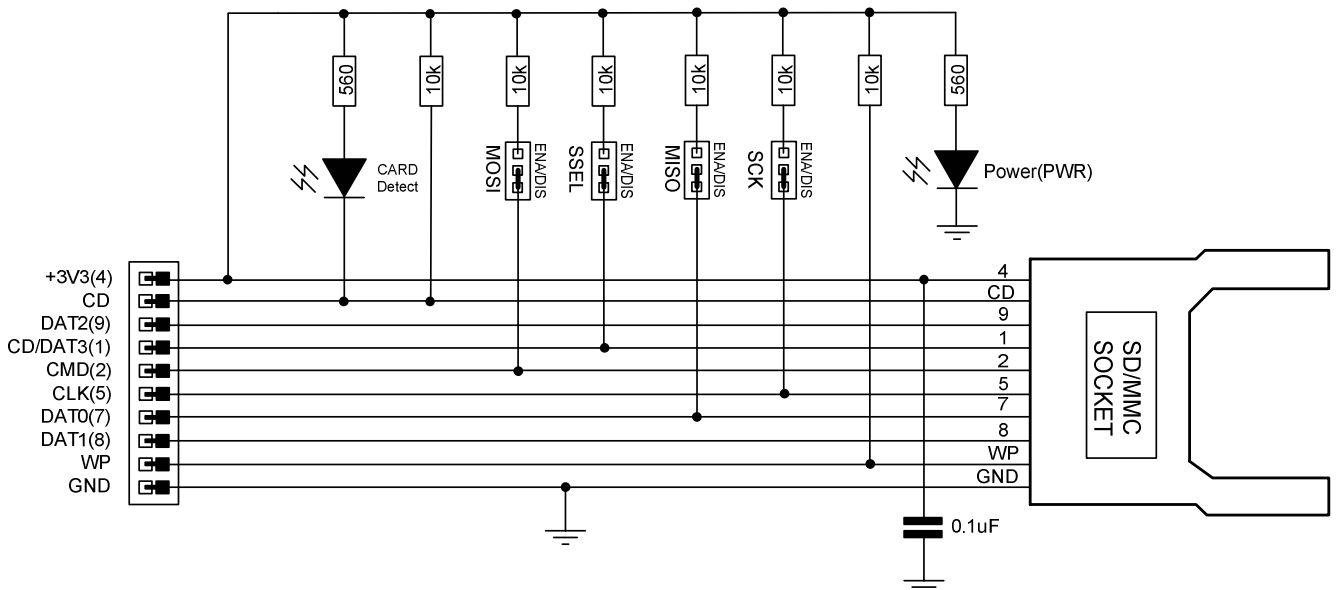
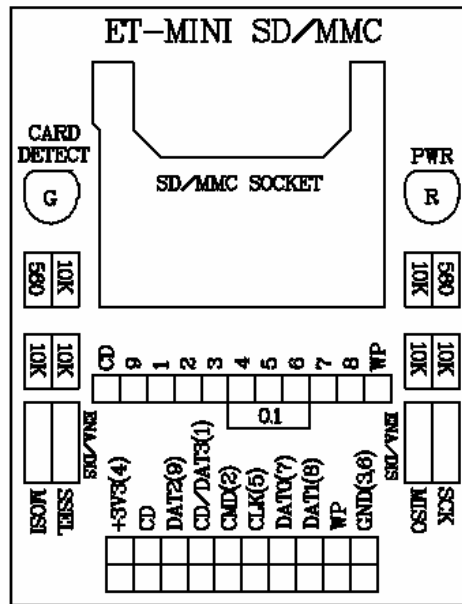

