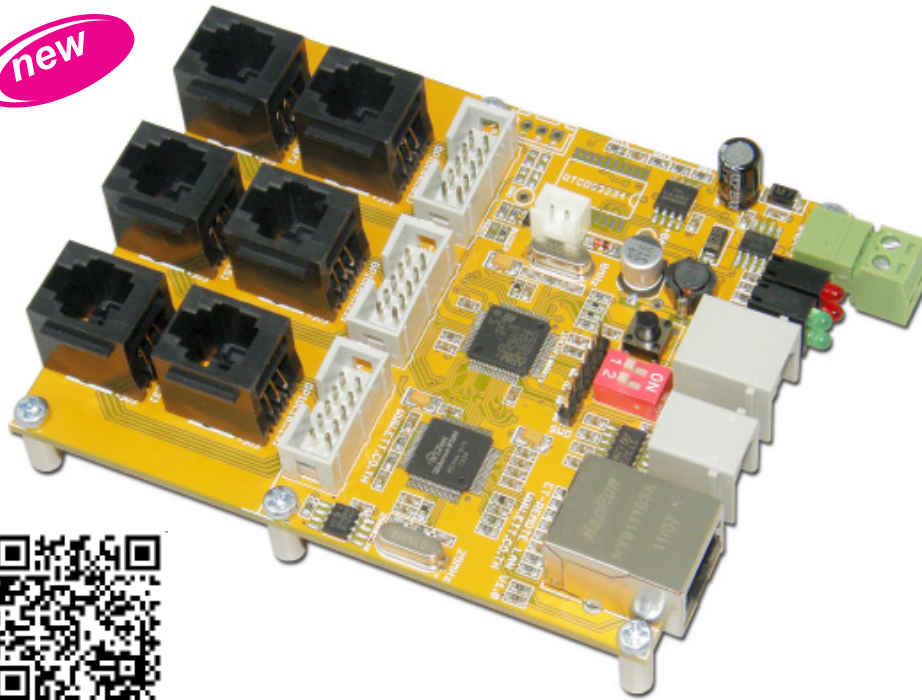


# ET-REMOTE LAN (P-ET-A-00507)

new



• Connect with PC that has direct Port LAN as Peer-to-Peer by using Cable LAN CROSS.



• Connect PC with LAN System via HUB by using Cable LAN DIRECT.

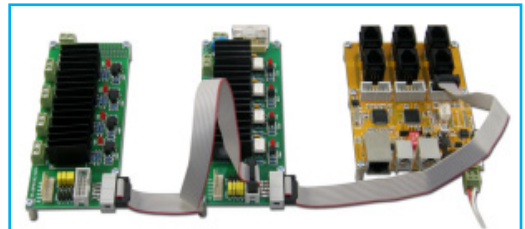


• Connect with PC via WiFi, it has to connect via Wireless Router. It connects Board with Router via Port LAN by using Cable LAN DIRECT.



This Board Microcontroller is used as 24-BIT INPUT/OUTPUT in order to connect ETHERNET LAN; MCU of Board has already provided Firmware Command. If user requires using this Board to be INPUT/OUTPUT via LAN System, it only uses and send the Command to Board in the format of TCP/IP; so, it is more convenient to use and it reduces much difficulty in developing program.

