



RASPBERRY PI3-MOD B + SD8G

(C-YA-A-00214) ***

This is the latest **RASPBERRY PI3-MOD B** that has already been added more Circuit WIFI and Circuit BLUETOOTH; it increases more speed of CPU than PI2. Moreover, it is provided with SD CARD 8G that has already been installed the Operation System: OS.

• This RASPBERRY PI3 is 32Bit minicomputer with 1GB Memory that can be connected with Computer monitor or TV monitor (HDMI) and KEY BOARD and MOUSE. Actually, it can run as a computer, it can enter WEB BROWSER and play file multimedia as well. It can choose the operating systems via SD CARD such as LINUX and WINDOWS 10.

• This RASPBERRY PI3 has the same board size, connectors as the RASPBERRY PI2 model; so, it can use the same accessories and box as the previous model. Except POWER SUPPLY, it requires 5V at least 2.4A.



- CPU uses BROADCOM BCM2837 64 BIT QUAD CORE 1.2GHz that is more speed than the old PI model approx. 50-60%, RAM 1 GB
- Use BCM43143 WIFI and BLUETOOTH LOW ENEREGY (BLE) ON BOARD
- 400 MHz VIDEO CORD IV GPU
- OPERATING SYSTEM BOOTS FROM MICRO SD CARD
- DIMENSION 85 x 56 x 17 mm.
- POWER SUPPLY from Connector MICRO USB SOCKET 5V/2.4A

CONNECTORS

GPIO CONNECTOR : 40PIN HEADER 2.54mm.MALE (GPIO, UART, I2C and etc.)

USB : 4 PORT USB 2.0 for KEYBOARD, MOUSE

ETHERNET : 10/100 BASE RJ45

VIDEO OUTPUT : HDMI and COMPOSITE VIDEO(PAL/NTSC) 3.5mm. 4-POLE JACK

AUDIO OUTPUT : HDMI and 3.5 mm. 4-POLE JACK

CAMERA CONNECTOR : 15 PIN MIPI CAMERA SERIAL INTERFACE (CSI-2)

MEMORY CARD SLOT : MICRO SD

If connecting monitor via Connector HDMI, it requires

- Monitor with Connector HDMI
- Cable HDMI (CABLE HDMI/HDMI 2.0)
- KEY BOARD USB
- MOUSE USB
- POWER SUPPLY 5V with CONNECTOR MICRO USB (ET-SWITCHING ADAPTER 5V 3A TYPE U)

If connecting monitor via RJ45 LAN, it requires

- COMPUTER
- ROUTER (DHCP SERVER)
- Cable LAN DIRECT 2M
- POWER SUPPLY 5V with CONNECTOR MICRO USB (ET-SWITCHING ADAPTER 5V 3A TYPE U)

RASPBERRY PI3-MOD B

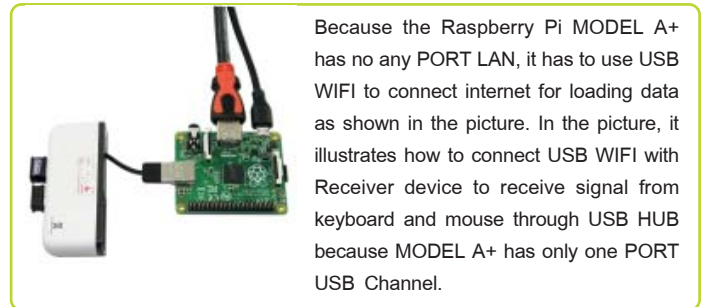
(C-YA-A-00213) ***



RASPBERRY-MOD A+ -256M + SD 8G

(C-YA-A-00199) ***

This Raspberry Pi MODEL A+ 256MB with 8GB SD Card Memory is made in UK; it is 32IT minicomputer with 256 MB memory and user can install the operating systems such as LINUX, FEDORA, ARCH LINUX, RISC OS.



Because the Raspberry Pi MODEL A+ has no any PORT LAN, it has to use USB WIFI to connect internet for loading data as shown in the picture. In the picture, it illustrates how to connect USB WIFI with Receiver device to receive signal from keyboard and mouse through USB HUB because MODEL A+ has only one PORT USB Channel.

- Be cheaper and smaller than MODEL B+; Board size is 65.0 x 56.0 mm.
- Use Chip SoC BROADCOM BCM2835 that includes CPU, GPU and SD RAM in the same DIP TYPE.
- Use CPU 700 MHz ARM 11 ARM1176JZF-S CORE
- Use GPU BROADCOM VIDEO CORE IV, OPEN GL ES 2.0 OPEN VG 1080 P30 H 264
- Use MEMORY 256 MB SD RAM
- Use OPERATING SYSTEM BOOTS FROM MICRO SD CARD
- Use POWER SUPPLY FROM MICRO USB SOCKET 5V (1-2A)

CONNECTORS

GPIO CONNECTOR : 40PIN like MODEL B+ (GPIO cannot receive 5V, it is only compatible with 3.3V).

USB : 1 PORT USB 2.0

VIDEO OUTPUT : HDMI CONNECTOR and JACK 3.5 mm.

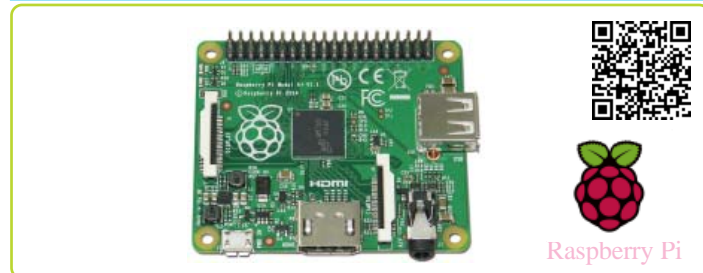
AUDIO OUT : JACK 3.5mm. and HDMI CONNECTOR

CAMERA CONNECTOR : 15-PIN MIPI CAMERA

MEMORY CARD SLOT : MICRO SD

RASPBERRY-MOD A+ -256M

(C-YA-A-00198) ***



*** 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.***



ET-RASPBERRY HAT EXP BOX (P-ET-A-00557)

ET-RASPBERRY MINI EXP BOX (P-ET-A-00558)

This training kit is used together with Textbook “เรียนรู้ เข้าใจ ใช้งาน Raspberry PI3 (Learning, Understand & Use Raspberry PI3)” (Thai only). It is divided into 2 sets; firstly, **ET-RASPBERRY HAT EXP BOX** is used with Board RASPBERRY to connect and test in **Chapter 1-11 (it is recommended user to buy this box set first and then buy Board ET-RASPBERRY MINI EXP BOX later)**. Secondly, ET-RASPBERRY MINI EXP BOX is used to connect & test in Chapter 12-16.

Both sets do not include Board CPU RASPBERRY PI3; so, customer needs to buy it (OPTION). Or, if customer has already had Board RASPBERRY PI3 and wire cables, POWER SUPPLY, it only buys ET-RASPBERRY HAT or MINI.



Training Kit **ET-RASPBERRY HAT EXP BOX** includes in the high quality box, it is more convenient to use and protect all devices well. The training kit consists of...

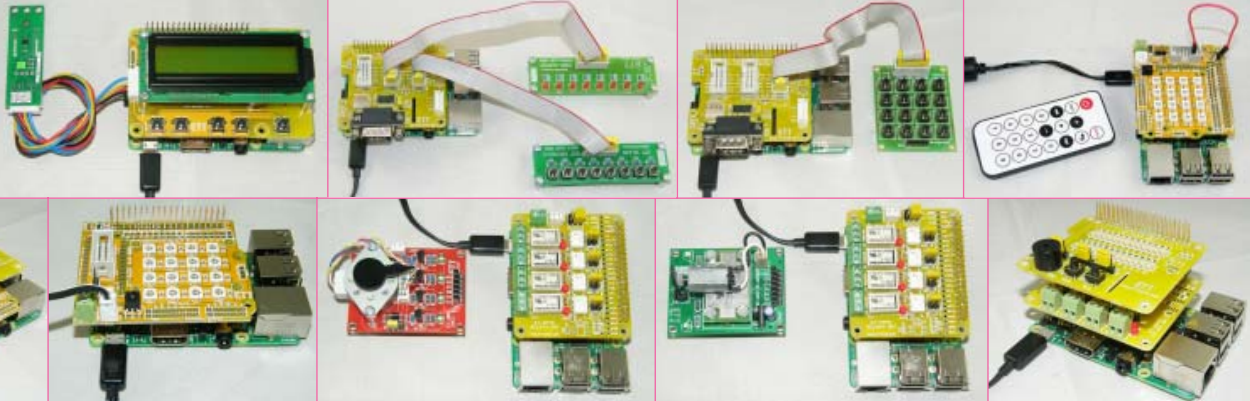
- SD CARD 16GB-EXP3 provided OS and LAB for testing
- ET-LCD SW HAT
- ET-iLED 4x4 RGB (HEADER 40PIN)
- ET-SWITCHING 5V 2A TYPE B
- ET-IR REMOTE KEY
- ET-TEST HAT
- ET-CONV 10/RS232 HAT
- ET-TEST HAT
- ET-MINI DC MOTOR
- ET-MINI SMCC V2
- ET-MINI KEY 4X4
- ET-TEST 10P/OUT
- ET-TEST 10P/INP
- Wire Cables
- Pair Cable 10PIN
- DVD provided Example Programs and Programs of RASPBERRY PI3
- Textbook “เรียนรู้ เข้าใจ ใช้งาน Raspberry PI3 (Learning, Understand & Use Raspberry PI3)” (Thai only)
- High quality plastic box to keep and protect Training Kit “ ET-BOX1



• Board **RASPBERRY PI3**, **POWER SUPPLY**, **wire cables**, **LAN Cable** are not included in the Box Set.