ET-MINI SD/MMC

The connection SD/MMC MEMORY CARD

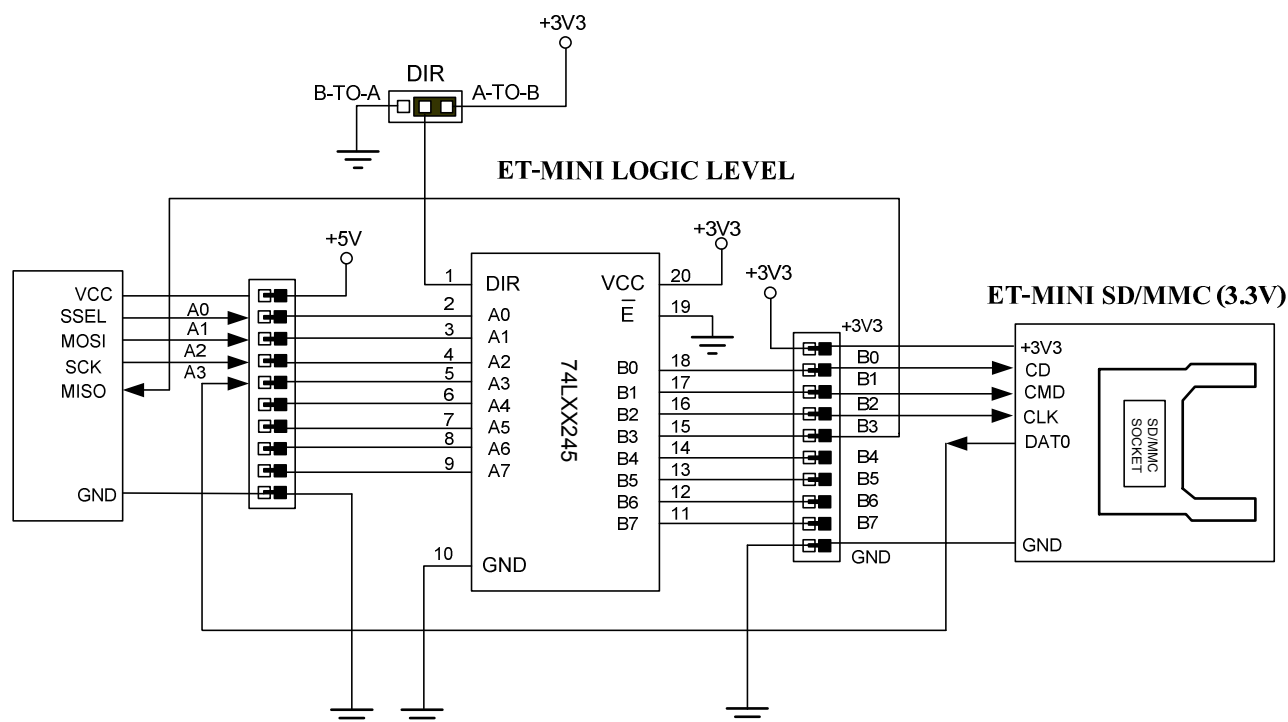
ET-MINI SD/MMC is a device for connection components with SD/MMC memory Card; for example, the connection between Microcontroller and Memory Card (SD/MMC). This set contains Socket for inserting Memory Card such as SD and MMC and it provides external signal Pin at Connector Pin, so it is quite convenient to apply. Moreover, there are many circuits such as Circuit Card Detect, Circuit Pull-Up and etc.

Specifications of ET-MINI SD/MMC

- Support Memory Card as SD type and MMC type
- Can select Enable/ Disable for Circuit Pull-Up
- Can display status of inserting Card or CARD DETECT by using LED and send signal OUTPUT through Pin signal CD.
There is specification as follows;
 - CD = 1**; It means that there is no Card.
 - CD = 0**; It means that there is Card.
- Can display status of Switch Write Protection on SD/MMC Card and send signal OUTPUT through signal Pin WP as follows;
 - WP = 1**; It is OFF position of Switch Write Protection.
 - WP = 0**; It is ON position of Switch Write Protection.



Example: The connection signal between Microcontroller (5V device) and SD/MMC CARD (3V device) by using ET-MINI LOGIC LEVEL and ET-MINI SD/MMC in SPI Mode.



Details of Signal Pin SD CARD

There are 2 proceedings to connect SD CARD; SD MODE type and SPI MODE type as the details in the table below.

- Details of signal Pin when it is connected as SD MODE type.

Pin No.	Name	Type ¹	Description
SD Mode			
1	CD/DAT3 ²	I/O ³ , PP	Card detect/Data line [Bit 3]
2	CMD	I/O, PP	Command/Response
3	V _{SS1}	S	Supply voltage ground
4	V _{DD}	S	Supply voltage
5	CLK	I	Clock
6	V _{SS2}	S	Supply voltage ground
7	DAT0	I/O, PP	Data line [Bit 0]
8	DAT1	I/O, PP	Data line [Bit 1]
9	DAT2	I/O, PP	Data line [Bit 2]

- Details of signal Pin when it is connected as SPI MODE type.

SPI Mode			
1	CS	I	Chip Select (active low)
2	DataIn	I	Host-to-card Commands and Data
3	V _{SS1}	S	Supply voltage ground
4	V _{DD}	S	Supply voltage
5	CLK	I	Clock
6	V _{SS2}	S	Supply voltage ground
7	DataOut	O	Card-to-host Data and Status
8	RSV ⁴	---	Reserved
9	RSV ⁵	---	Reserved

Details of Signal Pin MMC CARD

There are 2 proceedings to connect MMC CARD; MultiMediaCard MODE and SPI MODE as the details in the table below;

- Details of signal Pin when it is connected as Multimedia Card Mode type.

MultiMediaCard Pad Definition

Pin #	Name	Type*	MultiMediaCard Description
1	RSV	NC	Not Connected or Always '1
2	CMD	I/O/PP/OD	Command/Response
3	VSS1	S	Supply voltage ground
4	VDD	S	Supply voltage
5	CLK	I	Clock
6	VSS2	S	Supply voltage ground
7	DAT[0]	I/O/PP	Data 0

*Note: S=power supply; I=input; O=output; PP=push-pull; OD=open-drain; NC=not connected.

- Details of signal Pin when it is connected as SPI Mode type.

SPI Pad Definition

Pin #	Name	Type*	SPI Description
1	CS	I	Chip Select (Active low)
2	DataIn	I	Host to Card Commands and Data
3	VSS1	S	Supply Voltage Ground
4	VDD	S	Supply Voltage
5	CLK	I	Clock
6	VSS2	S	Supply Voltage Ground
7	DataOut	O	Card to Host Data and Status

*Note: S=power supply; I=input; O=output.