

BPC-iMX6ULL-03 User Manual

Version: V1.0 (2022-06)

Editor: Polyhex Technology Company Limited (<http://www.polyhex.net/>)



Declaration of conformity

CE

This product has passed the CE test for environment specifications.

FCC

This equipment has been tested and found to comply with the FCC rules.

Technical support and assistance

1. Visit polyhex website <http://www.polyhex.net/> where you can find the latest information about the product.
2. Contact your distributor, sales representative or polyhex's customer service center for technical support if you need additional assistance. Please have the following info ready before you call:
 - Product name
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Safety instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any DC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. Keep this equipment away from humidity.
5. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
6. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
9. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
10. Never pour any liquid into an opening. This may cause fire or electrical shock.
11. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
12. If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
13. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW 0° C (0° F) OR ABOVE 70° C (158° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
14. Due to the sensitive nature of the equipment it must be stored in a restricted access location, only accessible by qualified engineers.

DISCLAIMER: Polyhex disclaims all responsibility for the accuracy of any statement of this instruction.

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Chapter 1 Introduction

1.1 Product introduction

BPC-iMX6ULL-03 is a RISC architecture platform with high performance, wide temperature and flexible design. It serves as a gateway connecting inverters and remote monitoring center in power and energy application, which plays an important role.

1.2 Hardware specifications

1.2.1 General

- **Certification:** FCC, CE
- **Dimensions(W x D x H):** 107mm x 107mm x 35mm
- **Power Requirements:** USB Type-C DC 5V
- **Weight:** 343g
- **OS Support:** Buildroot

1.2.2 System Hardware

- **CPU:** NXP i.MX 6ULL single core Arm Cortex-A7 792MHz
- **Memory:** 512MB DDR3/DDR3L
- **Indicators:** SYS LED, LAN(LINK, ACT),STAT LED
- **Storage:** 8GB eMMC

1.2.3 System Software

- **OS Support:** Buildroot

1.2.4 I/O Interface

- **LAN:** 1 x 10Mbps/100Mbps RJ45 port
- **USB Ports:** 1 x USB, Rev. 2.0 Host(default)
- **LED:** 1 x SYS LED, 1 x STAT LED
- **Button:** Can be customized(Bluetooth button by default)
- **SMA RF:** 1 x WIFI antenna(2.4GHz, 3dBi), 1 x LoRa antenna(optional), 1 x GPS antenna(optional)

1.2.5 Environment

- **Humidity:** 5 ~ 95%(non-condensing)
- **Operating Temperature:** 0~70°C

- **Operating Humidity:** 20~95%(non-condensing)

1.3 Safety Precaution

The following messages inform how to make each connection. In most cases, you will simply need to connect a standard cable.

Warning!



Always disconnect the power cord from your chassis whenever you are not working on it. Do not connect while the power is on. A sudden rush of power can damage sensitive electronic components. Only experienced electronics personnel should open the chassis.

Caution!



Always ground yourself to remove any static electric charge before touching BPC-iMX6ULL-03. Modern electronic devices are very sensitive to electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag.

Chapter 2 Hardware Function

2.1 Overview

The following figures show the indicators and connectors on BPC-iMX6ULL-03.

