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# WIZ550web Datasheet

## Overview

This page provides information about the hardware of WIZ550web and its Baseboard as following:

- Basic Hardware Specification
- Operating Characteristics & I/O Characteristics
- Reference Schematics
- Dimension information

The revision history will be updated in this page in case of any changes of hardware specification or exterior design.

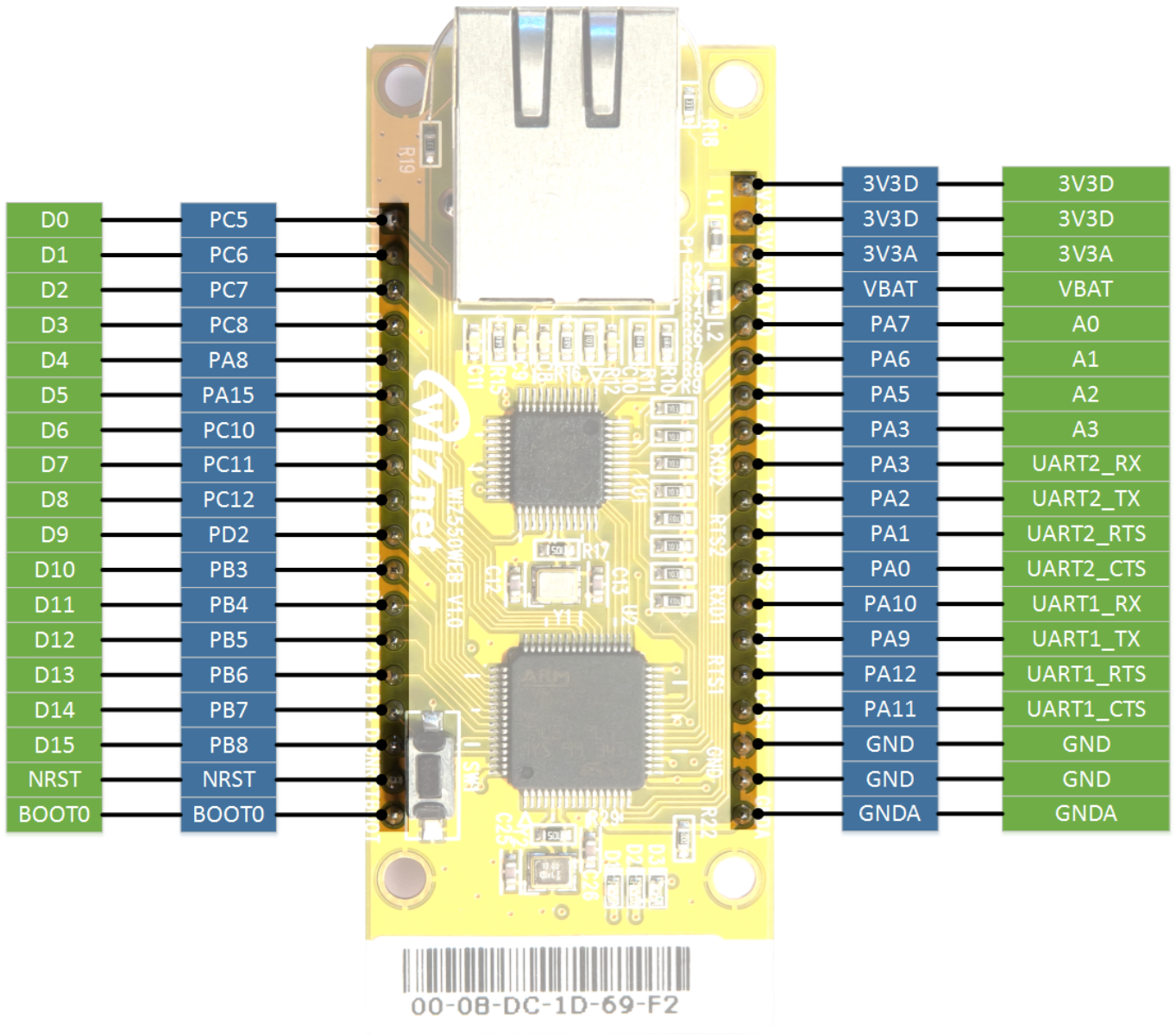
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## Hardware Specification

### WIZ550web

- MCU : **STM32F103RBT6**
- TCP/IP Controller : **W5500**
- RJ45 (Integrated Transformer) : **J1B1211CCD**
- External Flash Memory : **AT45DB081D**
- 2.54mm Pin Header x 2

