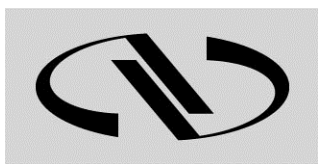
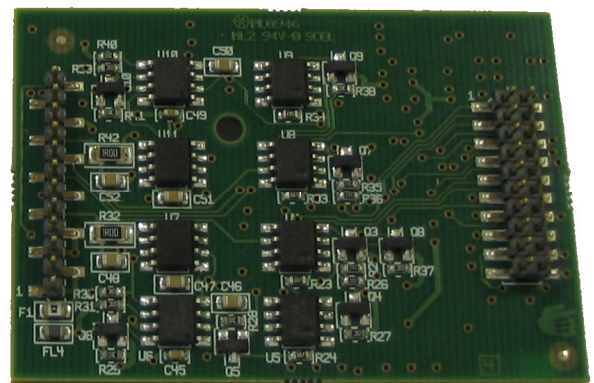
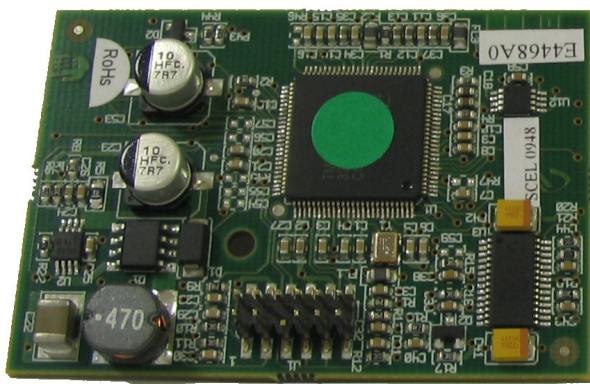