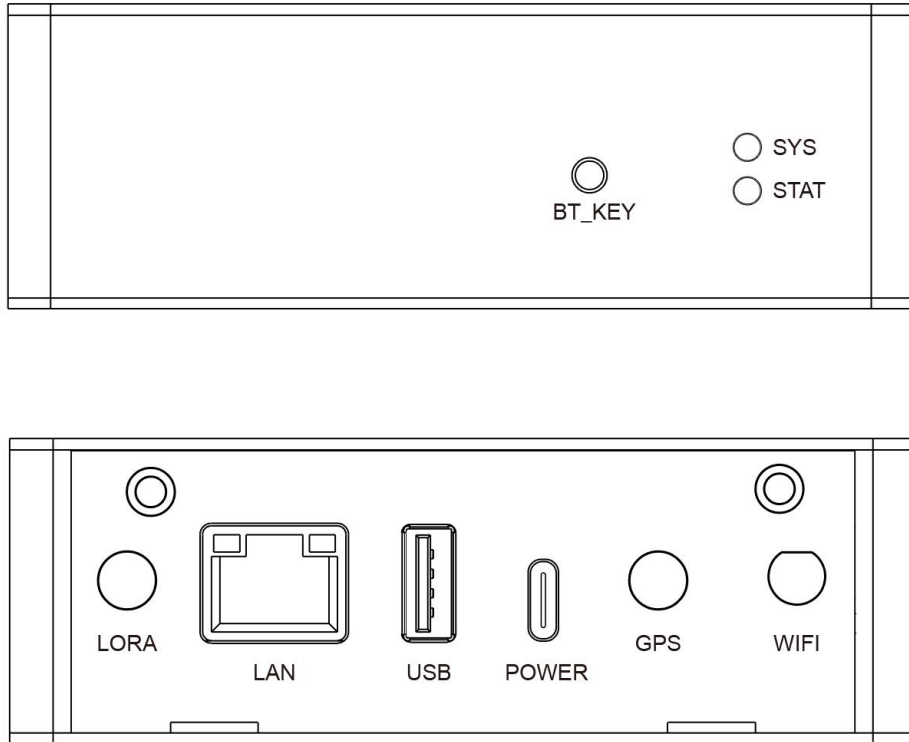


Figure1 BPC-iMX6ULL-03 overview

2.2 LED Status Indicator

2.2.1 System Status Indicator



Figure2 system status indicator

LED	Status	Description
SYS (in control)	Lighting	Power is on
	off	Power is off
STAT(in control)	blinking	System works normally
	off	System works abnormally

2.2.2 Ethernet Status Indicator

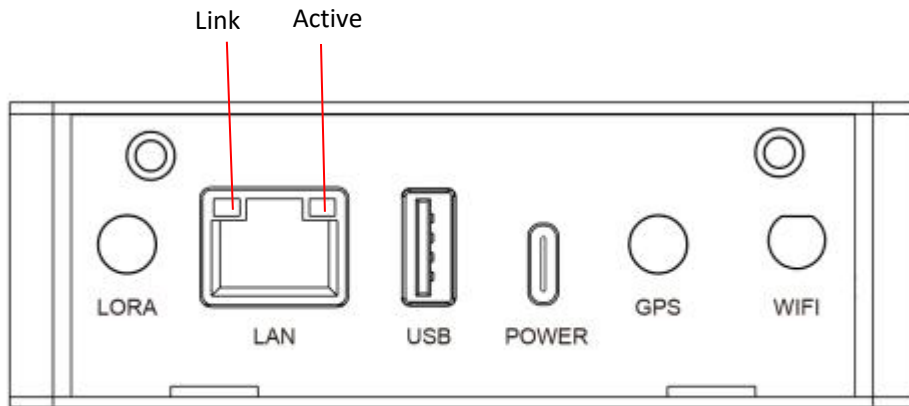


Figure3 Ethernet Status Indicator

LED	Color	Description
Link	Orange	Blinking, Ethernet data being transmitted
Active	Green	Lighting, the Ethernet cable is plugged in

2.3 Bluetooth button

Bluetooth button by default(can be customized)

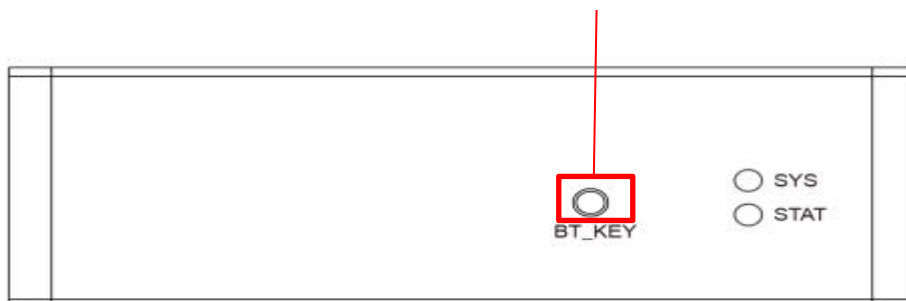


Figure4 Bluetooth button

By default, press Bluetooth button for 5s, the STAT LED will blink, which indicates the Bluetooth can be used.

Chapter 3 wiring and installation

3.1 Wiring

3.1.1 Power Supply Wiring

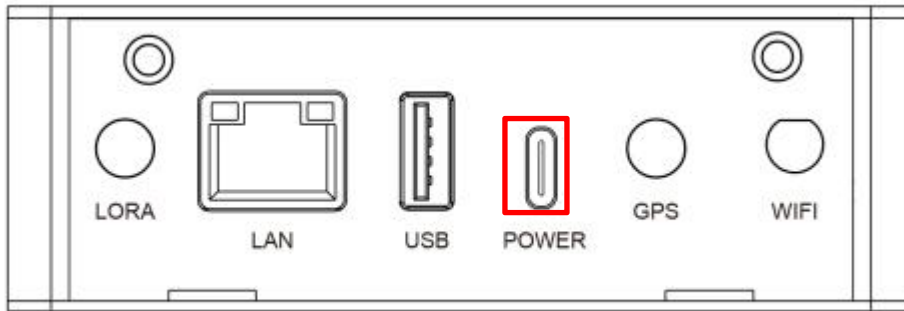
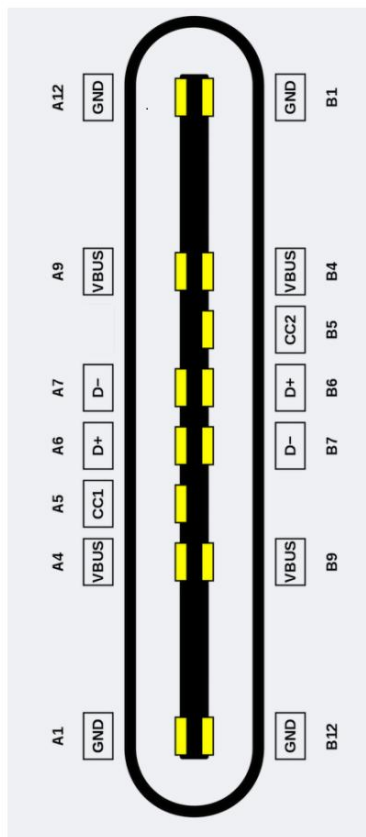


