

ET-3G UC20 (P-ET-A-00511)

**3G 800/850/900/1900/
2100 MHz**

**GSM 850/900/1800/
1900 MHz**

new



Specification of MODULE UC20G

- Be Module from QUECTEL
- Be compatible with network of UMTS/ HSPA+ and GSM/ GPRS/ EDGE
- Support Frequency in 3G(UMTS) network 800// 850/ 900/ 1900/ 2100 MHz
- Support Frequency in GSM network 850/ 900/ 1800/ 1900 MHz
- Maximum transmission of data: HSPA+ MAX 14.4 Mbps(DL)/ MAX 5.76 Mbps(UL)
- Support Protocol PPP/ TCP/ UDP/ FTP/ HTTP/ FILE/ MMS/ SMTP/ SSL/ PING
- Support AT COMMAND (COMPLIANT WITH 3GPP TS27.007, 27.005 and QUECTEL ENHANCED AT)
- Support navigation by satellite (GNSS); it is compatible with GPS (USA) and GLONASS (RUSSIA). It uses Chip GPSONE GEN8 from QUALCOMM, Protocol NMEA0183; it has to be used with ACTIVE Antenna and Power Supply 3.3V.
- INTERFACE
 - AUDIO DIGITAL AUDIO THROUGH PCM INTERFACE
 - USB 2.0 HIGH SPEED
 - UART 1 x FULL FUNCTION, 1 x DEBUG
 - ADC x 2, 15 BITS
 - RTC BACKUP REAL TIME CLOCK

ET-3G UC20 is the latest board from ETT for learning and developing the communication by mobile telephone. It uses Module UMTS/ HSPA+ UC20G from QUECTEL. It is compatible with 3G network and GSM network; moreover, there is its own GNSS network that can be compatible with GPS and GLONASS.

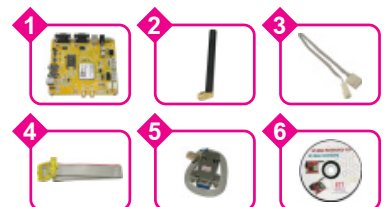
- Have Converter circuit to convert LOGIC TTL from 3V to 5V. It can connect with Board Microcontroller LOGIC 5V directly if user does not need to connect through LINE DRIVER RS232.
- Have LINE DRIVER RS232 in case of connecting Board Microcontroller to ET-3G UC20 through PORT RS232 (9600-921600 bps) by Connector DB9 PIN FEMALE and Connector 4PIN ETT on board.
- Have PORT USB 2.0 (HEADER TYPE B) for communicating PORT USB to computer PC running on WINDOWS XP/VISTRA/7/8
- Have SW.ON/OFF to enable/disable operation of Module internal board
- Have SW.RESET to reset operation of Module internal board
- Have 2 REGULATE Circuits, it is compatible with external Power Supply 5VDC 2A and higher
 - Use 3.88V/3A REGULATE Circuit to supply power to Module.
 - Use 3.3V/200mA REGULATE Circuit to supply power to circuits external Module.
- Have LED to show operational status; VBAT, STATUS, SLEEP, NET MODE, NET STATUS
- Have Connector to interface with HANDSET (the part of land line to speak into and listen to), it is Connector RJ11 for speaking into
- Have Connector PORT DB9 PIN FEMALE and Connector 4 PIN ETT; 1 PORT is used as PORT RS232 and another 1 PORT is used as DEBUG.
- Have 2 of Connector 10 PIN IDE from ETT to connect with PORT of Board Controller directly to send/receive data instead of PORT RS232 and it reads values and controls Module.
- Have JACK 3.5 mm. to connect with Microphone and earphone.
- Have SOCKET SIM as FULL SIZE SIM type; it supports SIM CARD 1.8V and 3.3V; moreover, there is ESD Circuit to protect SIM from damaged.
- Have 2 of SMA JACK to interface antenna of mobile phone and antenna of navigation by satellite (GNSS)
- Use POWER SUPPLY 5-12VDC for board that is Connector DC JACK 2.5 mm. (anode-outer and cathode-inner) and Connector 2 PIN TERMINAL BLOCK.



• Interface GNSS Antenna

NOTE: It should use POWER SUPPLY of ETT "ET-SWITCHING ADAPTER 5V 2A TYPE J" (A-AP-A-00093).