Example illustrates how to connect **ET-RASPBERRY HAT EXP BOX** with Board **Raspberry PI3**.



ET-RASPBERRY HAT EXP BOX can be used with Textbook “เรียนรู้ เข้าใจ ใช้งาน Raspberry PI3 (Learning, Understand & Use Raspberry PI3)” (Thai only) for testing in **Chapter 1-11**. For **Chapter 12-16**, it must be used with **RASPBERRY MINI EXP BOX**.

This Training kit can be used to test, use, and learn

- how to develop RASPBERRY
- how to test LED, SW
- how to test OUTPUT RELAY
- how to test KEY 4X4
- how to test RTC
- how to create SD CARD
- how to test LED RGB
- how to test OPTO DC IN
- how to test LCD
- how to test SENSOR HUMIDITY
- how to write Program by Python
- how to test receiving IR REMOTE
- how to test RS232 PORT
- how to test BUZZER

*It is recommended user to have the **Training Kit RASPBERRY HAT EXP BOX** first and then use or buy **ET-RASPBERRY MINI EXP BOX** later.

Training Kit **RASPBERRY MINI EXP BOX** is contained in high quality plastic box, it is divided in small section that is more convenient to keep and protect all devices.



The box set consists of...

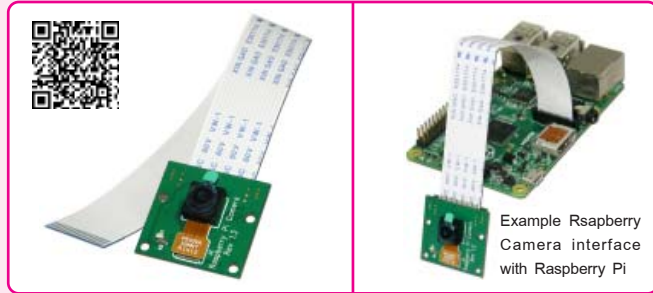
- The box set consists of...
- ET-MINI MCP3424 ADC
 - LDR, THERMISTER, R, LED
 - test A TO D, measure pressure, LDR, THERMISTER
 - test INPUT, OUTPUT, I/O via PORT I²C
 - ET-MINI MCP23017
 - PROJECT BOARD 400 HOLES
- It can be used with Textbook “เรียนรู้ เข้าใจ ใช้งาน Raspberry PI3 (Learning, Understand & Use Raspberry PI3)” (Thai only) for testing in Chapter 12-16; it can

Example illustrates how to connect **ET-RASPBERRY MINI EXP BOX** with Board **Raspberry PI3**.





● RASPBERRY CAMERA (C-YA-A-00200) ***



Example Raspberry Camera interface with Raspberry Pi

This MODULE CAMERA is specifically designed to use with Board Raspberry PI, it is compatible with MODEL A+, MODEL B, MODEL B+, Raspberry PI2 MOD B; moreover, it can be connected with SOCKET CAMERA as CSI BUS type.

- Board Size: 25 x 20 x 9 mm.
- 5MP Resolution (2529 x 1944 PIXELS)
- Use Sensor OMNIVISION 5647, fixed focus
- Video Camera Resolution 1080P30, 720P60 and 640x480 P 60/P90

● ET-CONV 40D (P-ET-A-00198)



● 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+, MOD A+, Raspberry PI2 MOD B.

● สาย LAN DIRECT 2 M (P-CB-A-00028)



● CABLE HDMI/HDMI 1.8M (A-CB-A-00046)



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



● CASE for RASPBERRY PI2 MOD B, 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)

● PI-CONV 40T (A-CO-A-00292)

Board PI-CONV 40T is Board CONVERTER, it converts Connector 40PIN I/O on Board RASPBERRY PI such as PI MODEL A+, PI MODEL B+, PI2 MODEL B to Connector 40PIN HEADER MALE; moreover, it types name of I/O PIN on PCB to connect with PROJECT BOARD conveniently (when it is connected from Board RASPBERRY PI 40 PIN, it requires PAIR CABLE 40 PIN (OPTION: it is not included in the package)).



It illustrates the connection between PI-CONV 40T and Board RASPBERRY PI and PROJECT BOARD.

TEXTBOOK “เรียนรู้ เข้าใจ ใช้งาน Raspberry PI3 (LEARNING UNDERSTAND & USE Raspberry Pi3)” (THAI ONLY)



It describes how to write program and use Board RASPBERRY PI3, including GPIO, I2C, SPI, ADC, LCD, LED RGB, IR REMOTE, 4X4 KEY BOARD, DC INPUT, RELAY, WEB CAM.

It suggests Board RASPBERRY PI3, PYTHON Language for writing program on Board RASPBERRY, PROTOCOL, INTERNET, OPEN CV, SDL2. Moreover, it suggests how to connect this board with Board HAT and Board ET-MINI I/O from ETT. This textbook is published by fine printing paper, 352 Pages.

SD CARD 16GB-EXP3 (A-CM-A-00049)



This is MICRO SD CARD 16GB CLASS10 that is provided with OS, it is ready to be used with BOARD RASPBERRY PI3. Example Programs, Library for testing program are provided.

** This SD CARD is already included in the box set of ET-RASPBERRY HAT EXP BOX. **

ET-SWITCHING ADAPTER 5V 3A TYPE U (A-AP-A-00107)

It is SWITCHING DC POWER SUPPLY under TISI and UL Standards.



INPUT: AC INPUT 100-240VAC 3PIN MALE

(If customer has not any Cable AC 3PIN, it requires buying Cable POWER 3P AC 1.8M)

OUTPUT: 5V 3A HEADER USB MICRO TYPE B MALE

● สาย LAN DIRECT 2 M (P-CB-A-00028)



● CABLE HDMI/HDMI 1.8M (A-CB-A-00046)



ET-USB/RS232 MINI R1 (P-ET-A-00502)



Board converts signal from RS232 PORT to mini USB Port, it is inexpensive and it can be connected to Connector USB 2.0 of computer PC directly.

- Use IC No.FT231XS from FTDI , don't worry about newer Driver version of OS in the future
- Connector RS232 DB9 Pin MALE and Connector USB TYPE A
- Run on OS WINDOWS 98/ SE/ ME/ 2000/ XP/ 7/ 8/ LINUX/ MAC OS

WEB CAM USB (C-YA-A-00230)



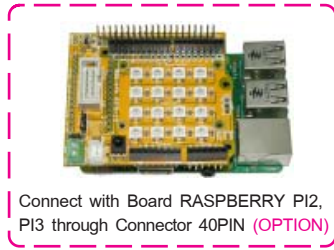
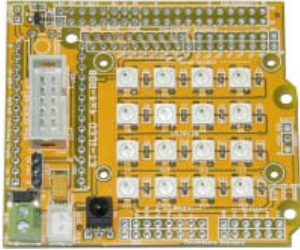
This WEB CAM USB connects with Connector USB of Board RASPBERRY. It is used to test in the Chapter 15. It is more convenient to connect and use.

- IMAGE SENSOR CMOS
- MAXIMUM DYNAMIC PIXEL: 5.0M pixels
- FRAME RATE: 30 fps
- COMPATIBLE WITH USB2.0/1.1



ET-iLED 4x4-RGB

ET-iLED 4x4-RGB is RGB LED Display Board; it is inexpensive board that is designed to connect with various types of Board Controller such as Board RASPBERRY PI, Arduino Boards, and ETT Boards. This Board 4x4-RGB consists of 16-LED RGB No.WS2812B that are connected in the format of 4x4 DOT, it can display high resolution of RGB up to 24 BIT COLOR or 16 million colors and user can setup the contrast of this LED up to 256 levels.