AG-UC2-OEM

Agilis driver with STEP/DIR control



Newport®

Experience | Solutions

Getting started guide
V1.0.1

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1 HARDWARE DESCRIPTION

1.1 BOARD VIEW

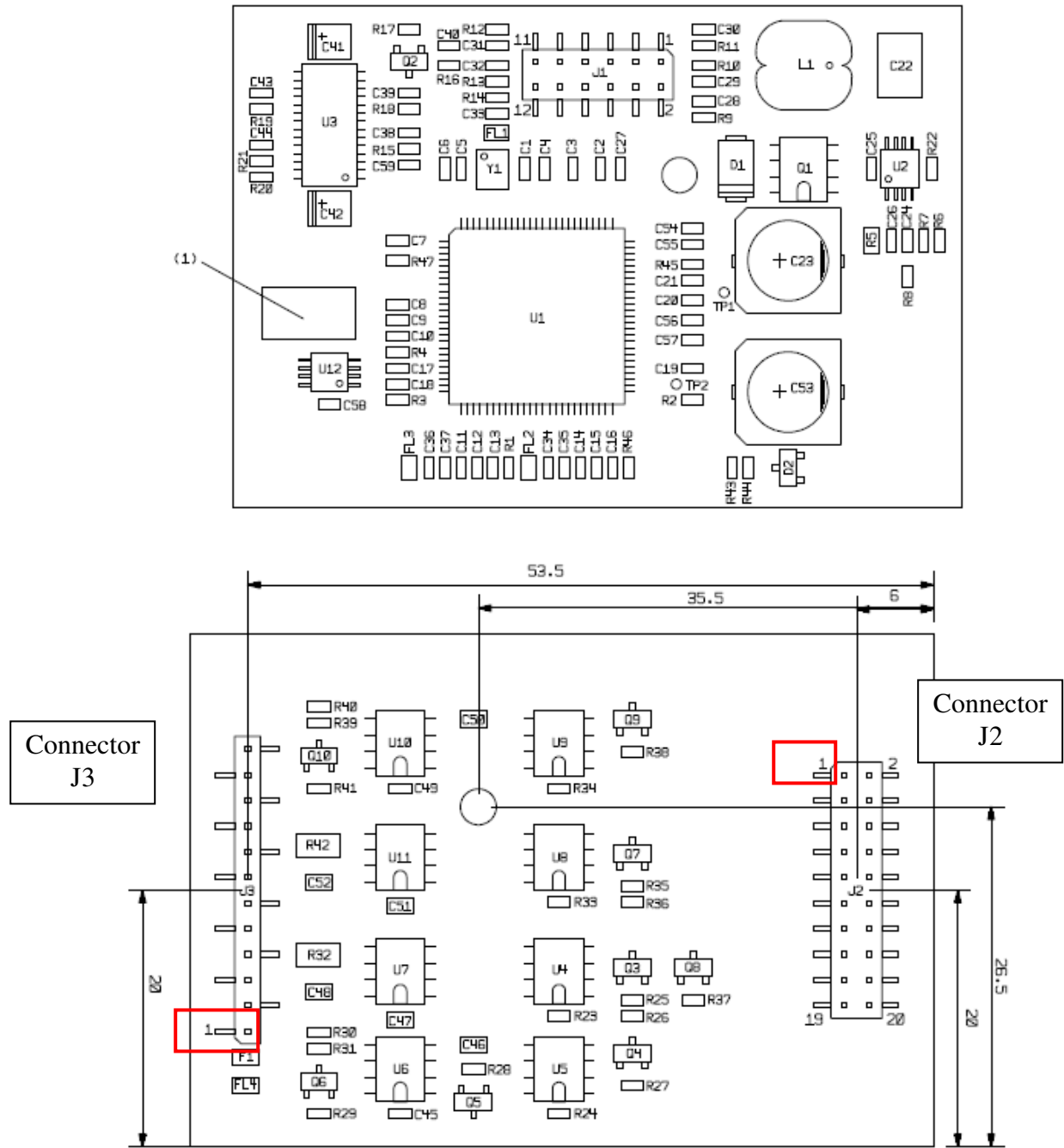


Figure 1: Pins 1 of connectors are highlighted with red boxes.

1.2 CONNECTORS

Two connectors, J2 & J3, are present on the bottom side of the board. The descriptions are given in the tables below. Inputs and outputs are 3.3V rated unless otherwise noted:

Table 1: J3 connector

Pin number	Function	Type
1	+5V	Power
2	+5V	Power
3	Gnd	Power
4	Gnd	Power
5	Piezo-X	Output (35V max)
6	Gnd	Power
7	EOR-X	Input
8	Do not connect	NC
9	Piezo-Y	Output (35V max)
10	Gnd	Power
11	EOR-Y	Input
12	Do not connect	NC

Table 2: J2 connector.

Pin number	Function	Type
1	STEP-Y	Input
2	DIR-Y	Input
3	SIZE3-Y	Input
4	SIZE2-Y	Input
5	SIZE1-Y	Input
6	SIZE0-Y	Input
7	Rx	Input
8	Tx	Output
9	DE	Output
10	Do not connect	NC
11	STEP-X	Input
12	DIR-X	Input
13	SIZE3-X	Input
14	SIZE2-X	Input
15	SIZE1-X	Input
16	SIZE0-X	Input
17	Do not connect	NC
18	Gnd	Power
19	Do not connect	NC
20	Gnd	Power

Outputs (3.3V) can sink or source up to 4mA. For inputs, $V_{IL} = 0.8V$ max, $V_{IH} = 2V$ min.



WARNING

**The digital inputs and outputs are NOT 5V tolerant.
Only connect 3.3V signals.**

Additionally it is recommended that no voltage larger than a diode drop (0.7 V) should be applied to any pin prior to powering up the device. Voltages applied to pins on an unpowered device can bias internal p-n junctions in unintended ways and produce unpredictable results.

2 OPERATING MODES

On AG-UC2-OEM, local mode is used for button-type control of the Agilis stages. On AG-UC2-OEM, the local mode is set when the desired control method is the hardware STEP/DIR/SIZE interface.

STEP/DIR local mode is the default mode when the controller is powered on.