- Board size: 12.6 x 11.3 cm.
 - **ET-3G UC20** consists of ...
1. Board and MODULE UC20G
 2. Antenna as L-TYPE using Frequency 800/850/900/1900/2100 MHz
 3. Connector 4 PIN RS232
 4. Pair Cable 10 PIN
 5. Cable ET-RS232 DB9 PIN F
 6. CD-ROM Manual and Program



* OPTION *

• ET-SWITCHING ADAPTER 5V 2A TYPE J (A-AP-A-00094)



FEMALE JACK 2.5 mm.

Under TISI Standards and UL
INPUT : AC INPUT 220VAC 50/60Hz 0.5A
OUTPUT : DC 5V/2.0A (10W)

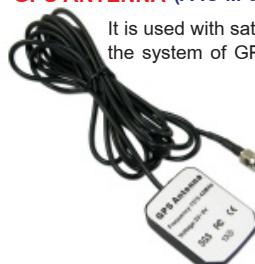
• GPS+GLONASS ANTENNA (A-IC-M-00045)

It is used with satellite in the system of GPS and GLONASS.



• GPS ANTENNA (A-IC-M-00027)

It is used with satellite in the system of GPS.



• CABLE USB 2.0 AM/BM 1.8M (A-CB-A-00043)



ET-RS232/1-WIRE (P-ET-A-00512)

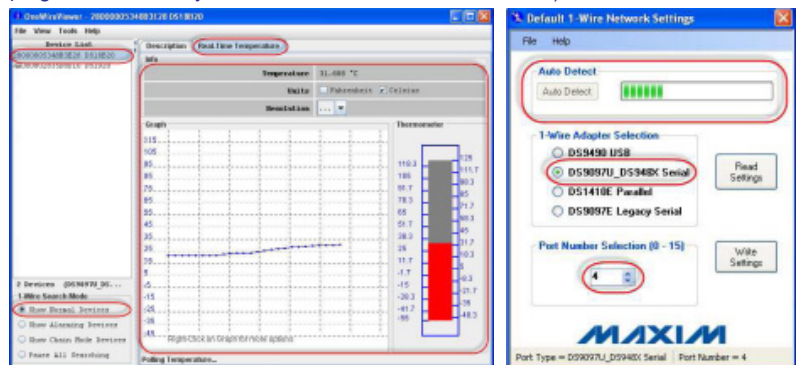


ET-RS232/1-WIRE is a connecting point for 1-WIRE device according to the standards and specification of DALLAS or MAXIM INTEGRATED; it reduces much difficulty in reading/writing data for 1-WIRE devices that require highly accurate period. This product uses IC No.DS2480B; this Chip is particularly designed for connecting with 1-WIRE device. Especially from 1-WIRE, it can be connected through PORT RS232 that is easier and more convenient to use and connect with 1-WIRE device.

There are 2 types of connection as follows;

1. Connecting with ET-REMOTE LAN : ETT Board that can be connected with LAN System has Connector RJ9 on Board ET-REMOTE LAN, it can be connected with ET-RS232/1-WIRE directly. Moreover, there is Command Package internal ET-REMOTE LAN for reading/writing.

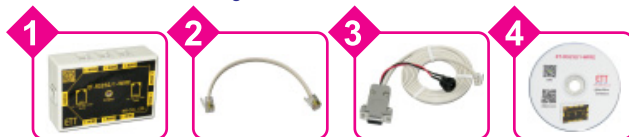
2. Connecting with general RS232 devices : Especially, it is connected with PORT RS232 of computer PC on OS WINDOWS 7/8 (32 BIT only). MAXIM INTEGRATED provides Software Package for customers to read, write, graph, and store data (this program has already been contained in CD-ROM of ETT).