Connect with Board RASPBERRY PI2, PI3 through Connector 40PIN (OPTION)

SPECIFICATIONS of ET-iLED 4x4-RGB

- Separately use 5VDC Power Supply (1 AMP Current)
- Only use single Cable CONTROL or 1 BIT to control all 16-LED in order to control the Circuit to display result as SERIAL NZR
- INPUT connects with Signal TTL 5V with Circuit BUFFER 3.3V TO 5V to connect with Board RASPBERRY
- Circuit IR receives data from IR REMOTE KEY; it uses IC No.TSOP4838, so it can write program to command the operation of LED RGB from IR REMOTE KEY.
- Board **ET-iLED 4x4-RGB** has various types of Connector, so it can be connected with various boards. It can be connected through...
 1. Connector 10PIN ETT is connected through Pair Cable 10PIN (*OPTION*Pair Cable 10PIN CON2 10CM (P-CB-A-00033)). It can connect with ETT Boards such as ET-BASE AVR EASY32U4, ET-BASE AVR EASY88/168/328.
 2. Connector 2x20 PIN is connected with Connector 2x20 PIN of Board RASPBERRY PI2, PI3 by soldering Connector 2x20PIN ((*OPTION* 2 x 20 PIN STACKABLE 25.5 mm. (A-CO-A-00289))
 3. Connector Arduino STANDARD solders additional Connector 6PIN, 10PIN and 8PIN x 2 (*OPTION* 1 x 6 PIN STACKABLE 21mm (A-CO-A-00299), 1 x 8 PIN STACKABLE 21mm (A-CO-A-00300), 1 x 10 PIN STACKABLE 21mm (A-CO-A-00301))
 4. Connector 14x2 PIN HEADER is connected with Board ET-EASY 168 or 328 STAMP by soldering additional Connector 14x2 PIN HEADER (*OPTION* It uses 2pcs of CON 1x14 FEMALE PCB (A-CO-A-00302))
 5. Connector 3PIN HEADER is connected with CONTROL Boards through Connector 3PIN DATA, +5V, GND
 - Can connect Board ET-iLED 4x4-RGB together up to 64 (NOTE: It requires high speed CPU such as AVR, ARM, and etc. For CPU MCS51 and general PIC, it cannot be used with this Board ET-iLED 4x4-RGB)
 - Use POWER SUPPLY +5VDC and at least 1A Current that is connected through 2PIN TERMINAL or 2PIN HEADER 2.50mm. (*OPTION* It can be used with ET-SWITCHING ADAPTER 5V 2A TYPE B (A-AP-A-00095))
 - PCB size: 5.96 x 6.85cm.
 - Set of Board **ET-iLED 4x4-RGB** includes...
 1. Board ET-iLED 4x4-RGB
 2. CD-ROM Manual and Example Program

ET-IR REMOTE KEY (P-ET-A-00546)



This is mini KEY IR REMOTE with Frequency 38 KHz; there are 20 Keys with BATTERY 3V.

- ET-IR REMOTE KEY size: 8.65 x 4.10 x 0.75 cm.



ET-LCD SW HAT

ET-LCD SW HAT is an I/O Board of ETT that is designed to connect with BOARD RASPBERRY PI that has Connector I/O 40PIN. Board includes LCD Display 16x2, SW, BUZZER, RTC, and Connector I2C I/O. User can connect this Board ET-LCD SW HAT with Board RASPBERRY PI through Connector 40PIN directly. Next, user can practice writing program to control devices or can create new project easily. This complete set provides example programs in CD-ROM that illustrates how to use all devices, it is written by PYTHON Language.

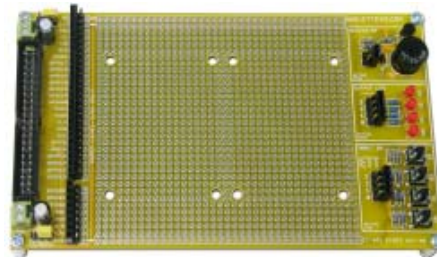


Figure illustrates the connection between Board ET-LCD SW HAT and Board RASPBERRY PI.

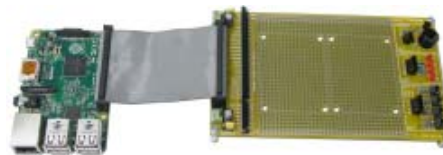
SPECIFICATIONS of BOARD ET-LCD SW HAT

- Be compatible with Board RASPBERRY PI MODEL B+, PI2 MOEL B, PI3 that has Connector 40PIN
- LCD 16x2 BACKLIGHT is connected as 4BIT LCD with VR to adjust contrast
- 5 of PUSH BUTTON SW
- REAL TIME CLOCK RTC No.DS3231 with BATTERY 3V BACKUP
- BUZZER MINI generates sound that is activated at LOGIC 1
- Connector I2C BOX 5PIN can be connected with devices; for example, it connects with SENSOR to measure HUMIDITY and TEMPERATURE "ET-SENSOR SHT31"; it provides example program for using with this SHT31 (*OPTION* ET-SENSOR SHT31 (P-ET-A-00539)). Moreover, it provides Circuit Clamper to adjust voltage that can be used with Voltage 5V.
- Board uses POWER SUPPLY 5V and 3.3V that is connected from Board RASPBERRY PI.
- PCB Size: 8.49 x 5.6 cm
- Complete set of Board **ET-LCD SW HAT** includes...
 1. Board ET-LCD SW HAT
 2. CD-ROM Manual and Example Program

ET-RPI START KIT-40(P-ET-A-00533)



Board **ET-RPI START KIT-40** is specifically designed for use in Board RASPBERRY PI, it is more convenient to connect and test circuits.



It illustrates the connection between ET-RPI START KIT-40 and Board RASPBERRY PI.

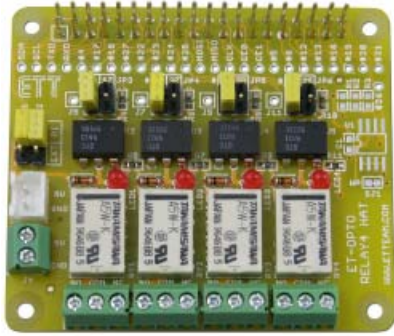
SPECIFICATIONS of Board ET-RPI START KIT-40

- Be specifically designed for use in Board RASPBERRY PI that has Connector I/O 40 PIN such as PI MODEL A+, PI MODEL B+, PI2 MODEL B
- Connector 40 PIN of Board RASPBERRY PI is converted to HEADER MALE and HEADER FEMALE as 25 PIN and 8 PIN and it types name of I/O PIN that is more convenient to connect.
- Provide simple I/O for connection as follows;
 - 4-Push Button Switch with Connector
 - 4-LED 3mm. with Connector
 - 1 MINI BUZZER with Connector
- Provide Connector POWER SUPPLY 5V and 3.3V from external board
- PCB Size: 15.3 x 9 cm.
- Package of Board **ET-RPI START KIT-40** includes...
 1. Board ET-RPI START KIT-40
 2. PAIR CABLE 40PIN CON2 with 10cm in length
 3. Document



ET-OPTO RELAY4 HAT

(P-ET-A-00531)



- It illustrates how to connect ET-OPTO RELAY4 HAT with Board Raspberry Pi.



Board ET-OPTO RELAY4 HAT is specifically designed for use with Connector 40PIN of Board RASPBERRY PI; it is 4-RELAY Board.

SPECIFICATIONS of Board ET-OPTO RELAY4 HAT

- Be compatible with Board RASPBERRY PI MODEL A, MODEL B+, PI2 MODEL B
- Have connectible area to receive ID EEPROM (OPTION)
- Drive Circuit RELAY as OPTO-ISOLATION(4N33) to control and command RELAY
- Use CONTACT RELAY 5VDC 0.5A/125VAC or 1A/30VDC; and use Connector as SCREW TERMINAL BLOCK 3 PIN (NO,COM,NC)
- JUMPER chooses I/O to control all 4 RELAYS; can connect 2-RELAY Boards (8 RELAY) per 1 System
- Connector Power Supply of RELAY is provided for connecting from external board; and set JUMPER to choose Power Supply for RELAY either from internal board or external board. The Connector type is SCREW TERMINAL BLOCK 2PIN and WAFER 2.5 mm. 2PIN (it is compatible with ET-SWITCHING ADAPTER 5V 2A TYPE B (A-AP-A-00095))
- Use CONNECTOR 2 x 20 PIN STACKABLE 25.5 mm. that is specifically designed; so, it can pile boards up.
- PCB size: 6.5 x 5.6 mm. Set of chromium pole is OPTION, please choose proper size and type of pole according to board connection.
- Board ET-OPTO RELAY4 HAT includes Board ET-OPTO RELAY4 HAT, Document and Example Programs.