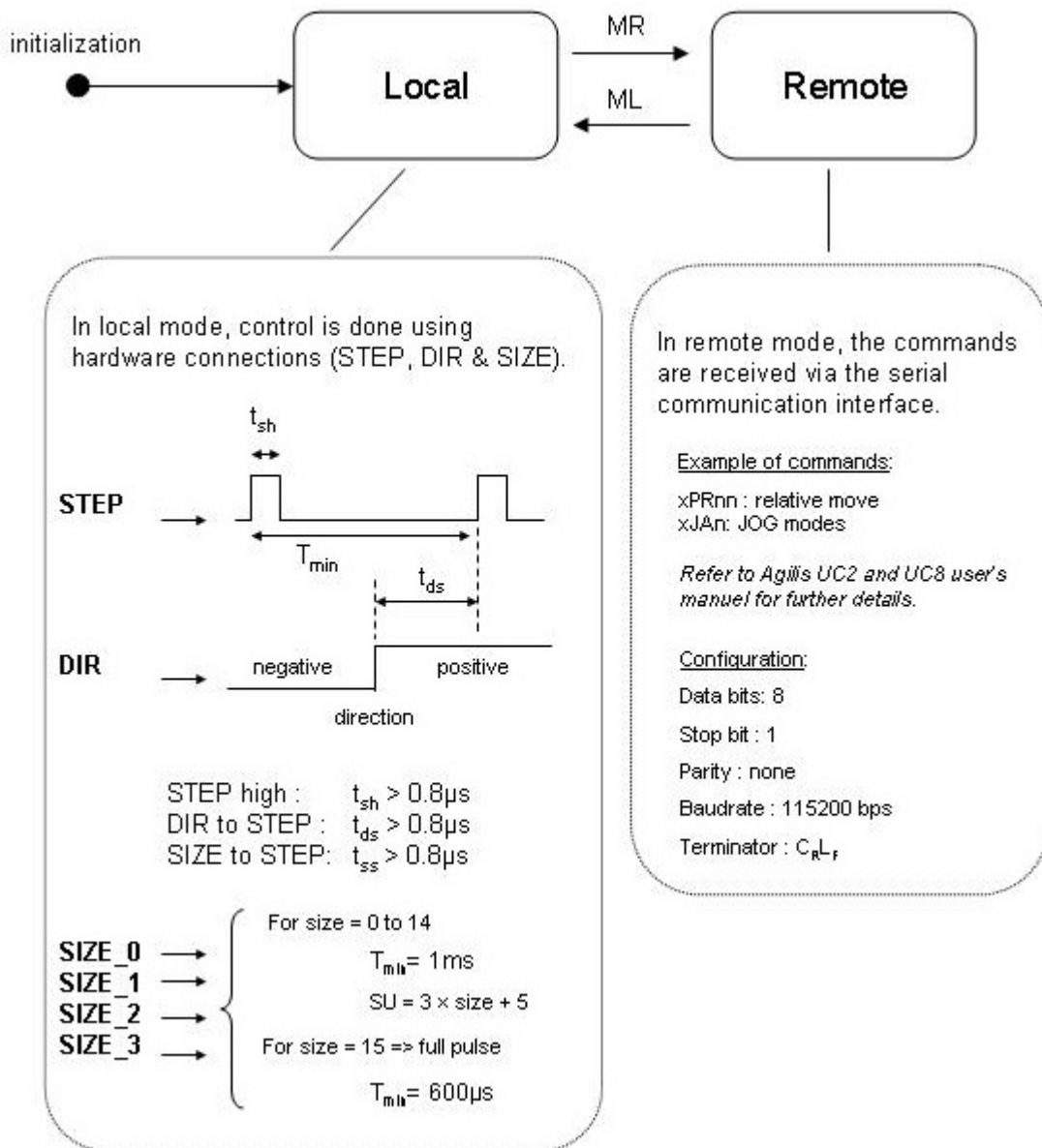


Figure 2: Operating mode details.

Table 3: Pulse size and frequency relation details.

