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TECHNOLOGIES
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XTENDEX[®] Series

USB-C5

USB-C5-CE

USB EXTENDER

Installation and User Guide



Front and rear view of USB-C5-CE Devices Unit

TRADEMARK

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CHANGES

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

Shielded CAT 5,5e, or 6 cable must be used to connect to the CAT5 ports in order to meet CE emission and immunity requirements.

**CE Statement**

We, Network Technologies Inc, declare under our sole responsibility that the USB-C5-CE is in conformity with European Standard EN55022.

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INTRODUCTION

The NTI USB-C5 USB Extender was designed to allow the connection of up to 4 USB devices (keyboards, mice, cameras, etc.) to a USB CPU using unshielded CAT5 cable. It acts as a remote USB HUB. The USB-C5 USB Extender is self-powered and designed for high power devices.

It is extremely simple to install and has been thoroughly tested to insure reliable performance. Through the use of Category 5 unshielded twisted-pair cable it is possible to economically increase the range of the USB.

Available Option

- Model USB-C5-CE has been tested and certified to meet CE emission and immunity requirements.

Glossary

- bus-powered- devices powered from the USB cable- .5A (500mA) maximum
- self-powered- devices powered from a local source (such as batteries or transformer) requiring only negligible current draw from the USB cable

Limitations (For bus powered devices only- exclude self-powered devices from calculation)

The total length of the CAT5 cable between a USB CPU and devices connected to the USB-C5 USB Extender must not exceed 100 feet.

Note: "total length" includes the USB cable from the CPU + the CAT5 cable + cable length to any device.

Materials

Materials Supplied with this kit:

- NTI USB-C5 (or USB-C5-CE) USB Extender Devices Unit (Local)
- NTI USB-C5 (or USB-C5-CE) USB Extender CPU Unit (Remote)
- 120VAC or 240VAC at 50 or 60Hz-9VDC/1.5A AC Adapter
- Line Cord, country specific
- USB-AB-1M Cable
- This owner's manual

Materials Not Supplied, BUT REQUIRED:

- CAT5 Cable

PREPARATION FOR INSTALLATION

- A location should be chosen for the Devices Unit such that cables from the supported devices will reach it.
- The CAT5 cables must be run to the locations where the Devices Unit and CPU Unit will be mounted. Be careful to route the cables away from any sources of magnetic fields or electrical interference that might reduce the quality of the signal (i.e. AC motors, welding equipment, etc.) .

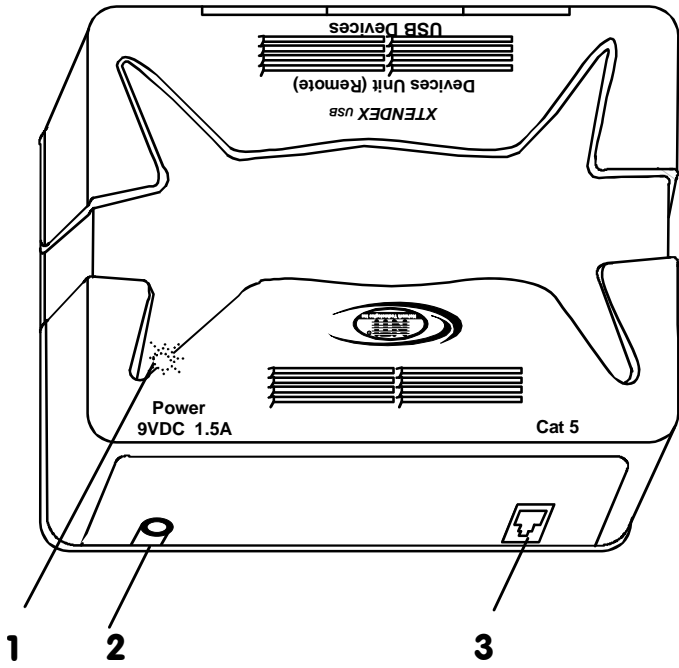
NOTE: The installer must ensure that all CAT5 cable between the USB-C5 Extender CPU unit and Devices Unit is of the straight-through type and not crossed.