PI HEATSINK SET (A-BX-I-00056)



- รูปประกอบการติดตั้ง HEAT SINK

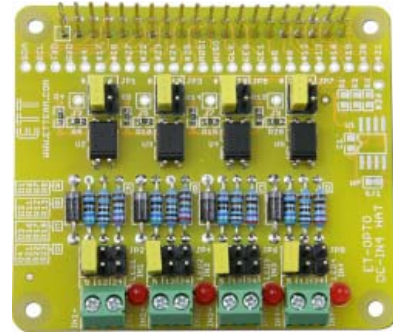


There are 3 HEAT SINKs in the same package with glue of its own that can be adhered to IC directly. It adheres to IC on Board RASPBERRY PI-B-512M, PI2 MODEL B, PI MODEL A, PI MODEL B+.

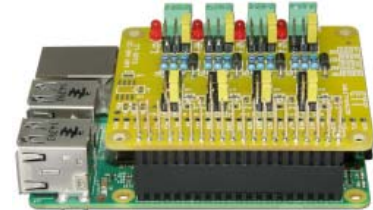
- In case of PI-B-512M, it is adhered to 3 positions on CHIP; CPU, LAN and POWER SUPPLY.
- In case of other RASPBERRY versions, it is adhered to 2 positions on CHIP; CPU and LAN.

ET-OPTO DC-IN4 HAT

(P-ET-A-00532)



- It illustrates how to connect ET-OPTO DC-IN4 HAT with Board Raspberry Pi.



ET-OPTO DC-IN4 HAT is specifically designed for use with Connector 40PIN of Board RASPBERRY PI; this INPUT Board is 4-CH OPTO ISOLATION.

SPECIFICATIONS of Board ET-OPTO DC-IN4 HAT

- Be compatible with Board RASPBERRY PI MODEL A, MODEL B+, PI2 MODEL B
- Have connectible area to receive ID EEPROM (OPTION)
- Be used as INPUT Board to receive Signal DC; separate operation by PC817 OPTO ISOLATION; separate Power System into 4 channels.
- Set JUMPER to properly choose 3 alternative levels of INPUT; all 4-Ch is independently separated; 5VDC, 12VDC, 24VDC
- Set JUMPER to choose I/O to connect and receive all 4-CH INPUT; so, it can connect 2 INPUT Boards (8 INPUT) per 1 System
- Connector 4-CH INPUT is SCREW TERMINAL BLOCK 2 PIN
- Use CONNECTOR 2 x 20 PIN STACKABLE 25.5 mm. that is specifically long leg, so it can pile boards up.
- PCB size: 6.5 x 5.6 mm. Set of chromium pole is OPTION, please choose proper size and type according to board connection.
- Board ET-OPTO DC-IN4 HAT includes Board ET-OPTO DC-IN4 HAT, Document and Example Programs

RW20MM-40SET (A-CB-A-00051)

RW20FF-40SET (A-CB-A-00052)

RW20MF-40SET (A-CB-A-00053)

These flexible CABLEs are connected with boards or PROJECT BOARDs; it is flexible and 20cm in length. There are 3 sizes that can be properly chosen, depending on type of connection. There are 40 wires per a set.



- RW20MM-40SET : Both terminals are MALE with 20cm in length to connect with FEMALE PIN HREADER or PROJECT BOARD.



- RW20FF-40SET : Both terminals are FEMALE with 20cm in length to connect with MALE PIN HREADER.



- RW20MF-40SET : One terminal is MALE and other one is FEMALE, it is 20cm in length.



ET-CONV10/RS232 HAT (P-ET-A-00530)



- It illustrates how to connect **ET-CONV10/RS232 HAT** with Board **RASPBerry PI**.



Board **ET-CONV10/RS232 HAT** is specifically designed for use with 40PIN of Board **RASPBerry PI**. There are 2 types of application as follows;

1. It is used as **RS232 PORT**.
2. It changes Connector 40PIN of **RASPBerry** to Connector 10PIN **ETT Standard**; so, it can be used with I/O Boards of **ETT** conveniently.

SPECIFICATIONS of Board **ET-CONV10/RS232 HAT**

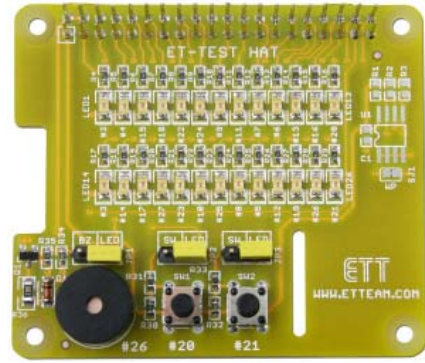
- Be compatible with Board **RASPBerry PI MODEL A+, MODEL B+, PI2 MODEL B**
- Have connectable area to receive ID EEPROM (**OPTION**)
- Have Circuit **LINE DRIVER** to convert level of Signal **LOGIC** from Board **RASPBerry PI** to **RS232**; has Connector **DB9 PIN MALE** and **4 PIN (ETT STANDARD)**.
- Have 3 of Connector **IDC 10PIN (24 BIT I/O)** arranged according to **ETT STANDARD**, it can be used with I/O Boards of **ETT** conveniently. **NOTE:** The level of Signal I/O must not be higher than **3.3V** (if it is used with **5V**, it requires following items;
 - **ET-10PIN CONV 3/5M (P-ET-A-00461)**, if it requires using all **PORT (8BIT)** as **INPUT** or **OUTPUT**.
 - **ET-MINI LOGIC LEVEL B1 (P-ET-A-00520)**, if it requires using **BIDIRECTIONAL** type from **3.3V** to **5V** or from **5V** to **3.3V**, all **8BIT** are independently separated.
- Have Connector **2 x 20 PIN STACKABLE 25.5mm**. that is specifically long leg; so, it can pile boards up.
- PCB size: **6.5 x 5.6 mm**.
- Have set of chromium pole (**OPTION**), please choose proper size and type according to the board connection
- Board **ET-CONV10/RS232 HAT** includes Board **ET-CONV10/RS232 HAT**, Document and Example Programs

ET-10PIN CONV 3/5M (P-ET-A-00461)

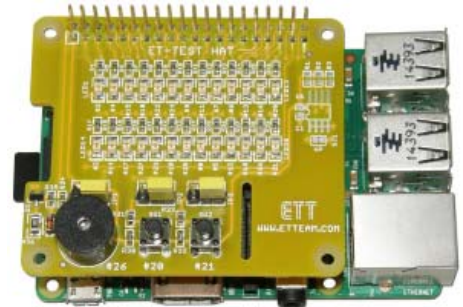


This mini board with 2 of Connector 10PIN **ET BUS I/O** is designed for use with **PAIR Cable 10PIN** conveniently. It is connected with Signal **LOGIC** between **5V** devices with **3.3V** devices by using IC **74LCX245** to be intermediate. It can setup **JUMPER** for all **8BIT**. It can send data from **5V** side to **3.3V** side or from **3.3V** side to **5V** side by Circuit **REGULATOR 3.3V**. It is suitable for connecting Board **MCU** that is **3.3V I/O** with **5V I/O Board**.

ET-TEST HAT (P-ET-A-00529)



- It illustrates how to connect **ET-TEST HAT** with Board **RASPBerry PI**.



Board **ET-TEST HAT** is specifically designed to test I/O **PORT** of Board **RASPBerry PI**; it is used to test the operation or write sample program to show on **LED Display** or **BUZZER** on this board.

SPECIFICATIONS of Board **ET-TEST HAT**

- Be compatible with Board **RASPBerry** that has I/O **PIN** as **40 PIN** such as **RASPBerry PI MOD A+, MODEL B+, PI2 MODEL B**
- Has connectable area to adjust ID EEPROM (**OPTION**)
- Has **26** of **LED SMD** to test I/O **PORT** of **RASPBerry PI**
- Has **2** of **SW** with **JUMPER** to choose the preferable operation mode
- Has **1** of **BUZZER** with **JUMPER** to test the operation
- Has Connector **2 x 20 PIN STACKABLE 25.5 mm**.
- PCB size: **6.5 x 5.6 mm**.
- Have set of chromium pole(**OPTION**), please choose proper size and type according to the board connection
- **ET-TEST HAT** includes Board **ET-TEST HAT**, Document and Example Programs

ET-MINI LOGIC LEVEL B1 (P-ET-A-00520)



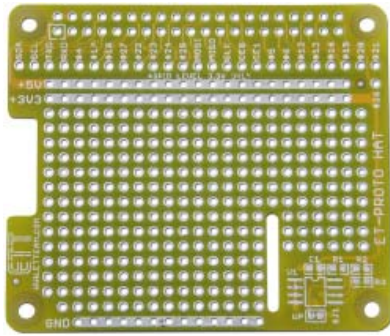
This **ET-MINI LOGIC LEVEL B1** is **LOGIC LEVEL** as **BIDIRECTIONAL** type that uses **MOSFET** to operate. This board connects Signal **Logic** between **5V** devices and **3.3V** devices by **MOSFET**. It can convert Signal **LOGIC** as bidirectional, so it is more convenient to use.

