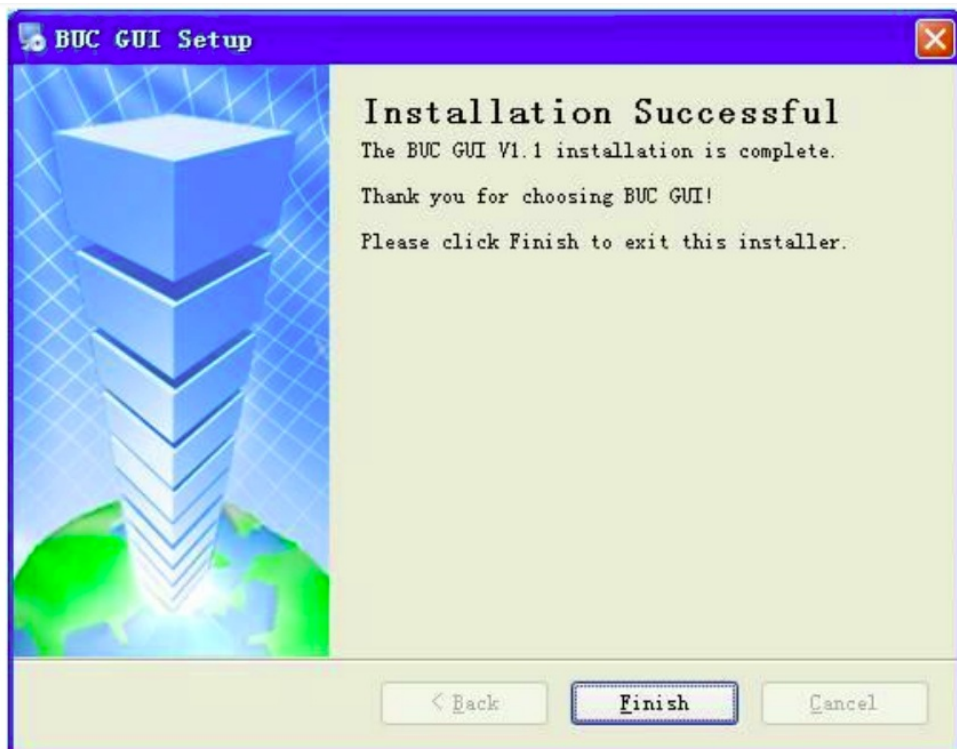
Review the information.
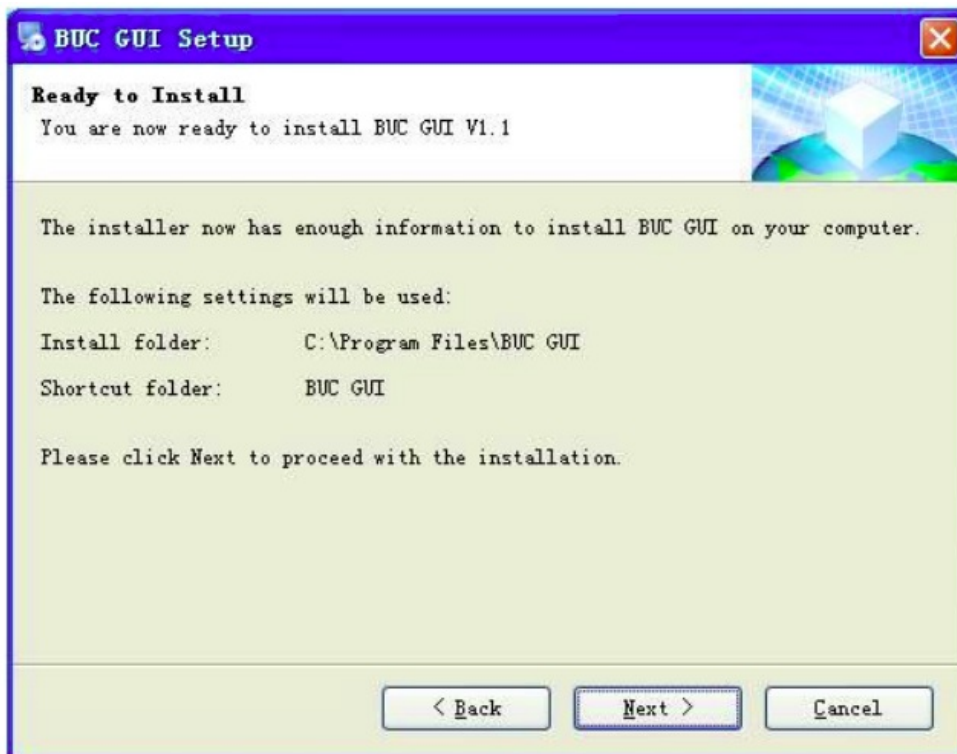
This interface shows the installation is completed.