- Connect and communicate with Board via TCP/IP through ETHERNET LAN 10-BASE T/100-BASE TX, Connector RJ45 with LED
- Main MCU is ARM 32BIT CORTEX-M3, 128 KBYTE FLASH, 64-LQFP TYPE with internal Program Firmware of ETT
- Use ETHERNET CONTROLLER No.W5100 from WIZNET that has TCP/IP STACK inside
- Have HARDWARE MAC ADDRESS standard EUI-48 that has unique code, it is useful to write program in order to protect against COPY
- Have 24 BIT GPIO TTL LOGIC 3.3V
  - Can setup function of each BIT to be INPUT/OUTPUT independently
  - Can drive OUTPUT LOGIC as LOGIC 3.3V/20mA
  - Can setup POWER-ON OUTPUT LOGIC of each OUTPUT
  - Can receive INPUT LOGIC in the range of 0-5V
- Firmware contains Instruction Set that ETT wrote and provided, it performs in the format of ASCII COMMAND via TCP/IP Network
- Can setup IP ADDRESS, SUBNET MASK, TCP PORT, USER NAME, PASSWORD
- Support Mode WEB SERVER CONTROL and Mode TCP SERVER CONTROL
- Have DIP-SW to choose Operation Mode and RESTORE CONFIGURATION DEFAULT
- Have 3 of Connector 10PIN ET-BUS I/O and 6 of new Connector RJ11
- Have 1-CH UASRT RS232 in Connector 4PIN RJ9 (reserved for communicating with new ETT devices "ET-RS232/1-WIRE", it can connect with Temperature SENSOR No.DS1820/S20/B20)
- Have 1-CH SPI LOGIC TTL 3.3V Connector RJ11 (reserved, it is unused in the Firmware)
- Have 4 of LED to display the operating status of Board
- Have Connector BUZZER 2PIN 12VDC (be compatible with ET-BUZZER 12V TYPE B)
- Be compatible with Power Supply DC 8-12VDC/500mA; use Connector 2PIN PLUG-IN TERMINAL BLOCK (can modify Cable POWER DC of ET-SWITCHING ADAPTER 12V 0.5A TYPE J by cutting Jack off)
- Board ET-REMOTE LAN can be connected with I/O BOARD of ETT such as ET-OPTO AC-IN4, ET-OPTO DC-IN4, ET-OPTO AC-OUT4, ET-OPTO DC-OUT4, ET-OPTO RELAY4 and etc
- Board size: 800x10.00cm. with metal Stand 1.10CM. in height



• Example of modifying and connecting with Boards ET-OPTO I/O 4.

## OPTION

**ET-SWITCHING ADAPTER 12V 0.5A TYPE J**  
(A-AP-A-00057)



INPUT:100 - 240VAC  
OUTPUT:12VDC 0.5A Female Jack 2.5 mm.

**ET-BUZZER 12V TYPE B**  
(P-ET-A-00508)



**สาย LAN CROSS 2M**  
(P-CB-A-00027)



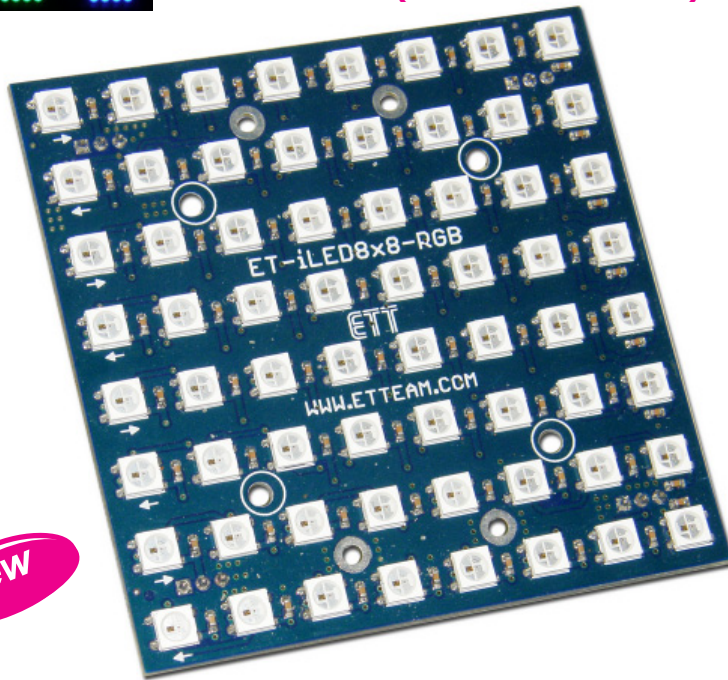
**สาย LAN DIRECT 2M**  
(P-CB-A-00028)



## ET-iLED 8x8-RGB (P-ET-A-00510)



WS2812B LED RGB  
24 BIT COLOR (16,777,216 COLOR)



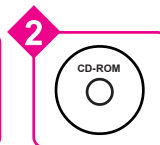
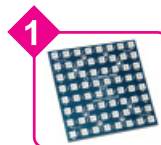
new



ET-iLED 8x8-RGB is RGB LED Display Board that includes 64 DOT(8x8) of RGB LED by using 64 DOT of IC LED No.WS2812B as CASCADE Connection. Each LED can display high resolution of RGB up to 24 BIT COLOR or 16 million colors and light of this LED is highly bright.