- Send value from Signal **Logic 5V** to **3.3V** or from **Logic 3.3V** to **5V**
- Have **8-CH** for connection
- Be compatible with general Signal **Logic I/O** such **SPI** (not higher than **8 MHz**), **UART** (not higher than **115200 bps**), **I2C** (not higher than **400 KHz**)
- Have IC **REGULATOR 3.3V/800mA** on board to supply power from **5V** to **3.3V** device
- Connector type is **PIN HEADER 1 x 10 MALE** and **PIN HEADER 1 X 10 FE-MALE, 2.54 mm. PITCH** both sides
- PCB size: **4.4 x 5.6 mm**.
- Package includes Board and document

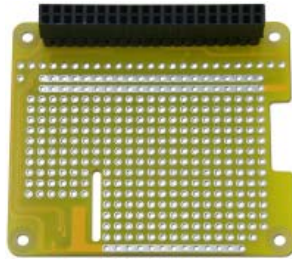




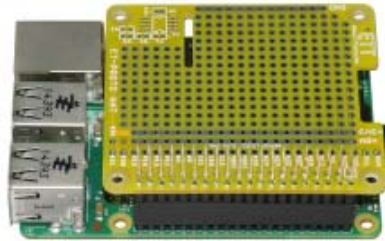
ET-PROTO HAT (P-ET-A-00564)



• It illustrates how to connect ET-PROTO HAT with Connector 2 x 20 PIN STACKABLE 25.5 mm. (This 2 x 20 PIN is not included in the PCB, it is OPTION).



• It illustrates how to connect ET-PROTO HAT, it solders 2 x 20 STACKABLE 25.5 mm. onto Board RASPBERRY PI.



This **ET-PROTO HAT** or multi-purposed PCB as HAT (HARDWARE ATTACHED ON TOP) is specifically designed for use with Board RASPBERRY PI that has Connector 40 PIN such as PASPBERRY PI MODEL A+, RASPBERRY PI MODEL B+, RASPBERRY PI2 MODEL B; it is suitable to make prototype boards by connecting with RASPBERRY PI via Connector 40P conveniently.

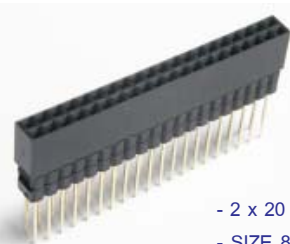
SPECIFICATIONS of Board ET-PROTO HAT

- PCB size: 6.5 x 5.6 cm.; the PCB type is PTH.
- Have connecting point of PCB 40 PIN to connect with I/O PIN of Raspberry Pi
- Have connectible area for ID EEPROM (OPTION)
- Have connecting point of I/O for +5V, +3.3V, GND
- Have Connector PIN STACKABLE 2 x 20 (2 x 20 PIN STACKABLE 25.5 mm. (OPTION)

2 x 20 PIN STACKABLE 25.5 mm. (A-CO-A-00289)



12.00 mm.
5.0 mm.
8.5 mm.



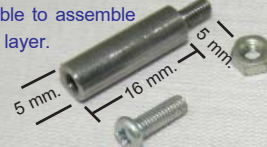
It is Connector 40 PIN; one side is FEMALE and another side is MALE. It is specifically long leg that is high enough and it does not touch any device under the PCB. If it requires piling boards up, this ET-PROTO HAT is suitable.

- 2 x 20 PIN, 2.54 mm. PITCH, PIN GOLD PLATED
- SIZE 8.5/5.0/12.00 mm.

CHROMIUM POLE DIA M2.6 x 16 (P-DI-A-00005)

CHROMIUM POLE DIA M2.6 x 18 (P-DI-A-00006)

• This chromium pole DIA M2.6 x 16 is suitable to assemble at the first layer.



- One package consists of 4 sets of chromium pole, nuts and bolts both MALE and FEMALE.



• The chromium pole DIA M 2.6 x 18 is suitable to assemble the second layer and higher.

- One package consists of 4 sets of chromium pole, nuts and bolts both MALE and FEMALE.

• One package of this chromium pole DIA M2.6 x 16 consists of 4 sets of chromium pole, nuts and bolts both MALE and FEMALE. It holds and fastens HAT Boards of ETT and Board RASPBERRY PI together. This set is suitable to hold and fasten the first layer between board and RASPBERRY PI (when using 2 x 20 PIN STACKABLE 25.5 mm.).

• One package of this chromium pole DIA M2.6 x 18 consists of 4 sets of chromium pole, nuts and bolts both MALE and FEMALE. It holds and fastens between HAT Boards of ETT and Board RASPBERRY PI. This set is suitable to hold and fasten the second layer and higher board and RASPBERRY PI (when using 2 x 20 PIN STACKABLE 25.5 mm.).

• It illustrates how to assemble the chromium pole between Board RASPBERRY PI and various types of Board ET-HAT.

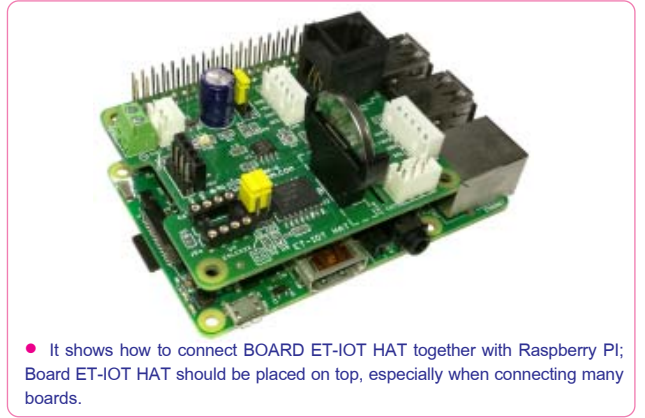




ET-IOT HAT (P-ET-A-00600)



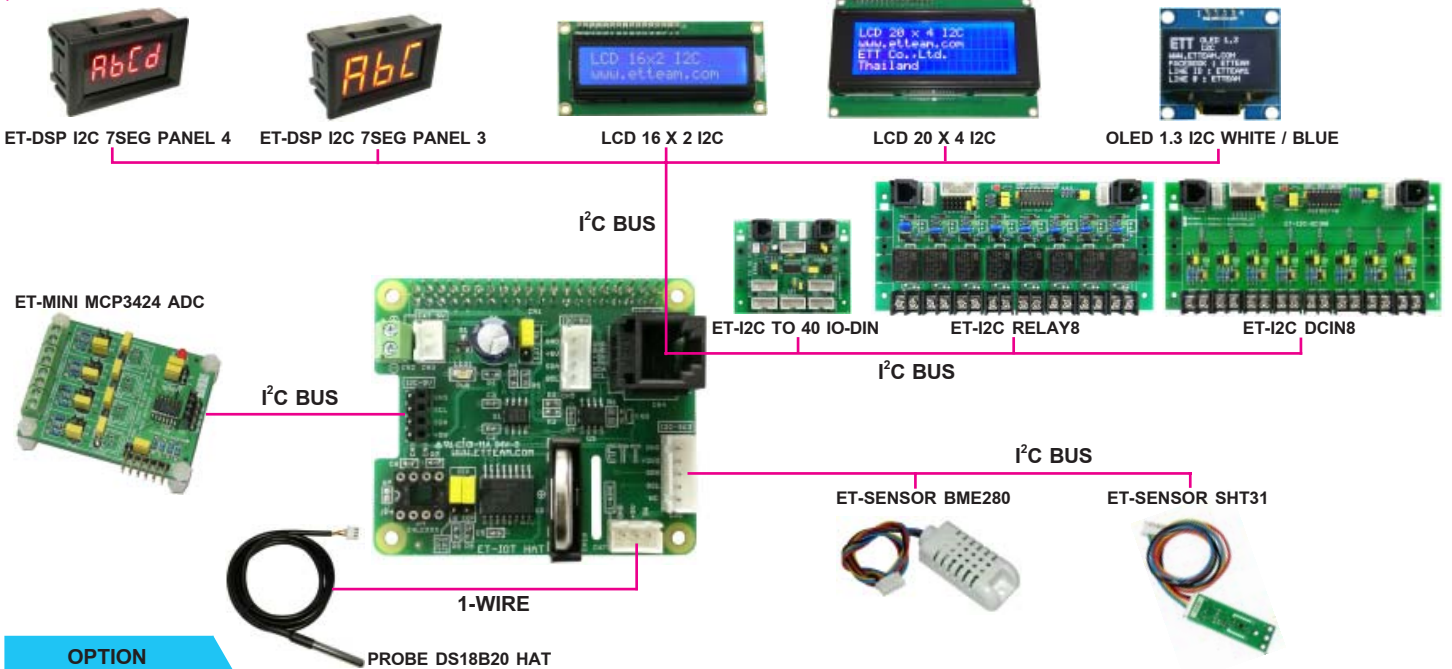
Board **ET-IOT HAT** is particularly designed to connect to Board Raspberry Pi via Connector 40 PIN; Board is expanded to connect to I2C BUS System in order to expand system of INPUT, OUTPUT, SENSORS, 1-WIRE System connection, and additional RTC connection.