- A 120V or 240V electrical outlet (depending on the AC adapter being used) must be installed close enough to the mounting location of the Devices Unit to plug the AC adapter into.
- All cables should be installed in such a way that they do not cause stress on their connections to the equipment. Extended lengths of cable hanging from a connection may interfere with the quality of that connection. Secure cables as needed to minimize this.
- Properly shut down and disconnect the power from the CPU and devices to be extended. If other equipment is involved whose connections are being interrupted, be sure to refer to the instruction manuals for that equipment for proper disconnection and re-connection procedures before proceeding.

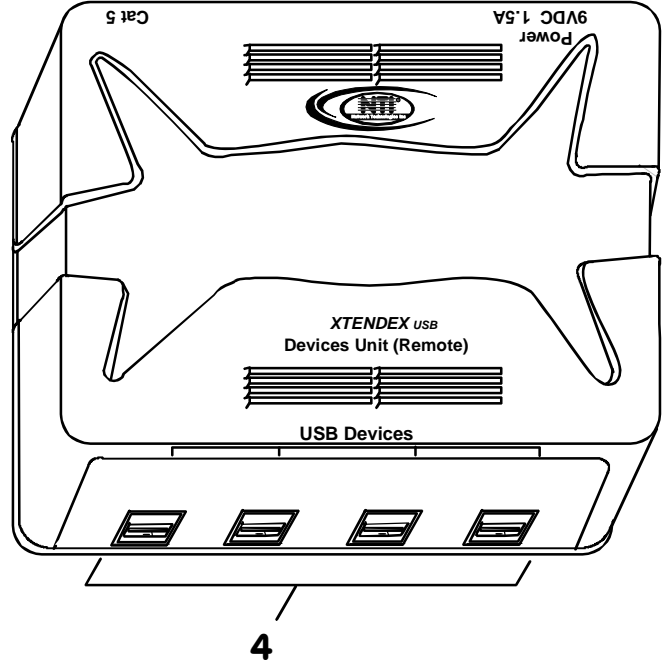


Front and rear view of USB-C5 Devices Unit
(non-CE)

Front View of USB-C5 DEVICES UNIT



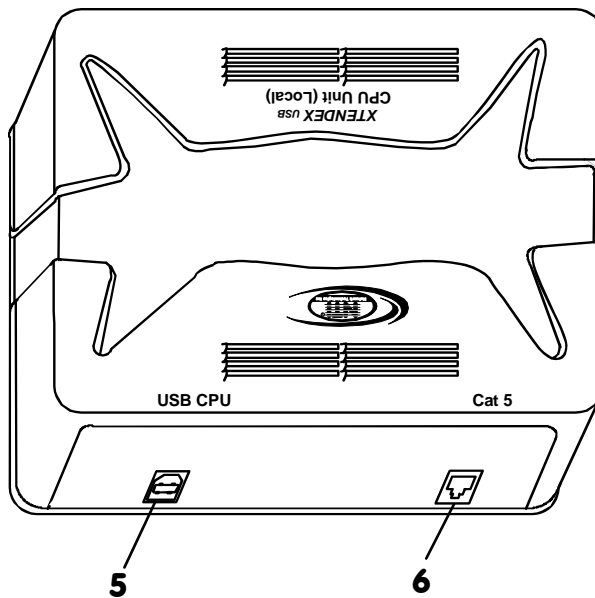
Rear View of USB-C5 DEVICES UNIT



FEATURES AND FUNCTIONS

1. Power- LED to indicate the USB Extender has power to operate
2. 9VDC 1.5A- connection jack for the AC adapter
3. CAT5- RJ45 female connector- for attachment of the CAT5 extension cable to/from the CPU Unit
4. USB DEVICES- USB type A female receptacles- for connection of user USB device(s)
5. CPU x- USB type B female receptacles-for connection of USB device cable from CPU
6. CAT5- RJ45 female connector- for attachment of the CAT5 extension cable to/from the Devices Unit

Front View of USB-C5 CPU UNIT



INSTALLATION

The CPU Unit (Local)

1. Position the CPU Unit such that the CAT5 cable, the AC adapter power cable, and the USB cable from the CPU can reach the CPU Unit.
2. Connect the USB type B male end of the USB-AB-1M cable to the USB type B female port on the CPU Unit (Local). (See Fig.1.)
3. Connect the USB type A male end of the USB-AB-1M cable to a USB type A port on the CPU. (See Fig.1.)
4. Connect the CAT5 cable to the "CAT5" port on the CPU Unit (Local). (If an RJ45 wall outlet is being used, connect the other end of the extension cable to it.) When properly inserted the cable end should snap into place. (See Fig. 1.)



