DAP8211R Demo Board User Manual

V1.0

1 Brief

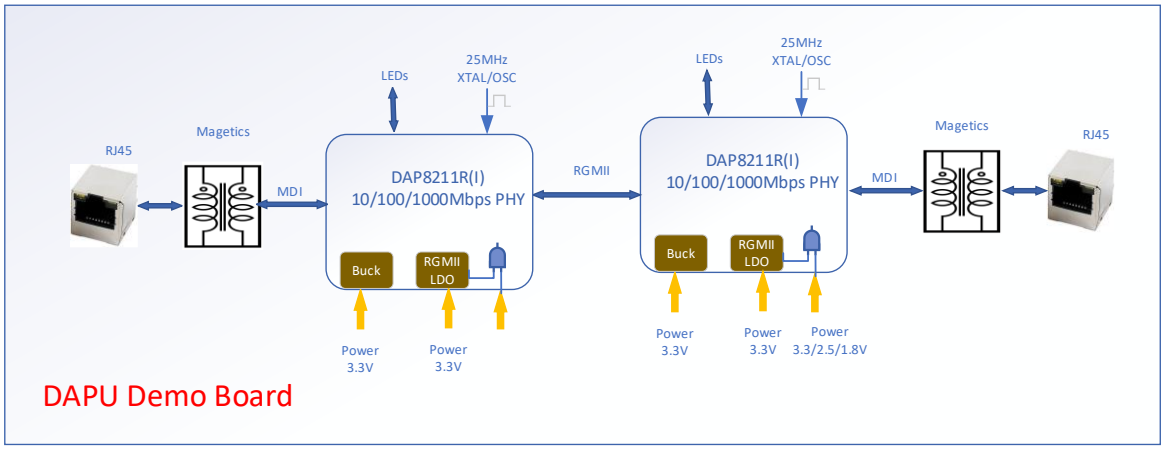
The document is just for：.

- DAP8211R

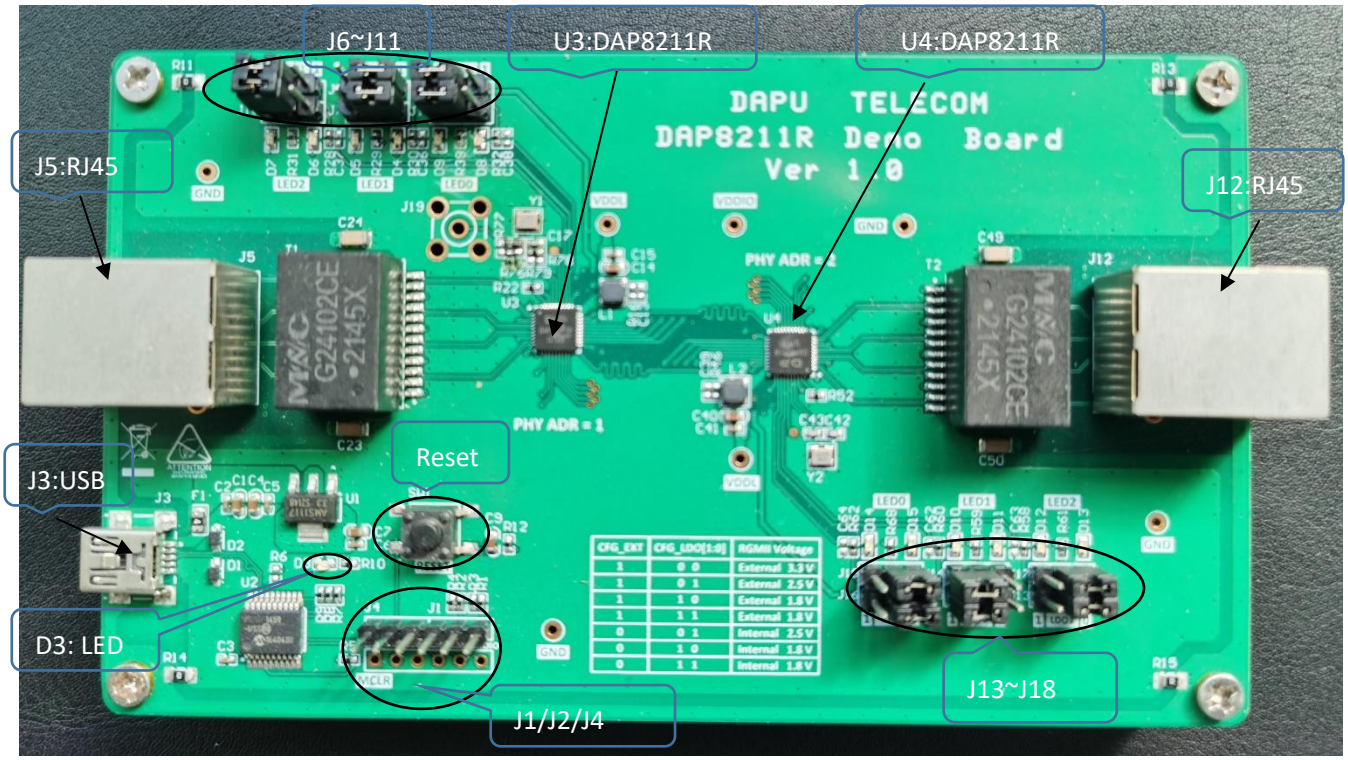
This application manual is for reference only. For specific questions, please consult sales and technical support. DAPU will wholeheartedly provide service and support for you.