It shows how to connect BOARD ET-IOT HAT together with Raspberry Pi; Board ET-IOT HAT should be placed on top, especially when connecting many boards.

SPECIFICATIONS OF BOARD ET-IOT HAT

- Can be connected together with Board Raspberry Pi as 40PIN BUS type such as Raspberry Pi A, B+, PI2, PI3, PI3+
- Have PORT as I2C BUS. IC No.PCA9517 is used as I2C BUS REPEATER to change signal level from 3.3V of Raspberry Pi to BUS I2C 5V; so, it can communicate to I2C devices longer
- Have 1-WIRE PORT. IC DS2482-100 changes I2C communication to 1-WIRE communication such as connecting to 1-Wire Temperature Measurement Device No.DS1820.
- Have RTC No.DS3231 provided with BATTERY 3V BACKUP on board; it is real time for Board Raspberry Pi
- Have 8PIN SOCKET for connecting to EEPROM in the series of 24XX (OPTION); it is used as ID of Board or general task
- Have various types of CONNECTOR I2C; CONNECTOR FEMALE RJ 6PIN (5V), CONNECTOR WAFER 4PIN 2.50 mm. (5V) and CONNECTOR WAFER 5PIN 2.50 mm. (3.3V). It can be connected to ETT I/O Boards such as LCD 16x2 I2C, LCD 20x4 I2C, OLED 1.3 I2C, ET-DSP I2C 7SEGMENT, ET-I2C RELAY8, ET-I2C DCIN8, ET-I2C TO 40 IO-DIN; or it can be used with various I2C SENSORS such as ET-SENSOR SHT31, ET-SENSOR BME280 and so on.
- CONNECTOR 1-WIRE in the format of WAFER 3PIN 2.50 mm. (5V) to connect to 1-WIRE devices such as Temperature Measurement Device "PROBE DS18B20", HAT
- External CONNECTOR POWER SUPPLY 5VDC from Board Raspberry Pi; it can be WAFER 2PIN 2.50 mm. or SCREW TERMINAL BLOCK 2PIN as required
- CONNECTOR 4PIN HEADER 2.54 mm. MALE and FEMALE of PORT I2C is directly connected to Boards such as ET-MINI MCP3424 ADC (14 BIT 4CH) via CABLE HOUSING 4P-4P (OPTION)
- PCB size: 6.5 X 5.6 cm
- Aluminum Pole is OPTION, please choose the right model that fits into user's board connection
- Package of BOARD ET-IOT HAT includes...BOARD ET-IOT HAT, Document, and Example Programs, please DOWNLOAD from following link: <http://www.etteam.com/productPI/ET-IOT%20HAT/ET-IOT%20HAT.html>



OPTION

- **PROBE DS18B20 HAT (P-CB-A-00046)**

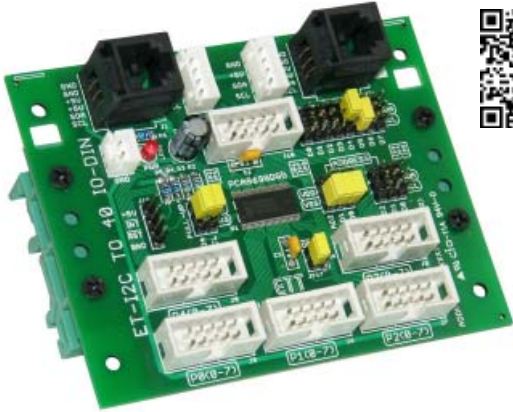
It is Temperature Measurement Device " DS18B20 " provided with 100 cm. long water-proof Cable.

- **HOUSING 4P-4P (P-CB-A-00045)**

It is 20 cm long HOUSING 4 PIN Cable and both Terminal is FEMALE (2.54mm.)

**ET-I2C TO 40 IO-DIN
(P-ET-A-00578)**

ET-I2C TO 40 IO-DIN is INPUT, OUTPUT Expansion Board for MCU via BUS I2C; it expands amount of I/O to 40 BIT like ET-ESP8266-RS485, ET-MEGA32U4-RS485, ET-IOT HAT or BOARD MCU of ETT via Connector I/O 10 PIN.

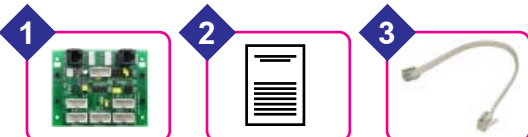


• It illustrates how to connect ET-I2C TO 40 IO-DIN to RIAL DIN 35 mm.

SPECIFICATIONS

- Use IC No.PCA9698DGG 56 PIN TSSOP TYPE from NXP
- POWER SUPPLY 2.3V-5.5V
- PIN I/O is used either to be INPUT or OUTPUT 40 BIT (5 PORT)
- I/O PORT OUTPUT CURRENT SOURCE/SINK 10 mA and 25 mA
- I2C Interface at the maximum Frequency 1 MHZ
- Choose 64-ADDRESS by setting JUMPER
- CONNECTOR I/O is used as 5 of ETT 10 PIN IDC
- Connector I2C for Board is WAFER 4 PIN (2.50 mm.) and 2 of FEMALE RJ11 6 PIN; it can be connected to board or it is connected together from board. Moreover, it provides Connector ETT 10 PIN IDC that is connected from ETT Boards for connecting and receiving Signal I2C to board, including JUMPER for choosing BIT for SCL, SDA
- Rail DIN 35 mm.
- PCB size: 9.6 x 7.6 cm.
- Package of **ET-I2C TO 40 IO-DIN** includes...

1. Board
2. CD-ROM Manual and Example Program
3. CABLE RJ-I2C-RJ



OPTION I²C BOARD

RJ-I2C-M (P-CB-A-00039)



One side is Connector RJ11 and another one is 6 of PIN HEADER MALE. This cable is 20 cm. long.

RJ-I2C-F (P-CB-A-00040)



One side is Connector RJ11 and another one is 6 of PIN HEADER FEMALE. This cable is 20 cm. long.

RJ-I2C-RJ (P-CB-A-00041)



Both sides are Connector RJ11; PIN 1 accords with PIN 1 of another side. This cable is 20 cm. long.

4P-I2C-4P (P-CB-A-00042)



Both sides are Connector FEMALE HOUSIN 4 PIN 2.50 mm. This cable is 20 cm. long.

DIN35 RAIL 49 CM (A-BX-I-00061)



This is aluminum rail to be attached with board by DIN35; it is 49.7 cm long.

HOUSING CON 2.50 mm. FEMALE

- HOUSING CON 2.50MM 2 PIN (A-CO-A-00162)
- HOUSING CON 2.50MM 3 PIN (A-CO-A-00169)
- HOUSING CON 2.50MM 4 PIN (A-CO-A-00089)
- HOUSING CON 2.50MM 5 PIN (A-CO-A-00268)
- HOUSING CON 2.50MM 6 PIN (A-CO-A-00022)
- CON CRIMP 2.50MM (A-CO-T-00002)



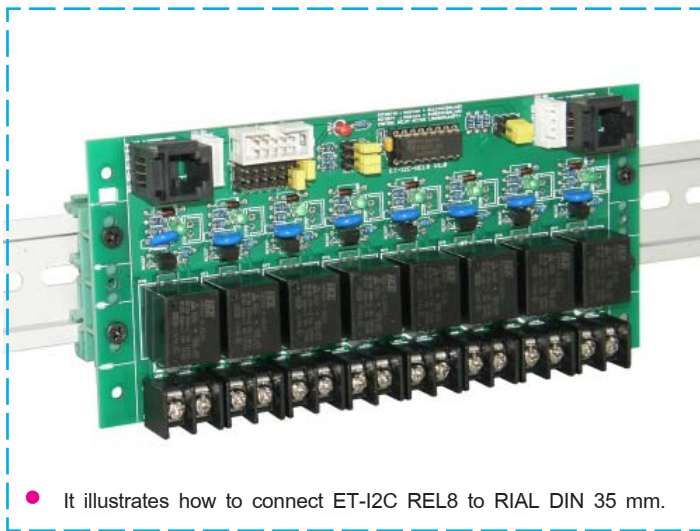
WAFER CON 2.50 mm. STRAIGHT MALE

- WAFER CON 6 PIN 2.50MM STRAIGHT (A-CO-A-00020)
- WAFER CON 5 PIN 2.50MM STRAIGHT (A-CO-A-00293)
- WAFER CON 4 PIN 2.50MM STRAIGHT (A-CO-A-00088)
- WAFER CON 3 PIN 2.50MM STRAIGHT (A-CO-A-00168)
- WAFER CON 2 PIN 2.50MM STRAIGHT (A-CO-A-00161)



ET-I2C REL8 (P-ET-A-00576)

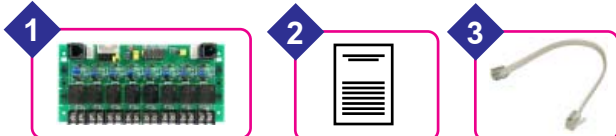
ET-I2C REL8 is Board OUTPUT RELAY 8-CH that is connected via BUS I2C. It uses IC PCF8574 to be IC PORT to receive signal from MCU or Board Controllers like ET-ESP8266-RS485, ET-MEGA32U4-RS485, or BOARD MCU of ETT via Connector I/O 10 PIN.