### WIZ550web Pinout



### Pin Description

As it is used in the EVB and for the web-server by default

Ref No.	Pin No.	Symbol	Type	Description
<b>J1</b>	<b>1</b>	<b>D0</b>	<b>I/O</b>	Digital 0 I/O
	<b>2</b>	<b>D1</b>	<b>I/O</b>	Digital 1 I/O
	<b>3</b>	<b>D2</b>	<b>I/O</b>	Digital 2 I/O
	<b>4</b>	<b>D3</b>	<b>I/O</b>	Digital 3 I/O
	<b>5</b>	<b>D4</b>	<b>I/O</b>	Digital 4 I/O
	<b>6</b>	<b>D5</b>	<b>I/O</b>	Digital 5 I/O
	<b>7</b>	<b>D6</b>	<b>I/O</b>	Digital 6 I/O
	<b>8</b>	<b>D7</b>	<b>I/O</b>	Digital 7 I/O
	<b>9</b>	<b>D8</b>	<b>I/O</b>	Digital 8 I/O / Boot Pin
	<b>10</b>	<b>D9</b>	<b>I/O</b>	Digital 9 I/O
	<b>11</b>	<b>D10</b>	<b>I/O</b>	Digital 10 I/O
	<b>12</b>	<b>D11</b>	<b>I/O</b>	Digital 11 I/O
	<b>13</b>	<b>D12</b>	<b>I/O</b>	Digital 12 I/O
	<b>14</b>	<b>D13</b>	<b>I/O</b>	Digital 13 I/O
	<b>15</b>	<b>D14</b>	<b>I/O</b>	Digital 14 I/O
	<b>16</b>	<b>D15</b>	<b>I/O</b>	Digital 15 I/O
	<b>17</b>	<b>NRST</b>	<b>I</b>	System Reset Input, Active Low
	<b>18</b>	<b>BOOT0</b>	<b>I</b>	BOOT0 Input, Active High