SIZE				Step size (equivalent to SU in remote mode)	Frequency range
SIZE3_X/Y	SIZE2_X/Y	SIZE1_X/Y	SIZE0_X/Y		
0	0	0	0	5	0 to 1000Hz
0	0	0	1	8	0 to 1000Hz
0	0	1	0	11	0 to 1000Hz
0	0	1	1	14	0 to 1000Hz
0	1	0	0	17	0 to 1000Hz
0	1	0	1	20	0 to 1000Hz
0	1	1	0	23	0 to 1000Hz
0	1	1	1	26	0 to 1000Hz
1	0	0	0	29	0 to 1000Hz
1	0	0	1	32	0 to 1000Hz
1	0	1	0	35	0 to 1000Hz
1	0	1	1	38	0 to 1000Hz
1	1	0	0	41	0 to 1000Hz
1	1	0	1	44	0 to 1000Hz
1	1	1	0	47	0 to 1000Hz
1	1	1	1	50	0 to 1700Hz

3 POWER REQUIREMENTS

The AG-UC2-OEM controller requires a 5V power supply capable of delivering 500mA.



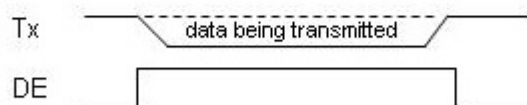
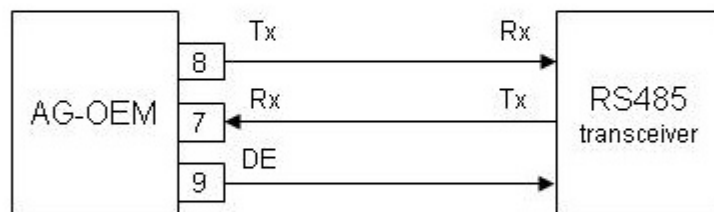
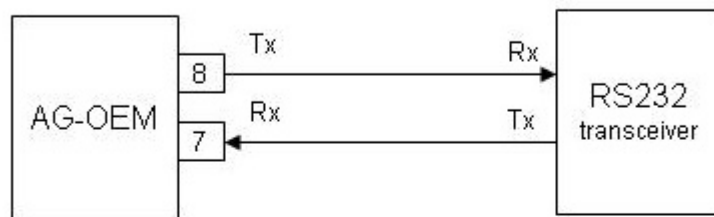
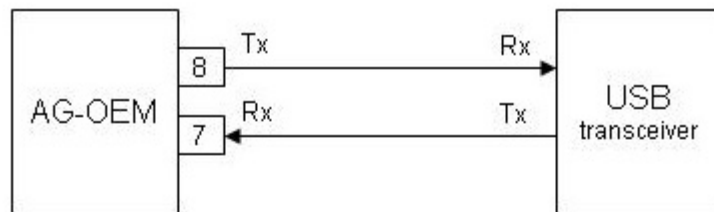
CAUTION

Observe precautions for handling electrostatic discharge sensitive devices.


4 EXAMPLES OF SERIAL COMMUNICATION INTERFACING

Communication parameters are preset in the AG-UC2-OEM controller and do not require any configuration:

Bits per second	115200
Data bits	8
Parity	None
Stop bits	1
Flow control	DE (see below for usage example)
Terminator	C _R L _F