● It illustrates how to connect ET-I2C REL8 to RIAL DIN 35 mm.

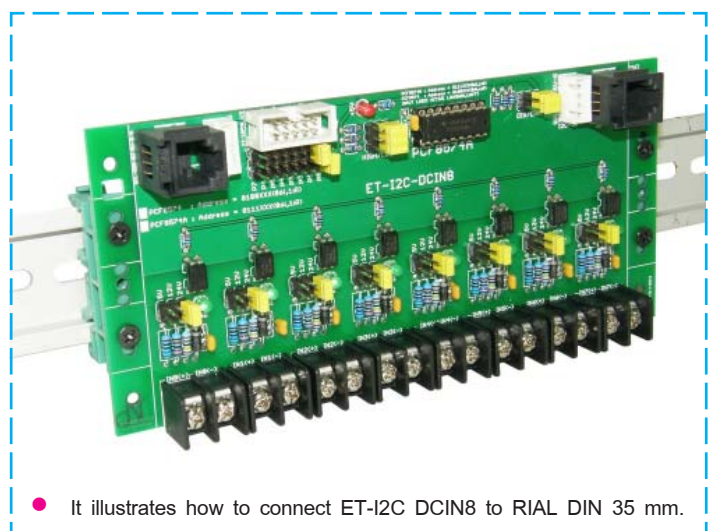
SPECIFICATIONS

- Separately 8 OUTPUT RELAY 10A/250VAC COIL RELAY 5VDC
- IC PORT No.PCF8574 is used as PORT to receive Commands from I2C
- LOGIC "0" activates operation of RELAY to remove the problem of auto-running when started providing POWER to board
- 8 of OUTPUT RELAY as 2 PIN BARRIER TERMINAL 7.62mm. CONNECTOR from RELAY is divided into NO and COMMON
- JUMPER chooses 8-ADDRESS; so it can connect 8 of Board ET-I2C REL8 in BUS I2C
- Connector I2C for Board is WAFER 4 PIN (2.50 mm.) and 2 of FEMALE RJ11 6 PIN; it can be connected to board or it is connected together from board. Moreover, it provides Connector ETT 10 PIN IDC that is connected from ETT Boards for connecting and receiving Signal I2C to board, including JUMPER for choosing BIT for SCL, SDA
- RAIL DIN 35mm.
- PCB size: 7.5 x 16.5 cm.
- Package of ET-I2C REL8 includes...
 1. Board
 2. Manual
 3. CABLE RJ-I2C-RJ



ET-I2C DCIN8 (P-ET-A-00577)

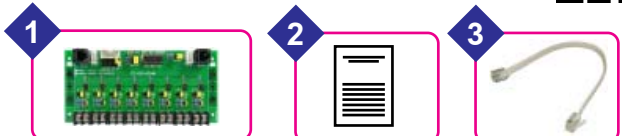
ET-I2C DCIN8 is Board INPUT DC 8-CH that is connected via BUS I2C. It uses IC PCF8574A as IC PORT to receive signal from MCU or Board Controllers like ET-ESP8266-RS485, ET-MEGA32U4-RS485, or BOARD MCU from ETT via Connector I/O 10 PIN.



● It illustrates how to connect ET-I2C DCIN8 to RIAL DIN 35 mm.

SPECIFICATIONS

- 8 INPUT DC IN OPTO ISOLATION separates electrical signal between boards by IC OPTO PC817
- Choose 3-LEVEL of SIGNAL INPUT by JUMPER to connect to board; 5V, 12V and 24V
- IC PORT No.PCF8574A is used as PORT to receive Commands from I2C
- 8-CH INPUT uses Connector 2 PIN BARRIER TERMINAL 7.62 mm. 8-Pair separate
- JUMPER chooses 8-ADDRESS; so, it can connect 8 of Board ET-I2C DCIN8 in BUS I2C
- Connector I2C for Board is WAFER 4 PIN (2.50 mm.) and 2 of FEMALE RJ11 6 PIN; it can be connected to board or it is connected together from board. Moreover, it provides Connector ETT 10 PIN IDC that is connected from ETT Boards for connecting and receiving Signal I2C to board, including
- JUMPER for choosing BIT for SCL, SDA
- RAIL DIN 35 mm.
- PCB size: 7.5 x 16.5 cm.
- Package of **ET-I2C DCIN8** includes...
 1. Board
 2. Manual
 3. CABLE RJ-I2C-RJ



OLED 1.3 I2C WHITE (A-LC-G-00029)

OLED 1.3 I2C BLUE (A-LC-G-00030)



This is GRAPHIC OLED Display with 128 x 64 DOT and 1.3 inch high. It is easily seen and it is more obvious than general LCD. Moreover, it is more convenient to connect to various Board MCUs through I2C Interface. It is compatible with 3.3V or 5V Power Supply. It provides Example Use, Example Program of ARDUINO in CD-ROM.

- OLED 1.3 I2C WHITE is model 128 x 64 DOT with white letter and black screen.
- OLED 1.0 I2C BLUE is model 128 x 64 DOT with blue letter and black screen.

SPECIFICATIONS

- Use CHIP No.SH1106 for processing data of DISPLAY
- GRAPHIC OLED Display is 1.3 inch wide and 128 x 64 DOT RESOLUTION
- I2C Interface for connecting to Board MCUs

Directly connect to Microcontroller that is 3.3V and 5V Power Supply without using any Regulator

- POWER SUPPLY is 3.3VDC-5VDC, Current is 8mA when running
- PCB size: 33.7 x 35.5 mm.; Display size: 14.7 x 29.42 mm.
- Package of **OLED 1.3 I2C** contains ...

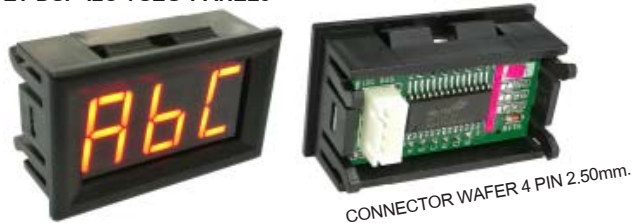
1. Board OLED 1.3 I2C
2. CD-ROM Manual and Example Program

ET-DSP I2C 7SEGE PANEL3 (P-ET-A-00595)

ET-DSP I2C 7SEGE PANEL4 (P-ET-A-00596)

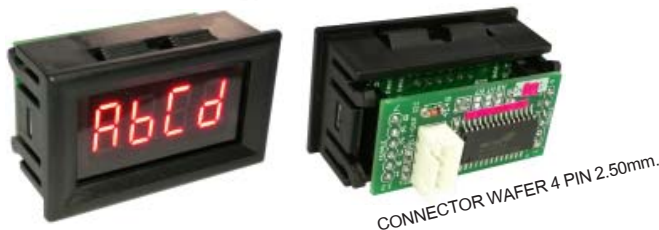
ET-DSP I2C 7SEGE PANEL3 and PANEL4 is a Display Set in the format of 3-DIGIT and 4-DIGIT 7SEGMENT red LED that is provided with frame to cover the circuit and be mounted to panels easily. It is connected to MCU Boards via PORT I2C BUS such as ET-ESP8266-RS485, ET-MEGA32U4-RS485, and etc.

ET-DSP I2C 7SEGE PANEL3



CONNECTOR WAFER 4 PIN 2.50mm.

ET-DSP I2C 7SEGE PANEL4



CONNECTOR WAFER 4 PIN 2.50mm.