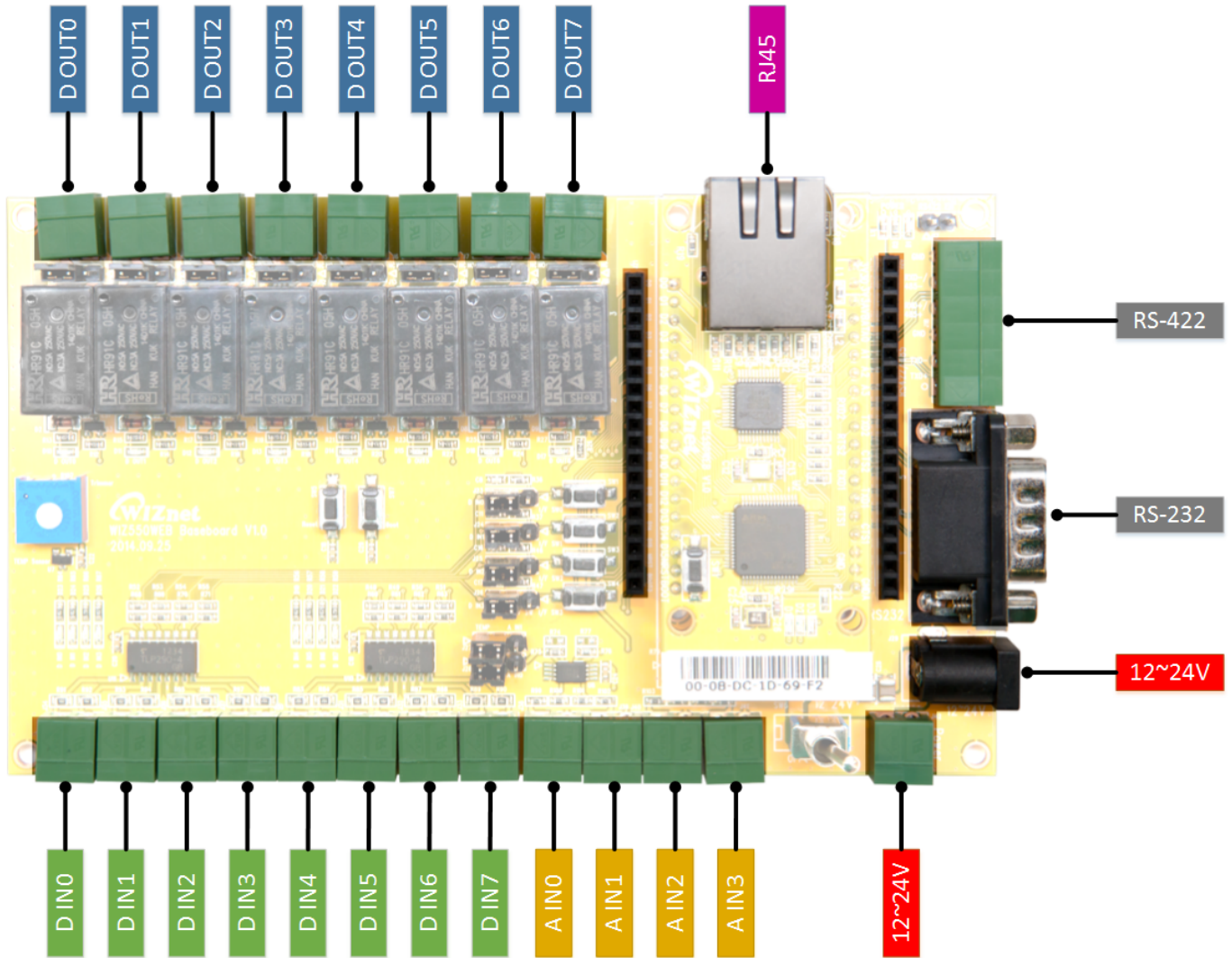
Ref No.	Pin No.	Symbol	Type	Description
<b>J2</b>	<b>1</b>	<b>3V3D</b>	<b>P</b>	Supply DC +3.3V , Digital Power
	<b>2</b>	<b>3V3D</b>	<b>P</b>	Supply DC +3.3V , Digital Power
	<b>3</b>	<b>3V3A</b>	<b>P</b>	Supply DC +3.3V , Analog Power
	<b>4</b>	<b>VBAT</b>	<b>P</b>	Supply DC +3.3V , Low Power Mode
	<b>5</b>	<b>A0</b>	<b>I</b>	Analog 0 Input
	<b>6</b>	<b>A1</b>	<b>I</b>	Analog 1 Input
	<b>7</b>	<b>A2</b>	<b>I</b>	Analog 2 Input
	<b>8</b>	<b>A3</b>	<b>I</b>	Analog 3 Input
	<b>9</b>	<b>UART2_RX</b>	<b>I</b>	Receiver input for UART2
	<b>10</b>	<b>UART2_TX</b>	<b>O</b>	Transmitter output for UART2
	<b>11</b>	<b>UART2_RTS</b>	<b>O</b>	Request To Send output for UART2
	<b>12</b>	<b>UART2_CTS</b>	<b>I</b>	Clear To Send input for UART2
	<b>13</b>	<b>UART1_RX</b>	<b>I</b>	Receiver input for UART1
	<b>14</b>	<b>UART1_TX</b>	<b>O</b>	Transmitter output for UART1
	<b>15</b>	<b>UART1_RTS</b>	<b>O</b>	Request To Send output for UART1
	<b>16</b>	<b>UART1_CTS</b>	<b>I</b>	Clear To Send input for UART1
	<b>17</b>	<b>GND</b>	<b>P</b>	Digital Power Ground
	<b>18</b>	<b>GND</b>	<b>P</b>	Digital Power Ground
	<b>19</b>	<b>GNDA</b>	<b>P</b>	Analog Power Ground