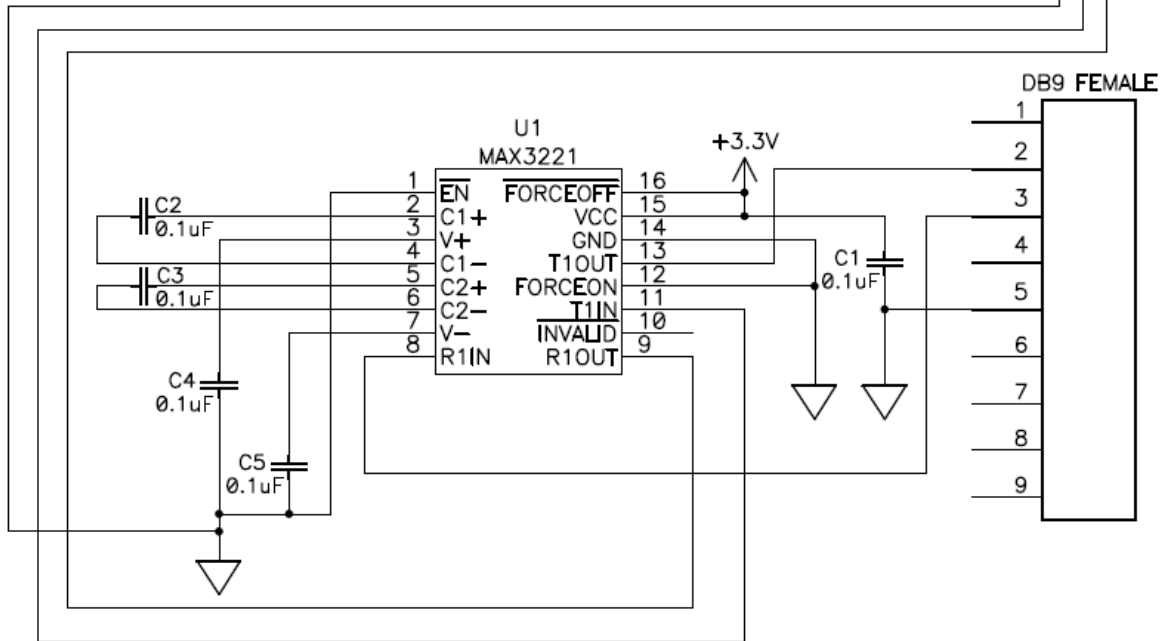
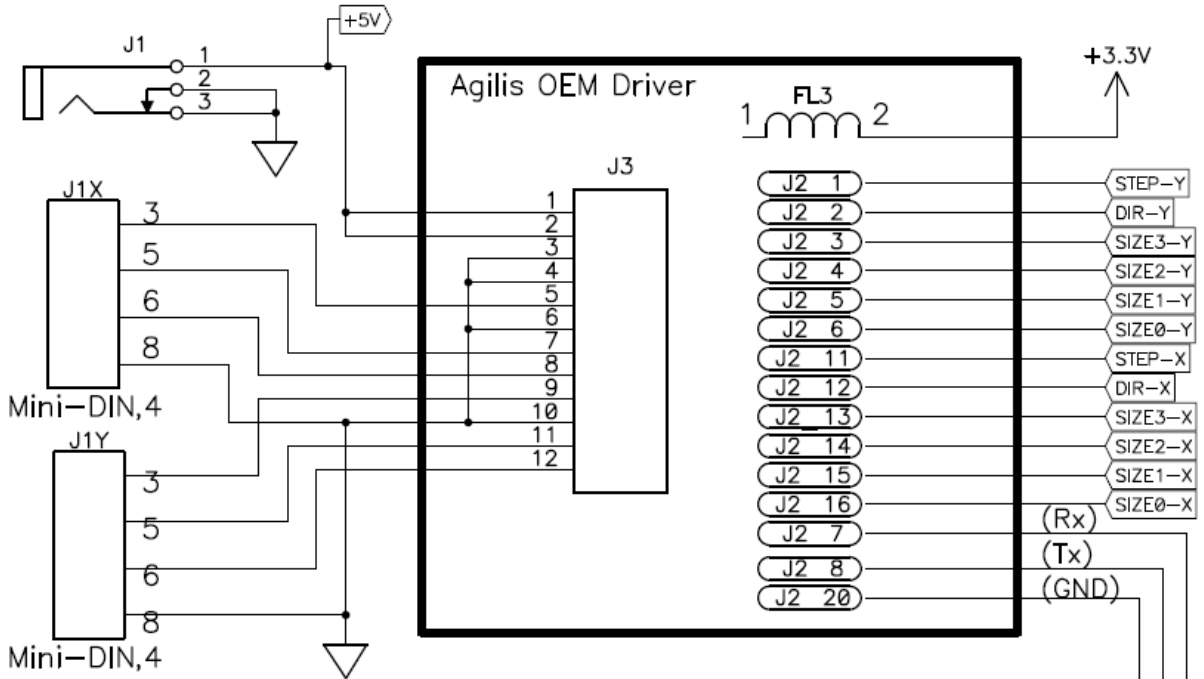



DE goes high when data is being transmitted by the AG-OEM controller.



WARNING
The digital inputs are NOT 5V tolerant.
Only connect 3.3V signals.

EXAMPLES OF SERIAL COMMUNICATION INTERFACING (continued)





WARNING
 The digital inputs are NOT 5V tolerant.
 Only connect 3.3V signals.