2 Abbreviation

3 Hardware Description



This demo board is used for the testing and evaluation of the DAP8211R products. The introduction of each function is as below:



3.1 J3:USB

J3 is the power supply connector and the debug interface between Demo board and PC.
This evaluation board is powered with 5V.

3.2 D3:LED

When the light is on, the evaluation board is powered on.

3.3 Reset

Push the reset button to reset the board including the MCU and PHY devices(DAP8211R).

3.4 J2 Connector

It is the programing connector for MCU.

3.5 U3/U4:DAP8211R

There are two ethernet PHY devices in the board that are connected back-to-back with the MAC interface.
U3: PHY Addr=0x1
U4: PHY Addr=0x2

3.6 J5/J12:RJ45

There are two RJ45 connectors. J5 communicates with U3, and J12 communicates with U4.

3.7 J6~J11/J13~J18: Jumper Connector

The jumpers are works for the hardware configuration.
J6~J11 are configured for U3.

<table>
<tr><th>Item</th><th>Jumper Connector</th><th>Hardware Configuration</th><th>Pin</th><th>Description</th></tr>
<tr><td>1.</td><td>J6</td><td>CFG_LDO[1]</td><td>34</td><td rowspan="3"><table><tr><th>CFG_EXT</th><th>CFG_LDO[1:0]</th><th>RGMII Voltage Selection</th></tr><tr><td>1'b1</td><td>2'b00</td><td>External 3.3V</td></tr><tr><td>1'b1</td><td>2'b01</td><td>External 2.5V</td></tr><tr><td>1'b1</td><td>2'b10</td><td>External 1.8V</td></tr><tr><td>1'b1</td><td>2'b11</td><td>External 1.8V</td></tr><tr><td>1'b0</td><td>2'b01</td><td>Internal 2.5V</td></tr><tr><td>1'b0</td><td>2'b10</td><td>Internal 1.8V</td></tr><tr><td>1'b0</td><td>2'b11</td><td>Internal 1.8V</td></tr></table></td></tr>
<tr><td>2.</td><td>J8</td><td>CFG_LDO[0]</td><td>33</td></tr>
<tr><td>3.</td><td>J9</td><td>CFG_EXT</td><td>32</td></tr>
<tr><td>4.</td><td>J10</td><td>LED2</td><td>34</td><td>1: D6 is selected. D6 is light when LED2 pin is low level
0: D7 is selected. D7 is light when LED2 is high level
Note: Please note the configuration of J6</td></tr>
<tr><td>5.</td><td>J7</td><td>LED1</td><td>33</td><td>1: D4 is selected. D4 is light when LED1 pin is low level
0: D5 is selected. D5 is light when LED1 is high level
Note: Please note the configuration of J8</td></tr>
<tr><td>6.</td><td>J11</td><td>LED0</td><td>32</td><td>1: D8 is selected. D8 is light when LED0 pin is low level
0: D9 is selected. D9 is light when LED0 is high level
Note: Please note the configuration of J9</td></tr>
</table>

J13~J18 are configured for U4.