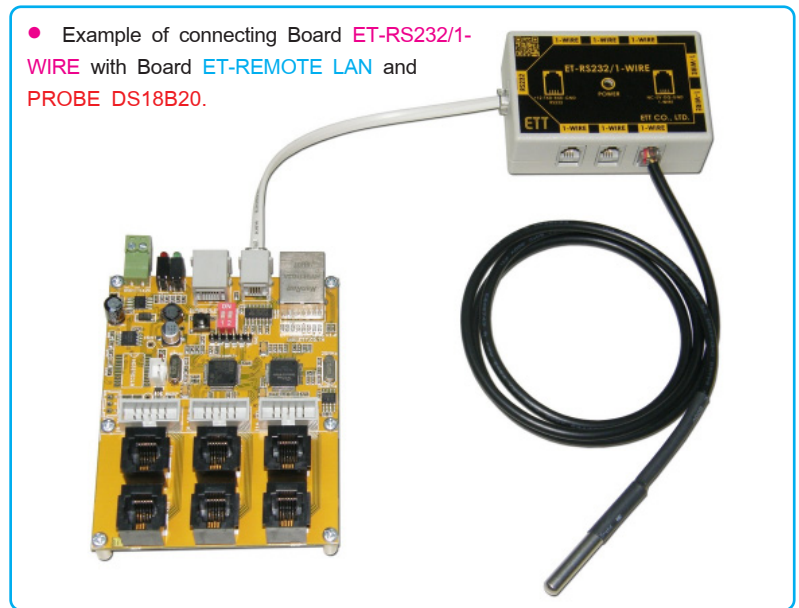
Specifications of ET-RS232/1-WIRE

- Use Chip DS2480B SERIAL PORT TO 1-WIRE DRIVER
- Be connected through PORT RS232 as NULL MODEM (RXD,TXD,GND)
- Support BAUDRTE in the range of 9600-115200 bps
- Support connection with iBUTTON devices and 1-WIRE devices
- Have 8-CH RJ9 for connecting with 1-WIRE devices
- Have Connector PORT RS232 through Connector RJ9
- Plastic box size containing ET-RS232/1-WIRE is 7.5 x 2.5 x 5 cm.
- Use POWER SUPPLY DC 7-12VDC. If using with ET-REMOTE LAN, it does not need to use any external POWER SUPPLY because it can use
- Power Supply from ET-REMOTE LAN directly. If using with computer PC or other devices, it should use POWER SUPPLY " ET-SWITCHING ADAPTER 12V 1A TYPE J" (A-AP-A-00098)

- **ET-RS232/1-WIRE** consists of...
 1. Box with Circuit ET-RS232/1-WIRE
 2. CABLE RJ9-RJ9-15CM
 3. CABLE RS232-1-WIRE-150CM
 4. CD-ROM Manual and Program



- Example of connecting Board **ET-RS232/1-WIRE** with Board **ET-REMOTE LAN** and **PROBE DS18B20**.



OPTION for using with ET-RS232/1-WIRE

- **PROBE DS18B20 1M (P-ET-A-00515)**



This PROBE is STAINLESS that has IC DS18B20 insides; it is shielded well and it is waterproof for 1 meter in depth. The Connector is RJ9 type to measure temperature in the range of -55°C to +125°C.

- **SOCKET DS9100A & DS9100C (P-ET-A00514)**



This product is used to interface and touch for reading value of iBUTTON DS1990; it is provided with Cable RJ9 with 1 meter in length. It can be connected with ET-RS232/1-WIRE directly.

- **IBUTTON DS1990 & DS9093A (J-PS-A-00026)**

**** It cannot be used with ET-REMOTE LAN.**



It is iBUTTON device that consists of...

- **DS1990A-F5:** It is 1-WIRE device that has its own original 64BIT numeric (16 DIGIT) insides and it uses 2.8V-6.0V Power Supply.
- **DS9093A:** It is black plastic holder to hold up DS1990A; so, it is more convenient to hold the device.

- **ET-SWITCHING ADAPTER 12V 1A TYPE J (A-AP-A-00098)**



FEMALE JACK 2.5 mm.

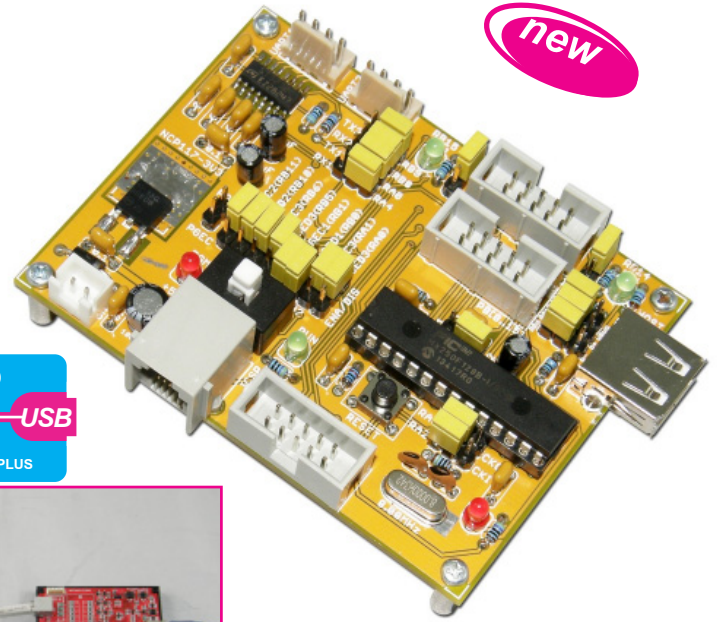
 Under TISI Standards and UL
INPUT : AC INPUT 220VAC 50/60Hz 0.5A
OUTPUT : 12VDC 1A