### WIZ550web Baseboard

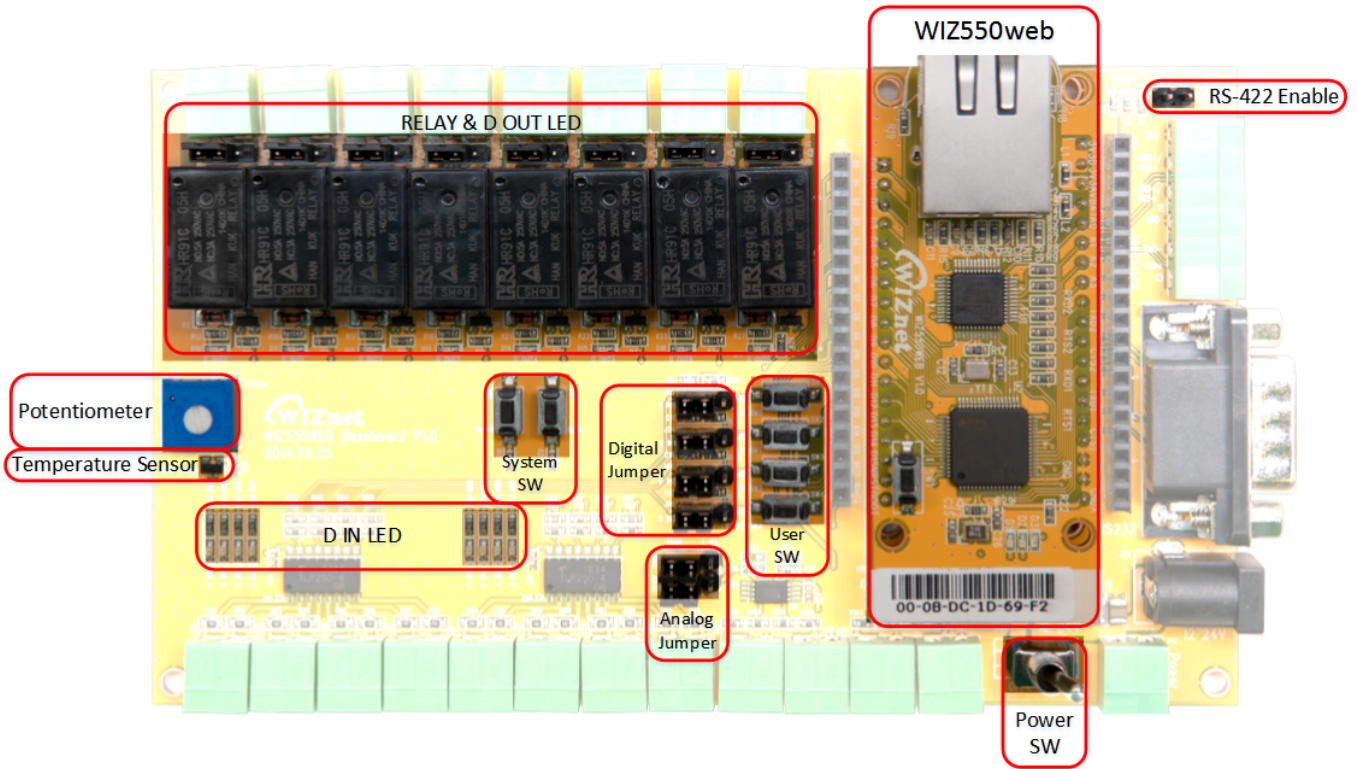
- DC 9~24V Power Input
- Digital Output 8EA (Relay - HR91C-05)
- Digital Input 8EA (Photocouplers - TLP290-4)
- Analog Input 4EA

- RS-232C
- RS-422

### WIZ550web Baseboard Pinout

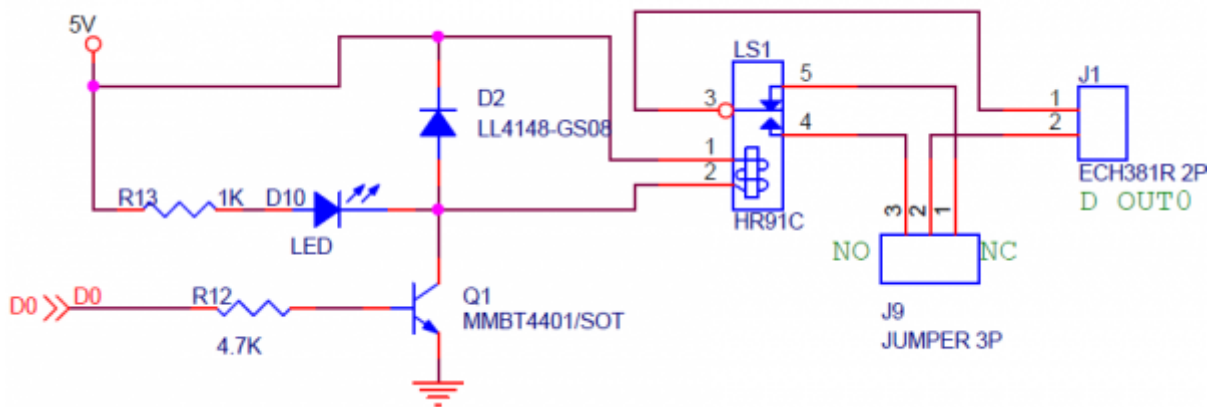


### WIZ550web Baseboard Callout



### Digital Output Port

WIZ550web Baseboard has eight (D0-D7) relay output stage. Below is a photo of basic internal circuit. Jumper, relay NC (Normal close) and NO (Normal Open) can be set.



See the table below for State action.