<table>
<tr><th>Item</th><th>Jumper Connector</th><th>Hardware Configuration</th><th>Pin</th><th>Description</th></tr>
<tr><td>1.</td><td>J13</td><td>CFG_LDO[1]</td><td>34</td><td rowspan="3"><table><tr><th>CFG_EXT</th><th>CFG_LDO[1:0]</th><th>RGMII Voltage Selection</th></tr><tr><td>1'b1</td><td>2'b00</td><td>External 3.3V</td></tr><tr><td>1'b1</td><td>2'b01</td><td>External 2.5V</td></tr><tr><td>1'b1</td><td>2'b10</td><td>External 1.8V</td></tr><tr><td>1'b1</td><td>2'b11</td><td>External 1.8V</td></tr><tr><td>1'b0</td><td>2'b01</td><td>Internal 2.5V</td></tr><tr><td>1'b0</td><td>2'b10</td><td>Internal 1.8V</td></tr><tr><td>1'b0</td><td>2'b11</td><td>Internal 1.8V</td></tr></table></td></tr>
<tr><td>2.</td><td>J15</td><td>CFG_LDO[0]</td><td>33</td></tr>
<tr><td>3.</td><td>J16</td><td>CFG_EXT</td><td>32</td></tr>
<tr><td>4.</td><td>J17</td><td>LED2</td><td>34</td><td>1: D6 is selected. D6 is light when LED2 pin is low level
0: D7 is selected. D7 is light when LED2 is high level
Note: Please note the configuration of J13</td></tr>
<tr><td>5.</td><td>J14</td><td>LED1</td><td>33</td><td>1: D4 is selected. D4 is light when LED1 pin is low level
0: D5 is selected. D5 is light when LED1 is high level
Note: Please note the configuration of J15</td></tr>
<tr><td>6.</td><td>J18</td><td>LED0</td><td>32</td><td>1: D8 is selected. D8 is light when LED0 pin is low level
0: D9 is selected. D9 is light when LED0 is high level
Note: Please note the configuration of J16</td></tr>
</table>

3.8 Test Point

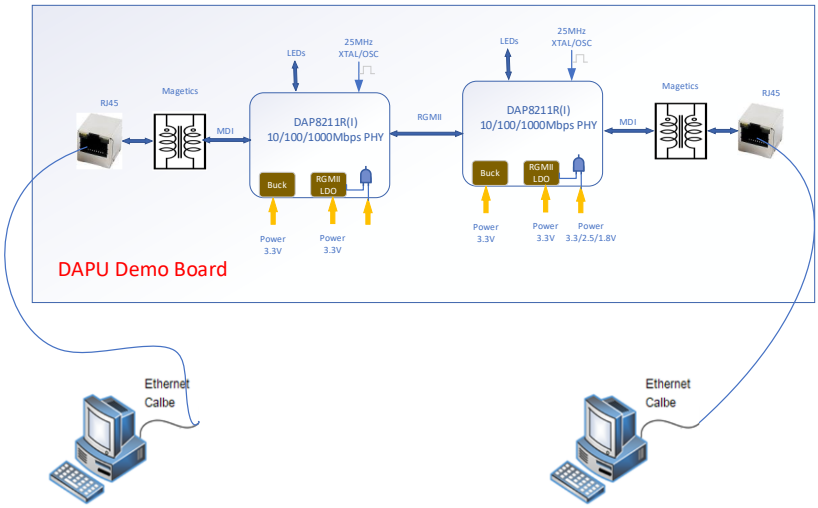
VDDL: The power supply for PHY device core power.