WARNING: Never connect the USB-C5 Extender to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.

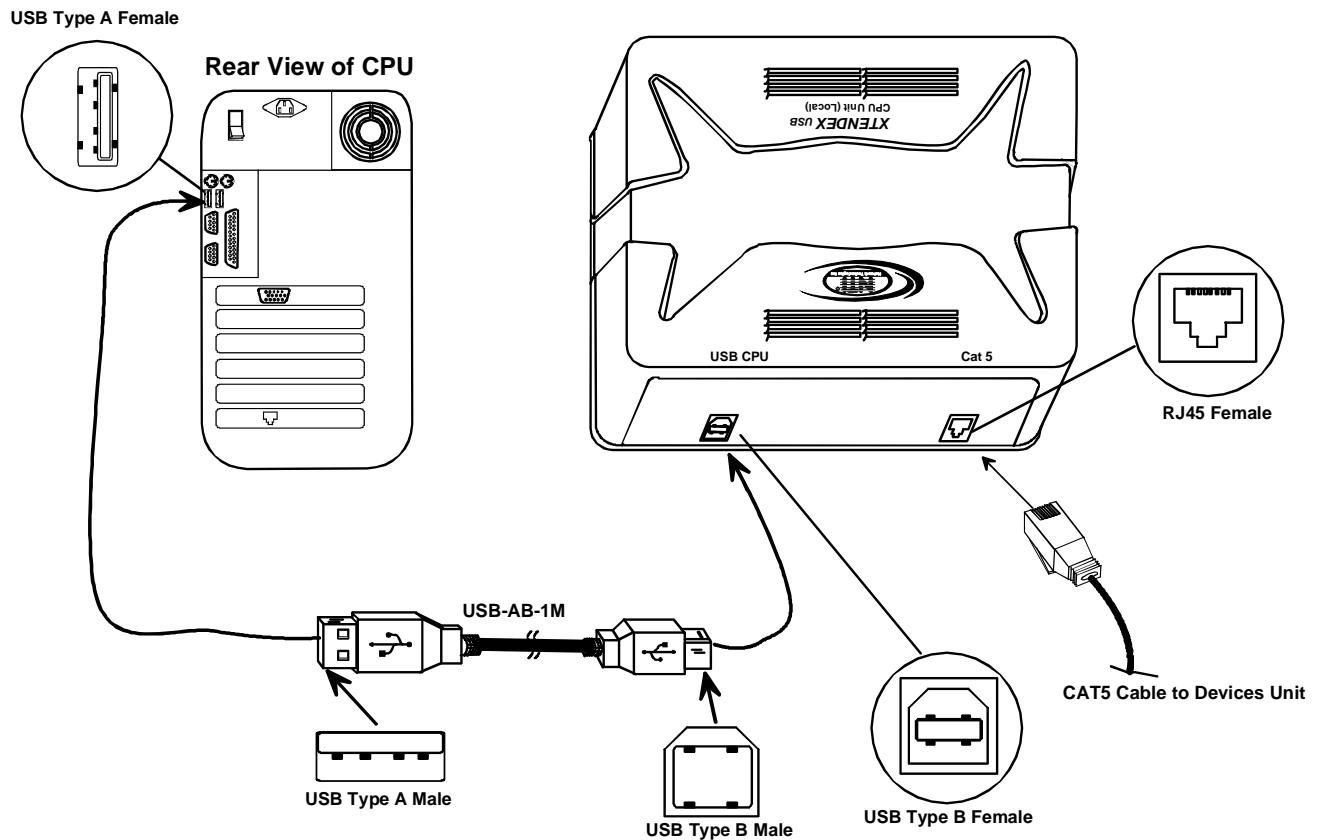


Figure 1- Connect the CAT5 USB Extender to a CPU

Note: Disconnection of the CAT5 cable from either the Remote or Local unit may cause unexpected behavior of the connected CPU (i.e. Windows blue screen lock-up, system reboot, etc.).