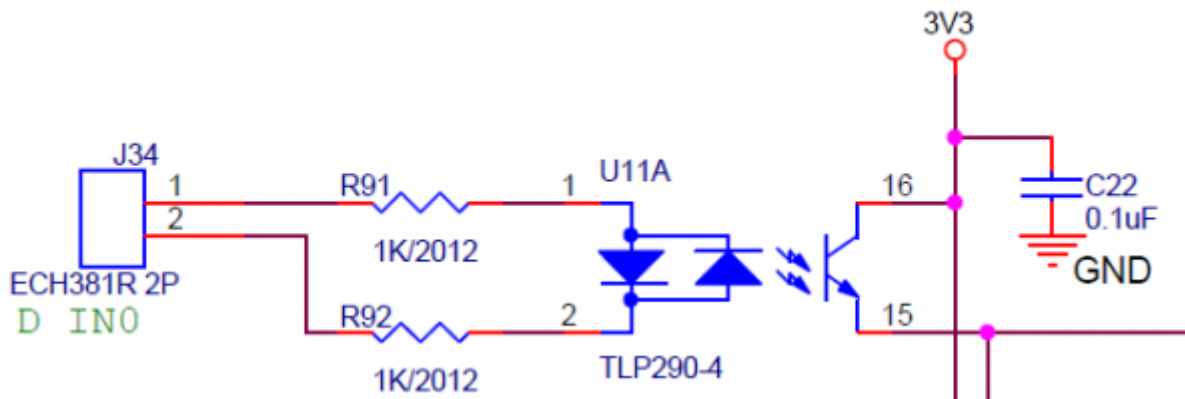
Input value	Relay status value	NC output value	NO output value
0	OFF	Close	Open
1	ON	Open	Close

Output port voltage and current characteristics, see the table below.

NO	5A 28VDC	10A 125VAC	5A 250VAC
NC	3A 28VAC	5A 125VDC	3A 250VDC

### Digital Input Port

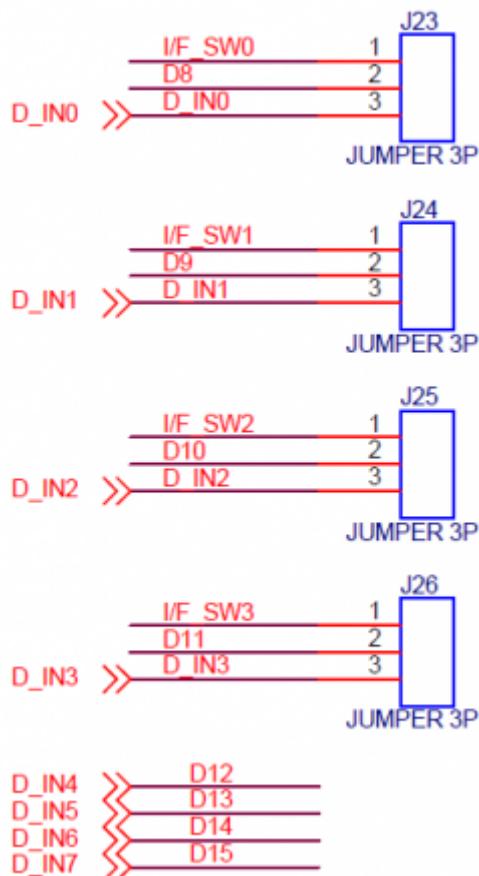
WIZ550web Baseboard has eight (D8 to D15) Photocoupler via a digital input columns. Below is a photo of basic internal circuit. There is no polarity input, and ON/OFF is distinguished from this potential difference between the two input signals.



See the table below for the electrical characteristics of the input.

<b>Under 1.4V</b>	<b>Low</b>
<b>Over 2.1V</b>	<b>High</b>
<b>Max Voltage</b>	<b>24V</b>
<b>Potential difference</b>	<b>No. There are two input signals On/Off by potential difference</b>