- PANEL3 is 3-DIGIT 7SEGMENT red LED with 0.56inch in height
- PANEL4 is 4-DIGIT 7SEGMENT red LED with 0.36inch in height
- Use IC No.HT16K33 from HOLTEK to control and adjust 16-level of Brightness for the display
- CONNECTOR WAFER 4 PIN 2.50mm. under Standard of ETT is connected via I2C BUS
- Setup 8 Address positions for I2C, so it can connect to a maximum of 8 of PANEL3 or PANEL4 in the same I2C BUS
- Use 3.3V or 5.0V POWER SUPPLY and it also is compatible with 3.3V or 5.0V I2C BUS
- Dimensions of Frame of Display: 48mm. X 29mm. X 22mm.
- Size of hole for mounting to the Frame: 45 x 26 mm.

LCD 16x2 I2C (A-LC-C-00026)



It is LCD with 16-Character 2-Line, blue BACKLIGHT and white font (STN NEGATIVE BLUE). The display is I2C Interface that saves amount of I/O of CPU when connecting with this LCD. It provides program for using with Board Arduino.

SPECIFICATIONS of LCD 16x2 I2C

- LCD 16-Character 2-Line and blue BACKLIGHT (STN NEGATIVE BLUE)
- Only use 4 Cables for I2C-BUS Interface; GND, +5VDC, SDA, SCL. Moreover, it can connect 8 LCD together in the same I2C BUS (Must set different ADDRESS)
- IC extends PORT to connect LCD by PCF8574A or PCF8574
- PCB Size: 80 x 36mm.; Display Size: 64 x 14mm.
- Use Power Supply 5VDC, 25mA Current
- Complete set includes Board LCD, CD-ROM Manual and Example Program for using on Arduino

LCD 20x4 I2C (A-LC-C-00028)



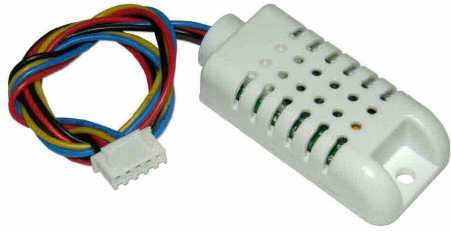
It is LCD with 20-Character 4-Line, blue BACKLIGHT and white font (STN NEGATIVE BLUE). The display is I2C Interface that saves amount of I/O of CPU when connecting with LCD. It provides example program for using with Board Arduino; for example, connecting to I2C Boards from ETT directly like ET-ESP8266-RS485, ET-MEGA32U4-RS485 and etc.

SPECIFICATIONS of LCD 20x4 I2C

- LCD type is 20-Character 4-Line and blue BACKLIGHT (STN NEGATIVE BLUE)
- Only use 4 Cables for I2C-BUS Interface; +5VDC, SDA, SCL, and GND. Moreover, it can connect 8-LCD together in the same I²C BUS (Must set each ADDRESS differently by choosing the soldering point).
- IC No.PCF8574A or PCF8574 is used to extend I²C PORT to connect to LCD
- PCB Size: 92 x 60mm.; Display Size: 82 x 32mm.
- Use Power Supply 5VDC, 40mA Current (BACKLIGHT is enabled (ON) while running)
- Complete set includes Board LCD, CD-ROM Manual and Example Program for using on Arduino

ET-SENSOR BME280 (P-ET-A-00571)

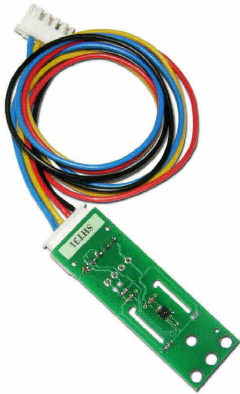
ET-SENSOR BME280 that is all in one device to measure HUMIDITY, TEMPERATURE and PRESSURE completely; it uses IC SENSOR No.BME280 from BOSH.



- DIGITAL** : INTERFACE 16BIT I²C (3.4 MHz MAX SPEED)
- HUMIDITY** : +/- 3% RH (0-100%)
- PRESSURE** : 1.5 Pa (300-1100 hPa)
- TEMP. ACCURACY (°C)** : +/- 1% (-40 TO +85 °C)
- RESPONSE TIME** : 1 SECOND
- POWER SUPPLY** : 1.8 - 3.6 VDC

It is provided with plastic frame to contain board that can be actually used and connected. Its dimensions are 59 x 26 x 12 mm. The Connector is 5 PIN with Cable 30 cm. long.

ET-SENSOR SHT31 (P-ET-A-00539)



ET-SENSOR SHT31 measure humidity and temperature, it assembles IC on PCB that is ready to test the operation and connect with Micro System to read values of humidity and temperature.

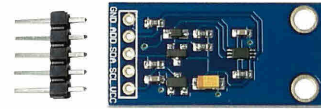
- PCB SIZE 4.9 x 1.6 cm.
- Provide Connector 5PIN and Cable 5PIN with 30 cm. in length
- **ET-SENSOR SHT31** consists of SENSOR SHT31-DIS-B
- HUMIDITY ACCURACY (% RH): +/-2.0 % RH
- TEMP. ACCURACY (°C) : +/- 0.3 °C
- INTRFACE : I2C
- SUPPLY DC : 2.4-5.5V

PROBE DS18B20 HAT (P-CB-A-00046)



This PROBE is STAINLESS that has IC DS18B20 insides; it is shielded well and it is waterproof for 1 meter in depth.

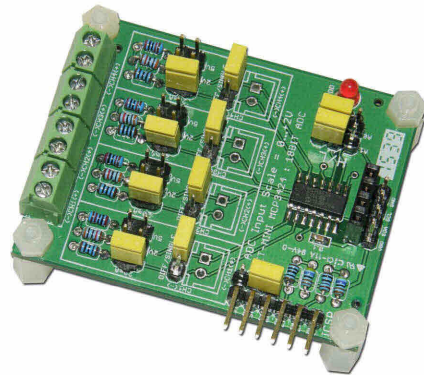
BH1750 LUX SENSOR (A-LE-N-00121)



This MODULE measure intensity of light by IC No.BH1750; it is I2C Interface.

- BH1750 SENSOR measures intensity of light with 16 BIT Resolution
- Range of measurement is 1 – 65535 LUX, WAVE LENGTH 560 nm.
- POWER SUPPLY 3-5 VDC, connect to MCU 3.3V or 5V through I2C Interface
- PCB Size: 33 x 15.2 mm.; PIN HEADER 2.54 mm. 5 PIN
- BH1750 LUX SENSOR includes Board and Manual

ET-MINI MCP3424 ADC (P-ET-A-00537)



ET-MINI MCP3424 ADC is Board A TO D with 18-BIT 4-CH, run as I2C Interface. Use IC No.MCP3424 of MICROCHIPS to measure both Signal Current and Voltage as SINGLE END MODE (0-2V) and DIFFERENTIAL MODE (+2V, +2V).

- Use IC No.MCP3424-E/SL, SOIC-14, 18 BITS A/D, 4 CHANNELS
- Have 4-CH Adjustable JUMPER for measurement as follows;
 - Measure 4-20 mA Current by 100 Ohm Resistor
 - Measure +2V Voltage as SINGLE Type and +2V to -2V as DIFF Type
 - Measure +5V Voltage as SINGLE Type and +5V to -5V as DIFF Type
- Provide Connector ICSP to interface to PICKIT SERIAL ANALYZER
- Choose and setup 8 of I2C Address Positions by JUMPER
- Use Power Supply 2.7-5.5 VDC for running board
- Signal Connection on I2C side is PIN HEADER 1 x 4 MALE and 1 x 4 FEMALE
- Signal INPUT is 2 PIN TERMINAL 4-CH
- Board Size: 4.4 x 5.6 cm.
- **ET-MINI MCP3424 ADC** includes...
 1. Board ET-MINI MCP3424
 2. CD-ROM Manual

บริษัท อีทีที จำกัด

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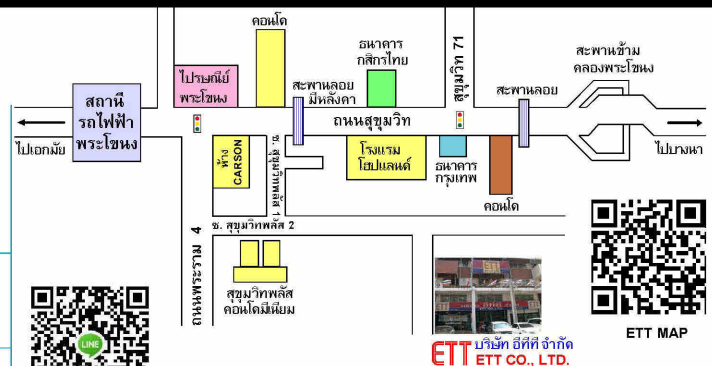
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