The Devices Unit (Remote)

1. Position the Devices Unit such that the CAT5 cable, the devices to be used, and the AC adapter power connector can each reach the Devices Unit.
2. Connect the device cable(s) to the USB port(s) on the Devices Unit. (See Fig. 2.)

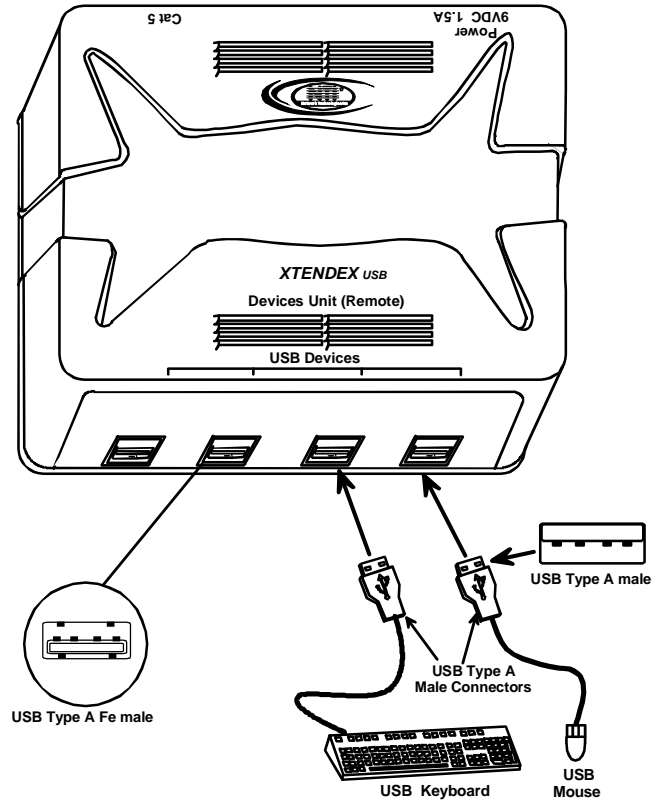
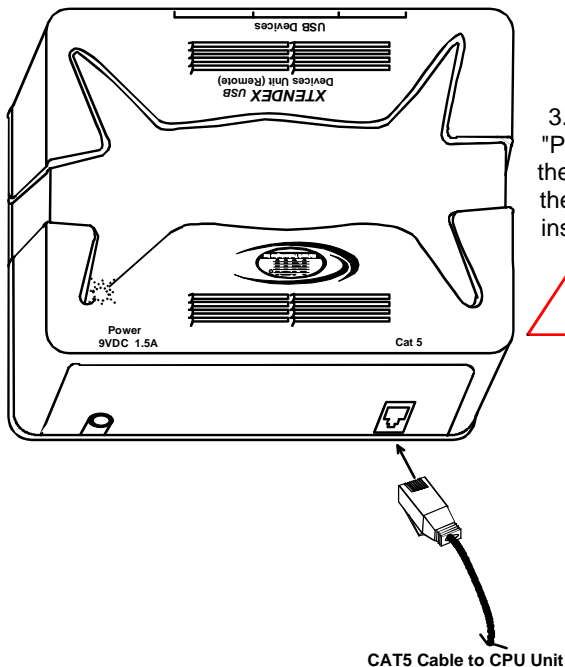


Figure 2- Connect devices to the CAT5 USB Extender



WARNING: Never connect the USB-C5 Extender to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.

3. Make sure the CAT5 cable has been installed in accordance with the "Preparation for Installation" instructions on page 2. Connect the CAT5 cable to the "CAT5" port on the Devices Unit. (If an RJ45 wall outlet is being used, connect the other end of the extension cable to the RJ45 wall outlet.) When properly inserted the CAT5 cable end should snap into place. (See Fig. 3.)