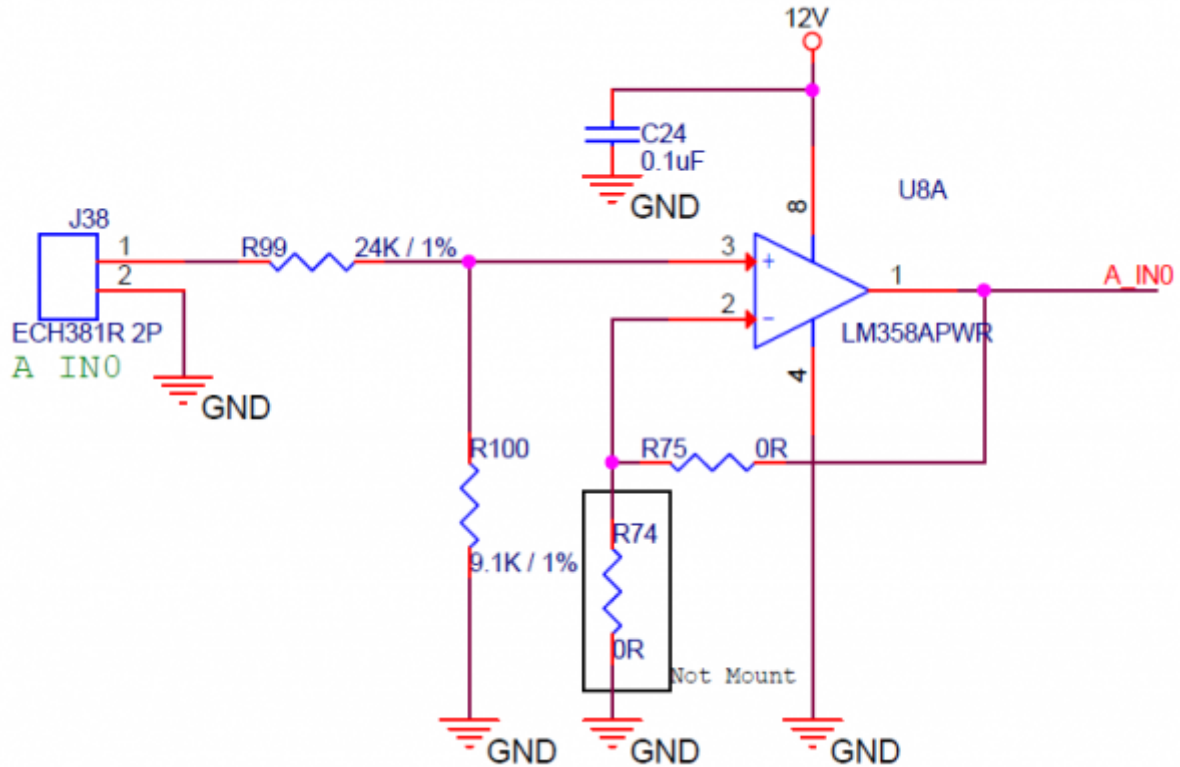
Four (D8-D11) digital inputs are connected as shown in tact switch inside the Baseboard, and these connections have select Jumper J23-J26.



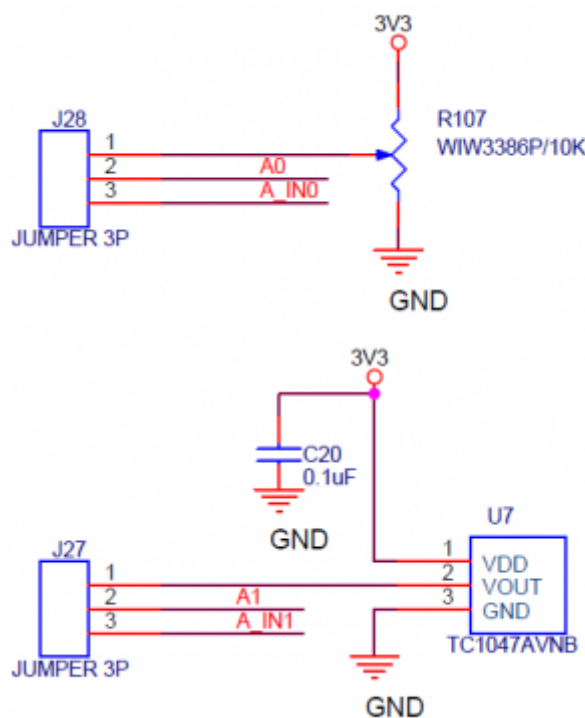


### Analog Input Port

WIZ550web Baseboard has four (A0-A3) analog input columns. Below is a photo of basic internal circuit. It is possible to simply enter 0 to 12V and has entered in the WIZ550WEB through the internal circuitry.



Two of the Analog Input (A0, A1) have connected with a variable resistor (10K) and a temperature sensors (TC1047AVNB) in the Baseboard, this connection can opt to J26, J28 Jumper.



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## AC/DC Characteristics

### WIZ550WEB

#### General Operating Conditions

Symbol	Parameter	Pins	Min	Typ	Max	Unit
<b>VDD</b>	Standard operating voltage	3V3D	2	3.3	3.6	V
<b>VDDA</b>	Analog operation voltage (ADC not used)	3V3A	2.0	3.3	3.6	V
	Analog operation voltage (ADC used)	3V3A	2.4	3.3	3.6	V
<b>VBAT</b>	Backup operating voltage	VBAT	0.8	3.3	3.6	V
<b>VIN</b>	I/O Digital input voltage	D0~D15	0	-	VDD+0.3	V
	I/O Analog input voltage	A0~A3	0	-	VDD+0.3	V
	BOOT0	BOOT0	0	-	5.5	V
	NRST	NRST	0	-	VDD+0.3	V