### Specifications of ET-iLED 8x8-RGB

- Use 5VDC to supply circuit (use 3.84A Current at the maximum)
- Only use single Cable CONTROL or 1 BIT for SERIAL NZR Communication to control Display Circuit of all 64 LED; the CASCADE Connection is more convenient to connect and control the operation.
- INPUT can be connected with TTL 5V or 3.3V by using IC 74LVC1G17 as SCHMITT-TRIGGER BUFFER
- Use IC LED No.WS2812B 5.0 x 5.0mm. 4 PIN; this IC LED includes DRIVE Circuit, LED RGB Controlling Circuit, ELECTRIC RESET Circuit, POWER LOSE RESET Circuit
- This WS2812B includes 3-color RGB LED, it can display color resolution as 24 BIT COLOR (16,777,216 colors) with 256 shades of brightness, and scanning frequency not less than 400 Hz/S
- Can connect a maximum of 16 Boards ET-iLED 8x8-RGB together (**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 8x8-RGB**)
- Light of this LED is highly consistent and it remain in the state of LATE until there is incoming DATA.
- It can connect with Board of Arduino with example program
- PCB size: 8.15 x 8.15cm. (3200 x 3200 mil.)
- Use 4 of 3-PIN PIN HEADER 2.54 mm. under PCB
- **ET-iLED 8x8-RGB** includes...
  1. Board ET-iLED 8x8-RGB
  2. CD-ROM Manual and Example Program



## ET-iLED-RGB (P-ET-A-00509)

new



Its specification is the same as ET-iLED 8x8-RGB but this product has only one LED WS2812B.

- Use 5VDC to supply circuit (use 60mA Current at the maximum)
- Use TTL 5V INPUT
- Can connect Boards ET-iLED-RGB together not greater than 1024 Boards
- PCB size: 1.75 x 1.75cm. (700 x 700 mil.)
- Use 2 of 3-PIN PIN HEADER 2.54 mm. under PCB
- **ET-iLED-RGB** includes...
  1. Board ET-iLED-RGB
  2. Paper and circuit (can download Manual and Example Program from website: [www.etteam.com](http://www.etteam.com))



# ET-TFT43-EVE (P-ET-A-00504)



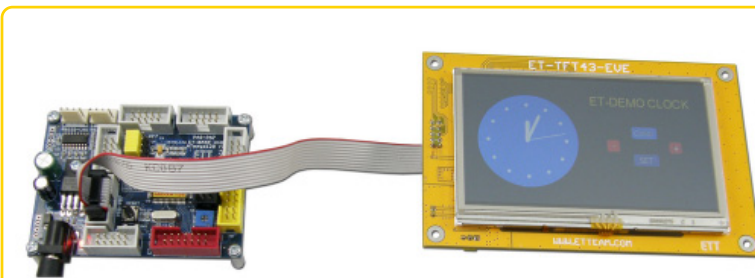
**new**

TFT LCD 4.3 INCH WQVGA / 480 x 272 PIXEL 262K COLOR / RESISTIVE TOUCH / LED BACKLIGHT  
CHIP FT800 # GRAPHIC CONTROL, AUDIO PROCESSING & RESISTIVE TOUCH CONTROLLER

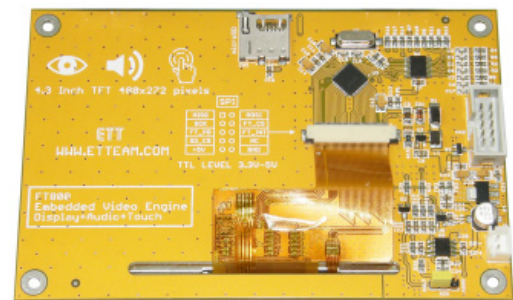


**ET-TFT43-EVE** is Board TFT LCD 4.3 Inch that works with CHIP FT800, it is easy to use TFT LCD. It is SPI Interface and supports both 3.3V I/O and 5V I/O. It can interface with both 3.3V MCU and 5V MCU, but, the Power Supply of board must be 5V only.