Figure 3- Attach the CAT5 cable to the Devices Unit

Plug-in and Boot Up

1. Connect the AC adapter power connector to the 9VDC port on the Devices Unit. Make sure the power connector is properly inserted. (See Fig. 4.)
2. Plug the AC adapter into a power outlet. The power LED on the Devices Unit (see Fig. 4) should illuminate indicating that a proper power connection has been made.

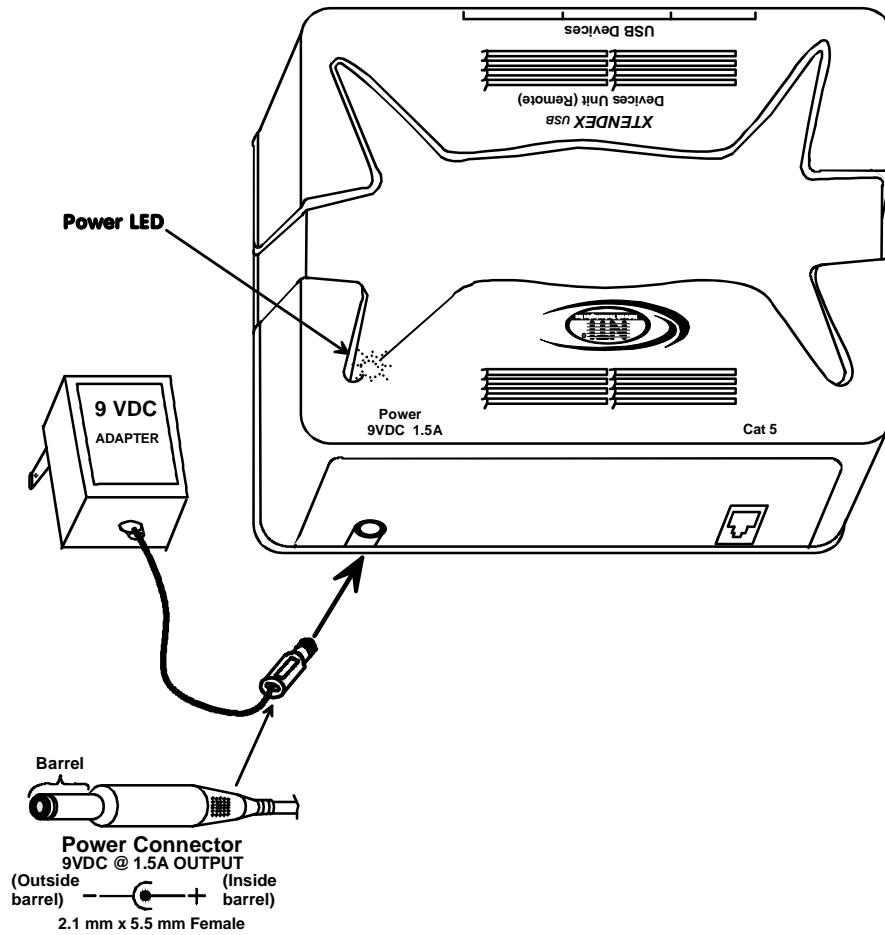


Figure 4- Connect the AC adapter to the Devices Unit

3. Turn ON the CPU. The devices should each react as if they were directly connected to the CPU.

TECHNICAL SPECIFICATIONS

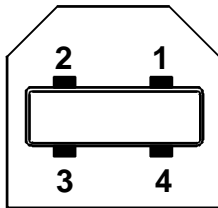
General Specifications

Interconnect Cable	CAT 5 Solid UTP EIA/TIA 568 B wiring w/RJ45 connectors
Devices Unit (Remote) Power	120 or 240 VAC / 9VDC / 1.5A AC Adapter
CPU Unit (Local) Power	self-powered unit via CAT5 extension cable
USB-C5 USB Extender (Devices Unit and CPU unit combined) current draw (without any bus-powered devices connected)	.3A @ 9VDC

