

Hardware Features and Specifications

Of ButterFly M8

Product Name	BUTTERFLY M8	Date	9/30/2018
Produced By	KEICAN R&D Team	Department	Electronics

Item	Item Description	Availability	Quantity	Type
CPU	ATmega32A : <ul style="list-style-type: none"> • A low-power CMOS 8-bit microcontroller running at 16 Mhz • 32Kbytes of In-System Self-programmable Flash program memory • 1024Bytes EEPROM • 2Kbytes Internal SRAM 	Yes	1	Microcontroller
Relays	HI LI SHUN HLS8L-DC5V-S-C ¹ <ul style="list-style-type: none"> • Contact Ratings: 7A 250VAC /15A 120VAC • Max Switching Power: 2770VA/240W • Life Expectancy Electrical: 100,000 Operations (rated load) • Life Expectancy Mechanical: 10,000,000 Operations(no load) 	Yes	8	Electromechanical
RTC Backup Battery	Lithium Cell CR1220 <ul style="list-style-type: none"> • Nominal Voltage: 3 V • Nominal Capacity: 38mAh • Standard Discharge Current: 0.1 mA 	Yes	1	Battery
Memory	<ul style="list-style-type: none"> • 16-Mbit • 4096 Pages (528 Bytes/Page) Main Memory • Two 528-byte SRAM Data Buffers • Serial Peripheral Interface (SPI) 	By Request	1	IC
Power Input	5 V-1 A	Yes	1	PowerJack
RS485	<ul style="list-style-type: none"> • Multipoint Systems Are Supported • Exceeds the Requirements ANSI TIA/EIA-485-A • Bus-Pin Short Circuit Protection From 7 V to 12 V • data transmission over cable lengths of up to 1500 meters. • Thermal Shutdown Protection • full-duplex bus communication • 25 Mbps Signaling Rate 	By Request	1	Communication Protocol

¹ All relay features according to HI LI SHUN HLS8L-DC5V-S-C Datasheet

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I2C	<ul style="list-style-type: none"> • Up to 400kHz Data Transfer Speed • Multi-master Arbitration Support • 7-bit Address Space Allows up to 128 Different Slave Addresses • Both Master and Slave Operation Supported • Device can Operate as Transmitter or Receiver 	Yes	1	Communication Protocol
WIFI	<ul style="list-style-type: none"> • ESP8266 ESP01²: • 802.11 b/g/n support • 802.11n support (2.4 GHz), up to 72.2 Mbps • 2 x virtual Wi-Fi interface • Support Infrastructure BSS Station mode/SoftAP mode/Promiscuous mode • 2.4G ~ 2.5G (2400M ~ 2483.5M Frequency Range) • PCB Trace Antenna • UART Interface • WPA/WPA2 Security And WEP/TKIP/AES Encryption • Network Protocols IPv4, TCP/UDP/HTTP 	Yes	1	Module
SysRealTime	<ul style="list-style-type: none"> • Real-Time Clock (RTC) Counts Seconds, Minutes, Hours, Date of the Month, Month, Day of the week, and Year with Leap-Year Compensation Valid Up to 2100 • I2C Serial Interface 	Yes	1	IC
LEDS	<ul style="list-style-type: none"> • 8 Green LEDS Which Indicates Relays Status • An ON/OFF Red LED 	Yes	9	Component
Buttons	<ul style="list-style-type: none"> • 1 Reset Button • 1 User Stand Button 	Yes	2	Component
Dimensions	<ul style="list-style-type: none"> • Height: 19.52 mm • Width: 76.90 mm • Length: 108.80 mm 			Board

² All features according to Esp8266 Datasheet