VDDIO: The power supply for PHY device RGMII interface power.

4 User Method

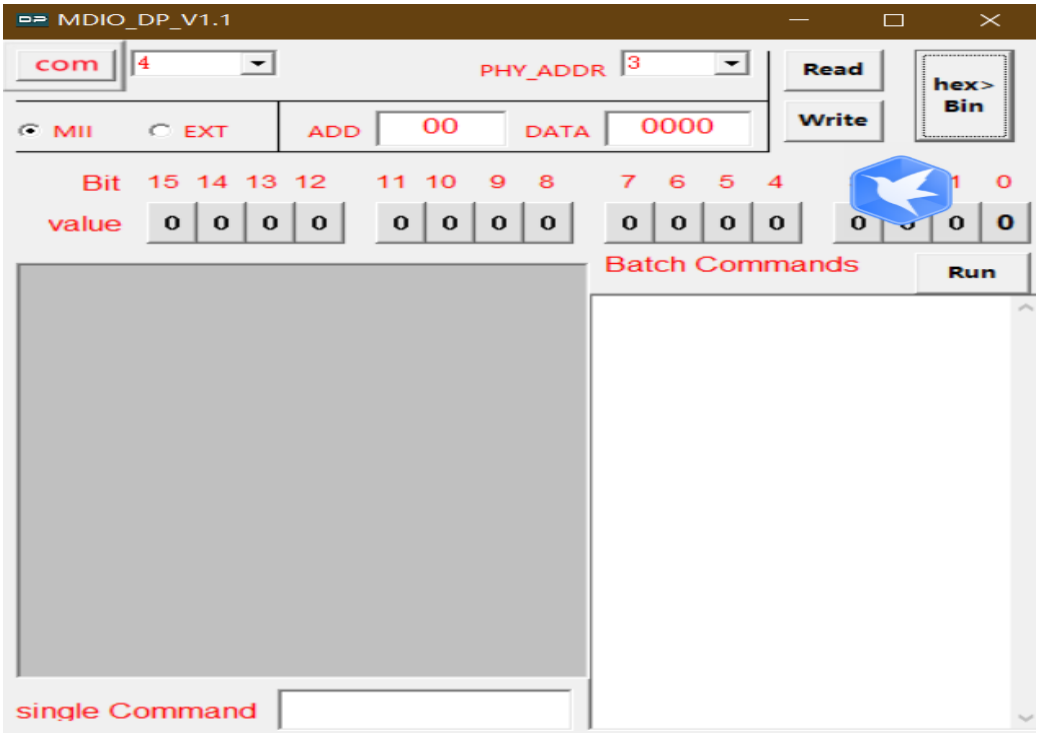
4.1 Test Architecture

This demo board is connected with two ethernet devices through RJ45 connectors, such as two PCs.



4.2 Configuration Method

Mdio_DaPu V1.1



1. com: select the port number
2. phy_Addr: set phy address for MDIO interface
3. Register's Type： mii is basic register； ext is extended register
4. Add: the register's address； Data: the read or write data
5. Read/Write Button: Read/Write the register
6. hex->bin Button: Transfer the register data from hex to bin.
7. Click the value of the bit, it would update the register value in the hex window.
8. Single command: Single-line command execution
9. Batch Commands: Command batch mode, through the Run button to execute

4.3 Command

Item	Command	Description
1.	com n	Select the com
2.	phy n	phy address
3.	r addr	read phy mii reg
4.	w addr data	write phy mii reg
5.	b addr N	set bitN phy mii reg
6.	c addr N	clear bitN phy mii reg
7.	re addr	read phy or comm ext reg
8.	we addr data	write phy or comm ext reg
9.	be addr N	set bitN phy or comm ext reg
10.	ce addr N	clear bitN phy or comm ext reg
11.	h N(hex)	HEX ---->Bin

When GUI reads and writes registers, the interface can select mii, ext register type, code line read and write registers, code commands only distinguish mii or ext, register space needs to be selected by 0xA000 assignment.