USB TYPE B

PIN #	SIGNAL
1	+VCC
2	- DATA
3	+DATA
4	GND

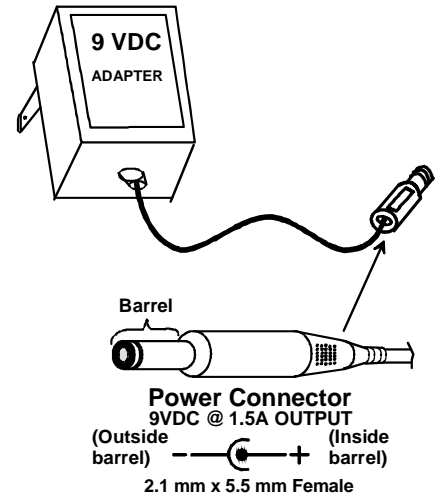
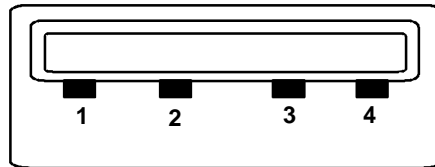
Mating face of a USB Type B Female



USB TYPE A

PIN #	SIGNAL
1	+VCC
2	- DATA
3	+DATA
4	GND

Mating face of a USB Type A Female



Power Requirements

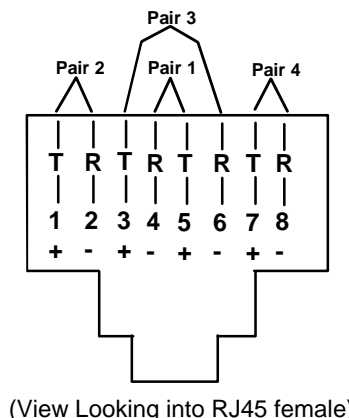
The NTI USB-C5 Extender is designed to operate with up to four devices whose combined current consumption cannot exceed 1.2A. In most applications, the combined current consumption of the devices attached will not exceed 1.2A. To determine how much current the application will require, find the amount of current each device uses (usually printed on a label on the device as xxA or xxmA) and add them up. If the total current consumption of the devices to be connected exceeds 1.2A (or 1200mA), do not connect all devices at the same time to the USB-C5 Extender. Connect only those devices whose combined current consumption is equal to or less than 1.2A (1200mA).

Interconnection Cable Wiring Method

The CAT5 connection cable between the Devices Unit and CPU Unit is terminated with RJ45 connectors and must be wired according to the EIA/TIA 568 B industry standard. Wiring is as per the table and drawing below.

WARNING: It is imperative that the cable used for interconnection is of the straight-through type and not crossed.

Pin #	Wire Color	Pair	Function
1	White/Orange	2	T
2	Orange	2	R
3	White/Green	3	T
4	Blue	1	R
5	White/Blue	1	T
6	Green	3	R
7	White/Brown	4	T
8	Brown	4	R



TROUBLESHOOTING

Each and every piece of every product produced by Network Technologies Inc is 100% tested to exacting specifications. We make every effort to insure trouble-free installation and operation of our products. If problems are encountered while installing this product, please look over the troubleshooting chart below. If an answer is not found in the chart, check the FAQs (Frequently Asked Questions) at our website at www.networktechinc.com or contact NTI directly for help at 800-742-8324 (800-RGB-TECH) in US & Canada or 330-562-7070 (worldwide). We will be happy to assist in any way we can.

Problem	Cause	Solution
Devices Unit power LED does not illuminate	Power supply is not connected or plugged-in.	Make sure outlet is live and AC adapter is plugged in. Also make sure power jack is fully connected to the Devices Unit.
Extender is shown as a Generic USB Hub with a green "?" next to it in the device manager (WIN ME)	Windows didn't know the exact driver to install but installed a compatible driver	This is normal. No action is necessary. For more information see Microsoft Knowledge Base Article 275012. http://support.microsoft.com
CPU will not recognize the mouse when the mouse is plugged into the extended keyboard USB port	Some MAC CPUs (i.e. Mini-MAC) have drivers that won't see devices connected to a USB hub (the keyboard) that is also connected to a USB hub (the XTENDEX).	Plug mouse directly into the USB port on the XTENDEX Remote unit.

WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at <http://www.networktechinc.com> for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

MODEL : USB-C5
 USB-C5-CE

SERIAL NO: _____

SERIAL NO: _____

DATE: _____

DATE: _____

INSPECTED BY: _____

INSPECTED BY: _____

DEVICES UNIT

CPU UNIT