ET-BASE PIC32MX250F128B (P-ET-A-00513)

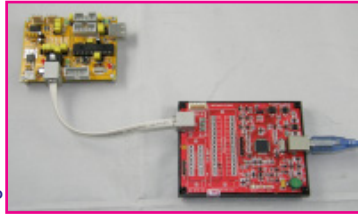
This is the latest ETT Board in the series of PIC32MX of MICROCHIP; it uses 32 BIT MCU No.PIC32MX250F128B 28- on board.

SPECIFICATIONS

- Use MCU No.PIC32MX250F128B 28 PIN DIP
 - 32 BIT CORE 50 MHz/ 83 DMIPS MIPS32M4K
 - INTERNAL OSCILLATOR 8 MHz, PHASE LOCK LOOP
 - 128 KBYTE FLASH PROGRAM, 3 KBYTE FLASH BOOT MEMORY
 - 32 KBYTE SRAM, WATCHDOG TIMER
 - 21 I/O PIN, 19 PIN REMAPPABLE I/O, 5 TIMER/ 5 CAPTURE/ 5 COMAPARE, 2 UART, 2 SPI, 5 EXTERNAL INTERRUPT, 2 I2C, 9 CH ADC 10 BIT, 1 USB
 - 2.3V TO 3.6 V RUN
 - Use CRYSTAL Frequency 8.00 MHz
 - 2 CH CONNECTOR RS232 PORT 4 PIN ETT
 - 3 of CONNECTOR I/O PORT 10 PIN ETT; RA0-4, RB0-7, RB8-15
 - 2 of LED to test on board; RB14, RB15
 - CONNECTOR RJ11, ICSP connects with Programmer and Debugger Device under ICSP standards of MICROCHIP; it is compatible with ICD3 or PICKIT3. For ETT product that is compatible with this board is ET-PGM PIC PK3 (P-ET-A-00463) And ET-PGM PIC PK3 PLUS (P-ET-A-00464)
 - 1 SW and JUMPER choose and switch Signals to be ICSP and GPIO; and LED shows status of RUN or PROGRAM.
 - 1 PORT USB HOST TYPE B with Jumper to connect/disconnect
 - I/O PORT PIN of PIC32MX can receive the maximum voltage at 3.3V; except RB5-RB11, it can receive INPUT LOGIC 5V.
 - +5VDC POWER SUPPLY for board with HEADER TYPE B, it is compatible with ET-SWITCHING ADAPTER 5V 2A TYPE B (A-AP-A-00095)
 - PCB Size: 8.20 x 6.20 cm.
 - ET-BASE PIC32 consists of ...
1. Board 2. CD-ROM Manual and Programs



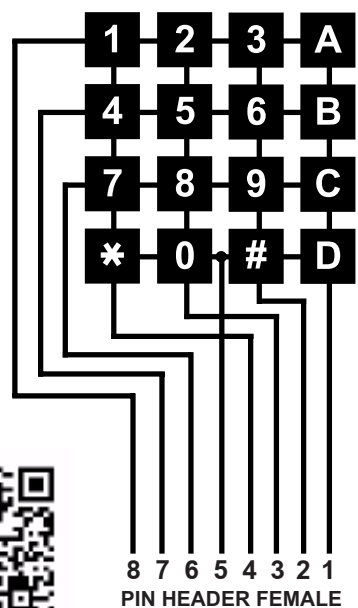
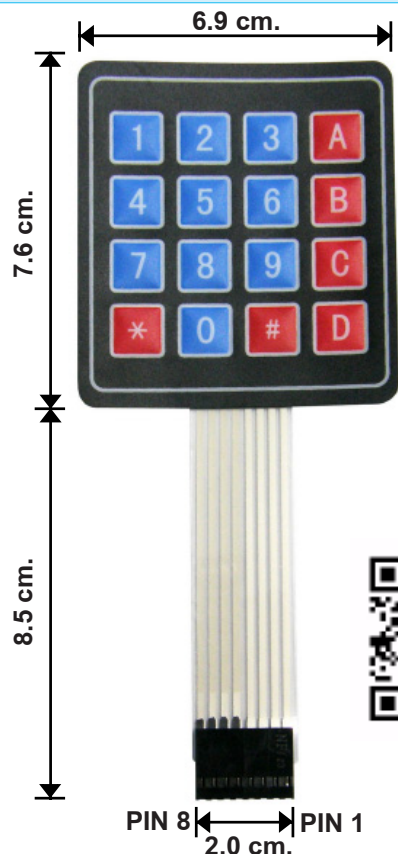
DOWNLOAD BY
 ET-PGM PIC PK3
 ET-PGM PIC PK3 PLUS