Figure5 Power supply wiring

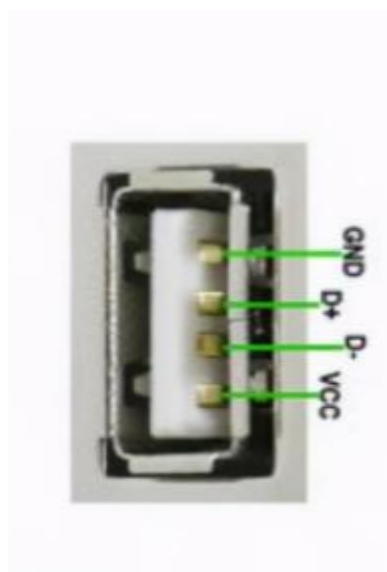
BPC-iMX6ULL-03 supports power input DC 5V.



Type C connector pin assignments			
pin	signal	pin	signal
A1	GND	A2	
A3		A4	VBUS
A5	CC1	A6	D+
A7	D-	A8	
A9	VBUS	A10	
A11		A12	GND
B1	GND	B2	
B3		B4	VBUS
B5	CC2	B6	D+
B7	D-	B8	
B9	VBUS	B10	
B11		B12	GND

3.1.2 Communication Ports

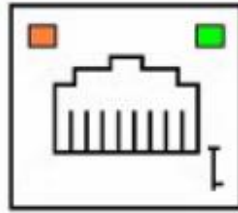
3.1.2.1 USB Connector



USB Connector Pin Assignment	
Pin	Signal
1	VCC
2	DATA-
3	DATA+
4	GND

Default: UART-MODE

3.1.2.2 LAN Connector



LAN Connector Pin Assignments		
Pin	Assignment	Description
1	TD+	Transmit+
2	TD-	Transmit-
3	RD+	Receive+
4	N/C	Not used

3.2 Installation

- Check the BPC-iMX6ULL-03 box pc, Wi-Fi antenna and power adapter after you receive the product.



Figure6 antenna

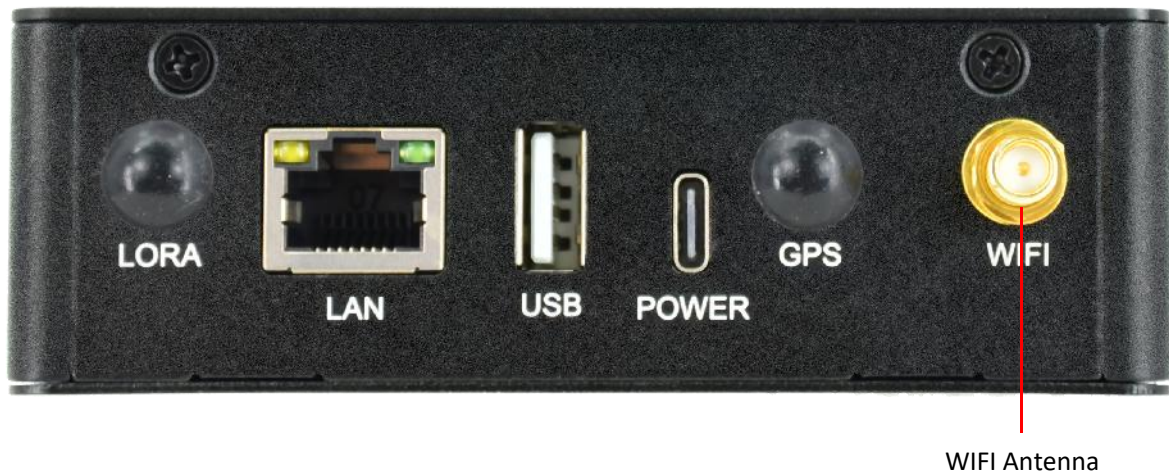


Figure7 BPC-iMX6ULL-03

- Connect the antenna to the corresponding antenna interface



Figure8 power adapter



Figure 9 BPC-iMX6ULL-03 with antenna

- Connect the power adapter to the power interface of BPC-iMX6ULL-03



Figure 10 BPC-iMX6ULL-03 with antenna

When you find that the SYS LED is lighting, and the STAT LED is blinking, it means the gateway has been powered on.