**FT800** is an intermediate IC between user and TFT LCD in order to control the operation. It includes the functions of DISPLAY LCD, AUDIO and TOUCH together in the single CHIP of FT800, including GRAPHIC CONTROLLER; so, user does not need to write or create anything by self.



- Example shows how to interface and use with Board Microcontroller.



## Specifications of Board ET-TFT43-EVE

- Use TFT LCD Display with 4.3 inch WQVGA + RESISTIVE TOUCH SCREEN, DISPLAY SIZE W x H x D = 105.60 x 67.3 x 4.0 mm., Screen Definition = 480 x 272 PIXEL, 262K COLOR, 18 BIT COLOR INTERFACE, LED BACKLIGHT
- Use SINGLE CHIP to control LCD No. **FT800** that includes FUNCTIONS of GRAPHIC CONTROL, AUDIO PROCESSING and RESISTIVE TOUCH CONTROLLER together in the single CHIP. So, user can use and command the operation by the created and provided COMMANDS.
- Support 2 AUDIO SOURCES to play audio file as follows;
  1. From **SOUND SYNTHESIZER**: There is 58 SOUND EFFECTS that have already created in the FT800 and provided for users such as BELL
  2. From **AUDIO PLAYBACK**: It plays MONO AUDIO FILE in the format of 8-BIT PCM, 8-BIT ULAW or 4-BIT IMA-ADPCM. It has to send FILE from MCU and stores in the MEMORY RAM of FT800 first.
- Control and adjust VOLUME by program through REGISTER
- Can adjust the brightness of LED BACKLIGHT by program through REGISTER
- Can INTERFACE with external MCU in the format of SPI (4-Wire), it supports both 3.3V TTL and 5V TTL with the maximum CLOCK Speed of 30MHz
- Have SOCKET to insert MICRO SD CARD to use with FILES by using external MCU to control the operation
- Have POWER AMP 1W ON BOARD with Connector Speaker 2PIN (2.50mm.) (**OPTION**: It is used with Speaker 8 OHM, it is "ET-SP TYPE B (P-ET-A-00505)
- Use Connector 10PIN HEADER ETT for using Board ET—TFT43 EVE and it uses POWER SUPPLY +5VDC from this Connector 10PIN ET
- Board Size: 8.40 x 13.00 cm.
- **ET-TFT43-EVE** includes...

1. Board
2. CD-ROM User's Manual and Example Programs

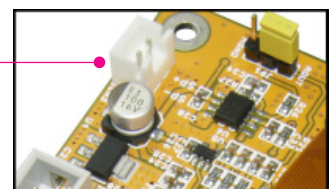


## ET-SP TYPE B (P-ET-A-00505)



- Speaker 8 OHM
- Interface with Connector Speaker 2PIN of ET-FTF43-EVE

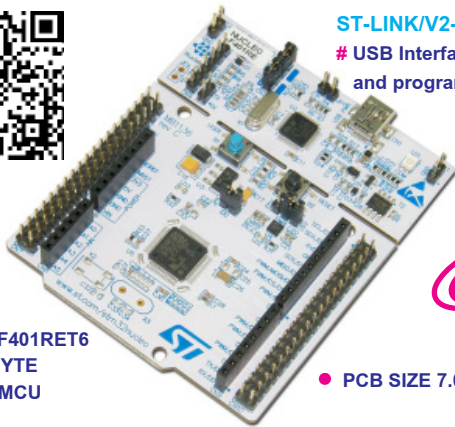
**new**



**NUCLEO-F401RE**

(C-YA-A-00185)

This is STM32 Development Kit from ST that uses MCU in the family of STM32F4; there are parts of DOWNLOAD and DEBUG on board, including MCU. It is low price.