#### I/O Static Characteristic

Symbol	Parameter	Pins	Min	Typ	Max	Unit
<b>VIL</b>	Low level input voltage	D0~D15	-0.5	-	0.7	V
<b>VIH</b>	High level input voltage	D0~D15	2.0	-	VDD	V
<b>VIO</b>	Output current sunk by any I/O and control pin	D0~D15	-	-	25	mA
	Output current source by any I/O and control pin	D0~D15	-	-	-25	mA
<b>VIL(NRST)</b>	NRST Input low level voltage	NRST	-0.5	-	0.8	V
<b>VIH(NRST)</b>	NRST Input high level voltage	NRST	2	-	3.3	V

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## Reference Schematic & Parts

### Schematic

Part	Version	Schematic
<b>WIZ550web</b>	<b>1.0</b>	<a href="#">wiz550web_v100_140925.pdf</a>
<b>WIZ550web Baseboard</b>	<b>1.0</b>	<a href="#">wiz550web-bb_v100_140925.pdf</a>

### Parts Datasheet

Parts	Description	Datasheet
<b>STM32F103RBT6</b>	ARM 32-bit Cortex™ -M3 CPU Core	<a href="#">STM32F103RBT6</a>
<b>W5500</b>	WIZnet TCP/IP Chip	<a href="#">W5500</a>
<b>AT45DB081D-SU</b>	8-Megabit Serial Flash Memory	<a href="#">AT45DB081D-SU</a>
<b>J1B1211CCD</b>	Transformer + RJ45 + LED, Industrial	<a href="#">J1B1211CCD</a>

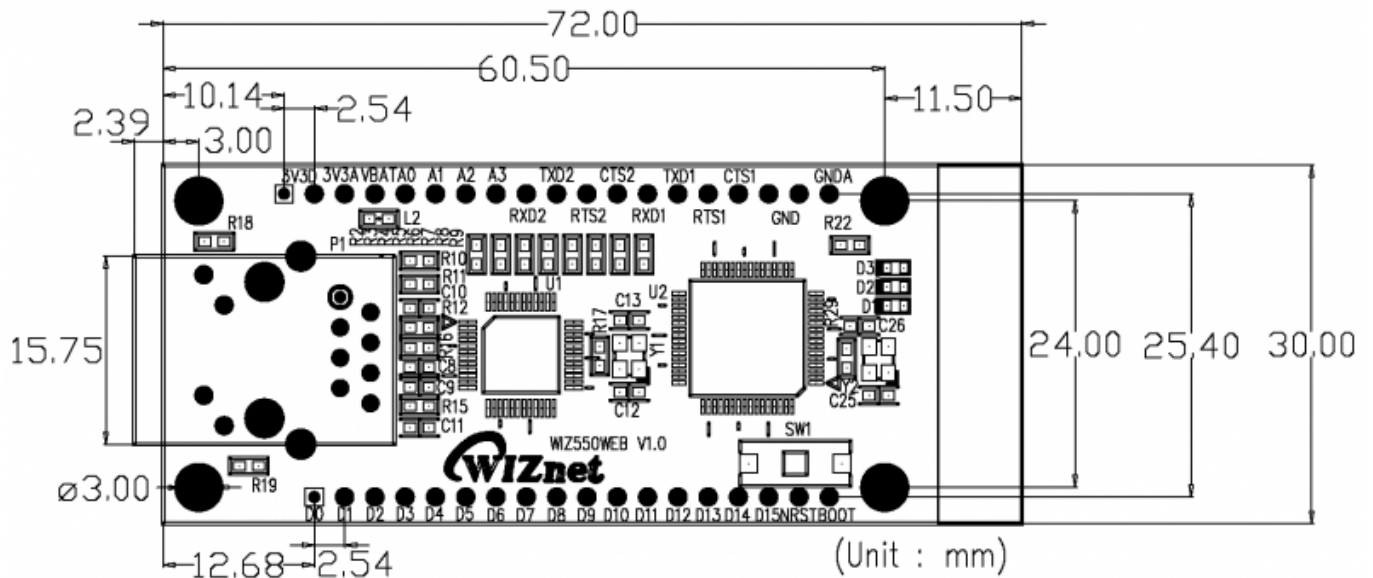
Parts	Description	Datasheet
HR91C-05	1 pole, 3-10A Relay, 1c(SPDT)	<a href="#">HR91C-05</a>
SP3485EN	Low Power Half-Duplex RS-485 Transceivers	<a href="#">SP3485EN</a>
SP3232EBEY	True +3.0V to +5.5V RS-232 Transceivers	<a href="#">SP3232EBEY</a>
TC1047AVNB	Temperature to Voltage Sensor	<a href="#">TC1047AVNB</a>
LM358APWR	Dual Operational Amplifiers	<a href="#">LM358APWR</a>
TLP290-4	4-Channel Transistor-Output Photocouplers	<a href="#">TLP290-4</a>
AOZ1210AI	EZBuck 2A Simple Buck Regulator	<a href="#">AOZ1210AI</a>