The connection between Board ET-BASE PIC32MX250F128B and Programmer device ET-PGM PIC PK3



4x4 MATRIX KEYPAD (C-YA-A-00186)



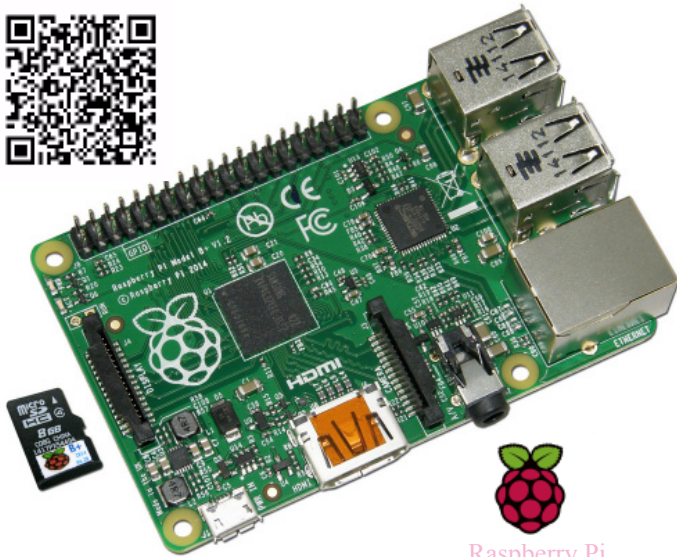
KEY SPECIFICATIONS

- MAXIMUM RATING : 24 VDC 30 mA
- INTERFACE : 8-PIN, 2.54 mm. PITCH FEMALE
- 4 x 4 MATRIX KEY MEMBRANE
- CABLE LENGTH 8.5 cm. (INCLUDE CONNECTOR) x 2.0 cm.
- WEIGHT 8 g.
- INSULATION SPEC : 100 M Ohm, 100 V
- CONTACT BOUNCE <= 5 ms.
- ON CONTACT SWITCH : 30-400 Ohm
- LIFE EXPECTANCY 1 MILLION CLOSURES
- OPERATION TEMPERATURE -20 TO +40 °C
- DIMENSION : KEY PAD 2.7 x 3.0 inch (6.9 x 7.6 cm.)
- MOUNT STYLE : PLEASE REMOVE THE ADHESIVE TAPE ON THE BACK OF THE KEY PAD AND STICK THE KEY PAD ON CLEAN SURFACE

RASPBERRY-MOD B+ - 512M+SD8G (C-YA-A-00192)

This is set of **RASPBERRY PI MODEL B+, 512 MB with 8 GB SD CARD** that has already been installed the Operating System.

It is the latest RASPBERRY Pi MOD B+ that replaces the old board; it is made in UK, it is mini Board Computer 32 BIT with 512 MB memory that has enough for the operating Systems such as LINUX, FEDORA, ARCH LINUX, RISC OS.