**ST-LINK/V2-1**  
# USB Interface for debugging and programming



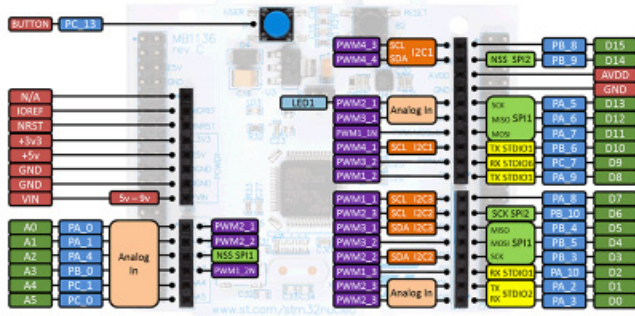
MCU #

STM32F401RET6  
512-KBYTE  
32 BIT MCU

● PCB SIZE 7.00 x 8.25 CM.

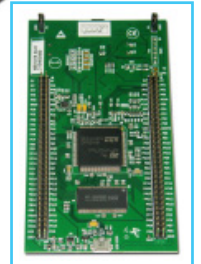
- Part of DOWNLOAD and DEBUG, it is ST-LINK V2.-1 to DOWNLOAD program and DEBUG via PORT USB MINI. Moreover, there is Connector SWD to DOWNLOAD/DEBUG MCU from external board.
- Part of Board
  - Use MCU No.STM32F401RET6, 32BIT ARM CORTEX M4, 512 KBYTE FLASH, 96 KBYTE RAM, LQFP64 TYPE
  - There are 2 types of Connector I/O:
    - Arduino UNO 32 PIN
    - STMICRO MORPHO is 2 of PIN HEADER 19 x 2; there are PIN HEADER on both sides of PCB.
  - Use POWER SUPPLY from Connector USB; or, choose the external Power Sources in the range of 3.5V, 5V, 7-12VDC
  - 3 LED, 2 SW, and RESET
  - Have Connector USB MINI to connect with computer (OPTION: It does not include Cable USB in set, customer needs to additionally purchase if there is no any CABLE USB TO 5P MINI (A-CB-A-00044))

\*\*\* This product is imported product, there is no any warranty.\*\*\*



**STM32F429I DISCOVERY**

(C-YA-A-00184)



This is one of low price development kits for 32 BIT MICROCONTROLLER from ST in the family of STM32F429/439. There is a part of ST-LINK V2 on board that is ready to develop. There are 2 parts of board as follows;

- 1. Part of ST-LINK V2**, it DOWNLOAD and DEBUG to MCU STM32F429ZIT6 on board; it uses ST-LINK via PORT USB; and Connector USB on Board is as MINI-B (CABLE USB TYPE A TO B MINI is not included in the set, customer needs to additionally purchase OPTION)
  - Connector 6 PIN SWD is externally connected to DEBUG and PROGRAM for external board
- 2. Part of Board**, it uses STM32F429
  - Use MCU No.STM32F429ZIT6 32 BIT ARM CORTEX-M4F, 2 MB FLASH MEMORY, 256 KB RAM, LQFP144
  - Use +5VDC from Connector USB for board, or from external POWER 5V or 3V
  - Use 2.4" QVGA TFT LCD with the part of TOUCH SCREEN on board
  - SD RAM 64 MBITS
  - SENSOR 3-AXIS DIGITAL OUTPUT No.L3GD20
  - 6 LED, 2 SW, and RESET
  - USB OTG (MICRO-AB Header)
  - Under PCB has 2 of PIN HEADER 2.54mm. MALE 32x2 for external connection

\*\*\* STM32F429 DISCOVERY is the imported product, there is no any warranty.\*\*\*

**ET-MINI PWR5/ADJ-3A**

(P-ET-A-00506)



It is 2 of POWER SUPPLY STEP-DOWN VOLTAGE REGULATOR, there is Circuit +5VDC/3A and Adjustable VOLTAGE 1.23-35V/3A (It depends on incoming INPUT VOLTAGE).



- INPUT DC POWER 7-35VDC
- +5VDC/3A OUTPUT uses LM2576T-05
- Adjustable VOLT 1.23-35V/3A OUTPUT uses LM2576T-ADJ by using Adjustable VR
- Connector INPUT DC 2PIN PCB TERMINAL SCREW TYPE
- Connector OUTPUT DC 2PIN PCB TERMINAL SCREW TYPE
- Board size(WxLxD): 5.60 x 4.30 x 2.20cm. with metal stand 1.10cm. in height