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## Dimension

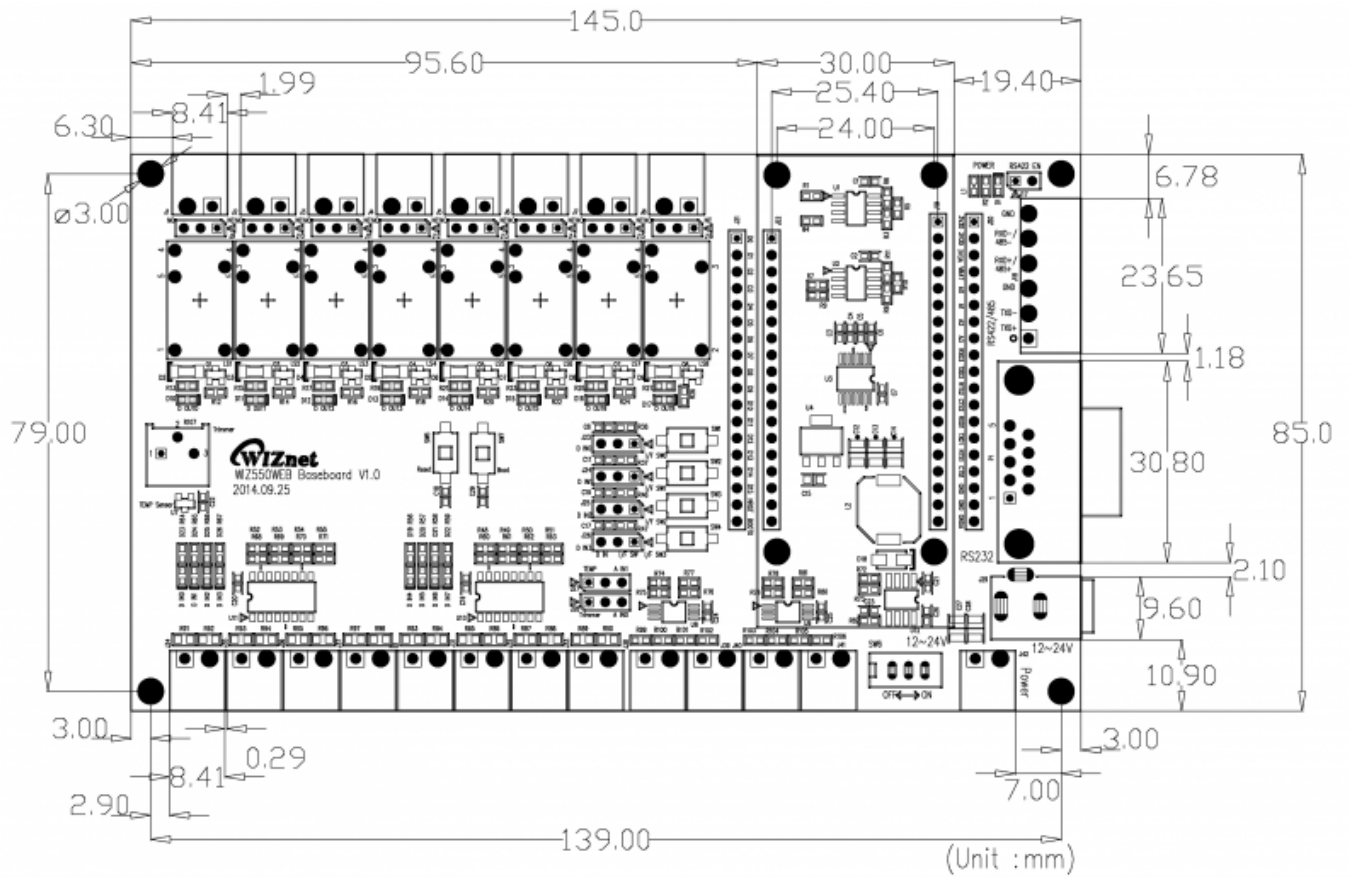
### WIZ550web

74.4mm(W) x 30mm(L) x 24mm(H) (±0.5)



### WIZ550web Baseboard

145mm(W) x 85mm(L) x 28mm(H) (±0.5)



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