Raspberry Pi

- CHIP BROADCOM BCM2835 SoC
- CORE ARM11 ; CPU 700MHz LOW POWER ARM1176JZFS
- GPU DUAL CORE VIDEO CORE IV
- MEMORY 512MB SDRAM
- OPERATING SYSTEM BOOTS FROM MICRO SD CARD
- DIMENSION 85 x 56 x 17 mm.
- POWER MICRO USB SOCKET 5V/2A

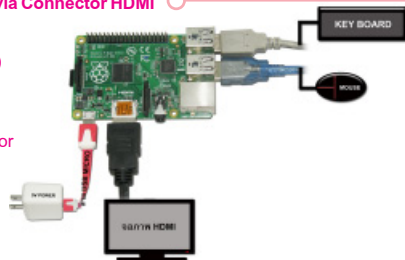
It provides Connectors for

- **GPIO CONNECTOR** : It changes from 26 PIN to 40PIN, the part of 26PIN is the same as the old model
- **USB** : It increases to 4 PORT USB 2.0 for connecting with KEY BOARD and MOUSE conveniently.
- **ETHERNET** : 10/100 BASE, RJ45
- **VIDEO OUTPUT** : HDMI and CONNECTOR RCA (PAL AND NTSC)
- **AUDIO OUTPUT** : 3.5 mm. JACK and HDMI
- **CAMERA CONNECTOR** : 15-PIN MIPI CAMERA SERIAL INTERFACE (CSI-2)
- **MEMORY CARD SLOT** : MICRO SD

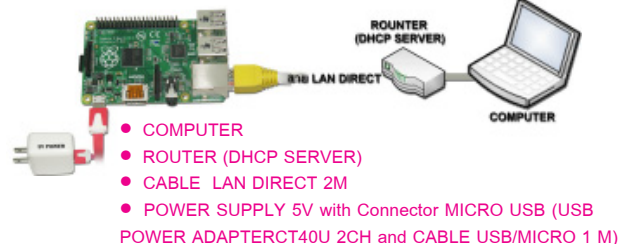
Accessories for connecting with Board RASPBERRY PI that has SD CARD are;

Solution 1: Connecting Display via Connector HDMI

- Display receives Signal via HDMI
- Cable HDMI (CABLE HDMI/HDMI 2.0)
- KEY BOARD USB
- MOUSE USB
- POWER SUPPLY 5V with Connector MICRO USB (USB POWER ADAPTER CT40U 2 CH and CABLE USB/MICRO 1M)

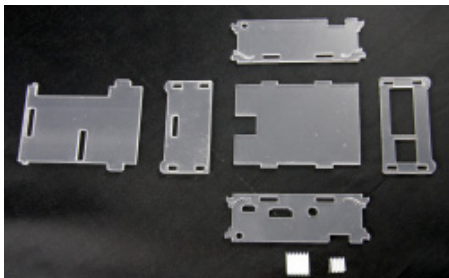


Solution 2: Connecting via RJ45 LAN, it requires



- COMPUTER
- ROUTER (DHCP SERVER)
- CABLE LAN DIRECT 2M
- POWER SUPPLY 5V with Connector MICRO USB (USB POWER ADAPTERCT40U 2CH and CABLE USB/MICRO 1 M)

CASE RASPBERRY-MOD B+ (A-CV-D-00018)

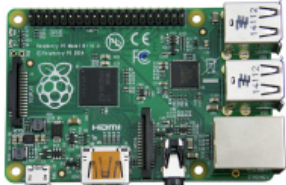


- It is CASE for Board RASPBERRY-MOD B+-512MB; it is a transparent acrylic pad with 3 mm. thickness and it can be assembled to be box easily.
- Provide HEATSINK to ventilate heat with 2 glues to stick with IC (convection)



OPTION

RASPBERRY-MOD B+-512M (C-YA-A-00191)



USB POWER ADAPTER CT40U 2CH (A-AP-A-00097)



CABLE USB/MICRO 1 M (A-CB-A-00045)



สาย LAN DIRECT 2 M (P-CB-A-00028)



CABLE HDMI/HDMI 2.0M (A-CB-A-00046)



SD CARD 8 GB-MOD B+-512M (A-CM-A-00045)
It is 8G SD MICRO that already programmed and installed the Operating System; it is compatible with Raspberry Pi MOD B+ only.



*** This Board is imported from foreign country, the circuit of the device is SMD that cannot be fixed or repaired. ETT checks all parts and circuits of board in order to make sure that it can work well before selling.
*** There is no any warranty for this product. If customer cannot accept the CONDITION, please DON'T UNSEAL and return the product to ETT in order to get money back.***

CABLE 40P TO 26P (P-CB-A-00032)



It is PAIR CABLE 40 PIN to 26PIN; it is compatible with MOD B+ that is Connector 40PIN. It can be connected with boards that are connected with the old model of 26PIN RASPBERRY. For example, if it requires connecting the new model MOD B+ with Board ET-RPI START KIT, it can use this CABLE.