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 addres 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.**
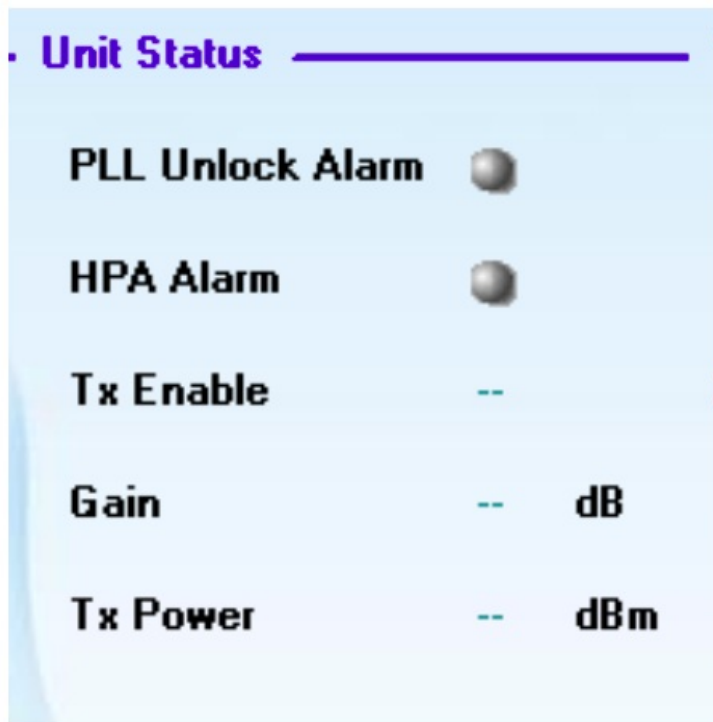

Click the Check Status button to confirm the device status.
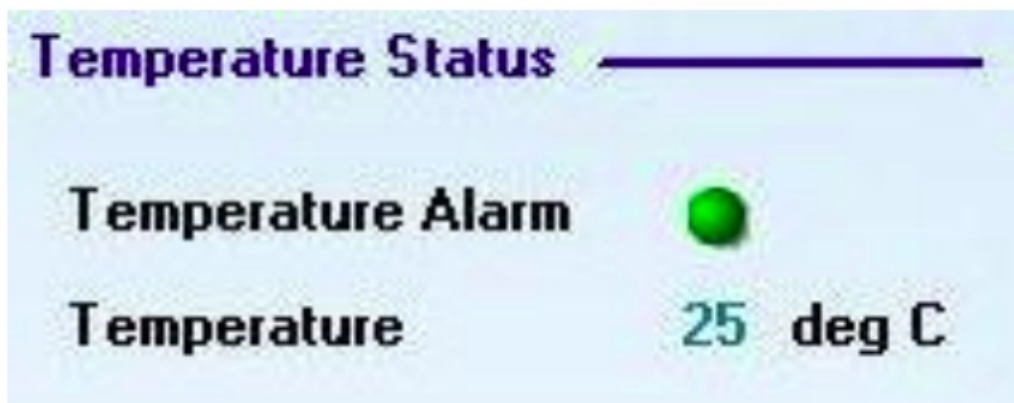

Unit Status

- **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.

Fan Status

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

TX Status Set

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

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Documents / Resources

	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

References

- **Norsat International Inc.**