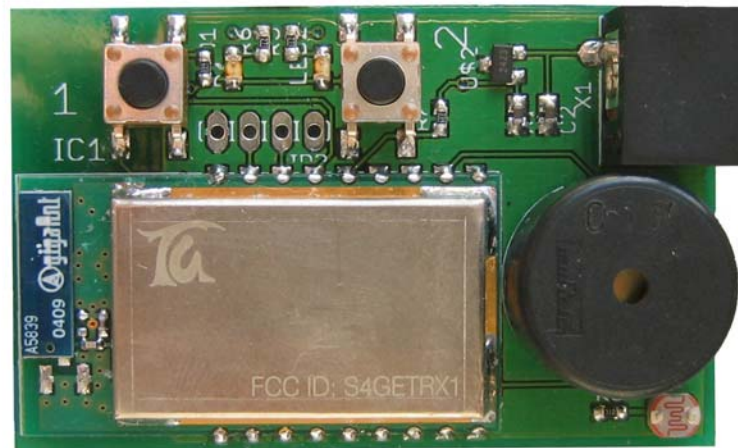


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| Telegesis |  | TG-ETRX1MCB-TM-01-100 | 1 |
| ETRX1 Module Carrier Board | | Technical Manual | 1.00 |

TG-ETRX1MCB-TM-01-100

ETRX1MCB - ZIGBEE READY MODULE CARRIER BOARD TECHNICAL MANUAL



Telegesis

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|----------------------------|---|-----------------------|------|
| Telegesis |  | TG-ETRX1MCB-TM-01-100 | 2 |
| ETRX1 Module Carrier Board | | Technical Manual | 1.00 |

Table of Contents

| | | |
|----|--|---|
| 1. | ABSOLUTE MAXIMUM RATINGS | 3 |
| 2. | OPERATING CONDITIONS | 3 |
| 3. | ELECTRICAL SPECIFICATIONS | 3 |
| 4. | FUNCTIONAL DESCRIPTION | 4 |
| 5. | SCHEMATIC | 6 |
| 6 | ORDERING INFORMATION | 7 |
| 7 | TRADEMARKS | 7 |
| 8 | DISCLAIMER | 7 |
| 9 | CONTACT INFORMATION | 7 |

| | | | |
|----------------------------|---|-----------------------|------|
| Telegesis |  | TG-ETRX1MCB-TM-01-100 | 3 |
| ETRX1 Module Carrier Board | | Technical Manual | 1.00 |

1. Absolute Maximum Ratings

| Parameter | Min. | Max. | Units | Condition |
|---------------------------|------|------|-------|-----------|
| Supply Voltage Vdd | -0.3 | 12 | V | |
| Voltage on any I/O pin | -0.3 | 3.6 | V | |
| Storage Temperature range | -50 | 150 | °C | |

Table 1: Absolute Maximum Ratings

The absolute maximum ratings given above should under no circumstances be violated. Stress exceeding one or more of the limiting values may cause permanent damage to the device.



Caution! ESD sensitive device. Precautions should be used when handling the device in order to prevent permanent damage.

2. Operating Conditions

Typical values at 6V 25°C.

| Parameter | Min. | Typ. | Max. | Units | Condition |
|-------------------------------------|------|------|------|-------|-----------|
| Supply Voltage, Vdd | 4 | 6 | 12 | V | |
| Supply Current | | | 38 | mA | TX 3dBm |
| Operating ambient temperature range | -40 | 25 | 85 | °C | |

Table 2: Operating Conditions

3. Electrical Specifications

See ETRX1 module Electrical Specifications

| | | | |
|----------------------------|---|-----------------------|------|
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4. Functional Description

The ETRX1 module carrier board has been designed to quickly set-up a wireless meshing network without having to integrate ETRX1 modules into prototypes of any kind.

The module carrier board hosts the following components:

ETRX1

The ETRX1 wireless meshing module is surface-mounted onto the module carrier board permanently.

Voltage Regulator

The on board voltage regulator is capable of providing a regulated output of 3.3 volts from any power source with more than 4 Volts connected to the power connector. The centre pin of the connector must be connected to Vcc and the outside should be connected to ground as there is no protection against reversed polarity. When using the battery holder included and 4 x AA batteries, whilst the module is in Full Function Mode and fully awake the average battery life will be 2-3 days. In Reduced Function Mode with the module mostly asleep, a battery life of a couple of years can be achieved.

LEDs

There are two LEDs connected to the I/O of the ETRX1 wireless meshing module as shown in Table 1.

Pushbuttons

Also there are two pushbuttons connected to the I/O of the ETRX1 wireless meshing module also shown in Table 1.

| Pin | MCB functionality |
|------|-------------------|
| I/O0 | Button2 |
| I/O1 | Button1 |
| I/O2 | not connected |
| I/O3 | Sounder |
| I/O4 | not connected |
| I/O5 | LED3 |
| I/O6 | not connected |
| I/O7 | LED1 |
| A/D1 | Light sensor |
| A/D2 | not connected |

Table 1: I/O Connectivity

| | | | |
|----------------------------|---|-----------------------|------|
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| ETRX1 Module Carrier Board | | Technical Manual | 1.00 |

Sounder

The sounder is connected to the PWM capable I/O of the ETRX1. As with the Development Board (ETRX1DV) the sounder will play a tune upon receiving the "AT+IDENT" command. This is particularly useful when identifying individual nodes.

Light Sensor

A/D1 is connected to a light sensor to allow the remote reading of the light level.

Serial Connection

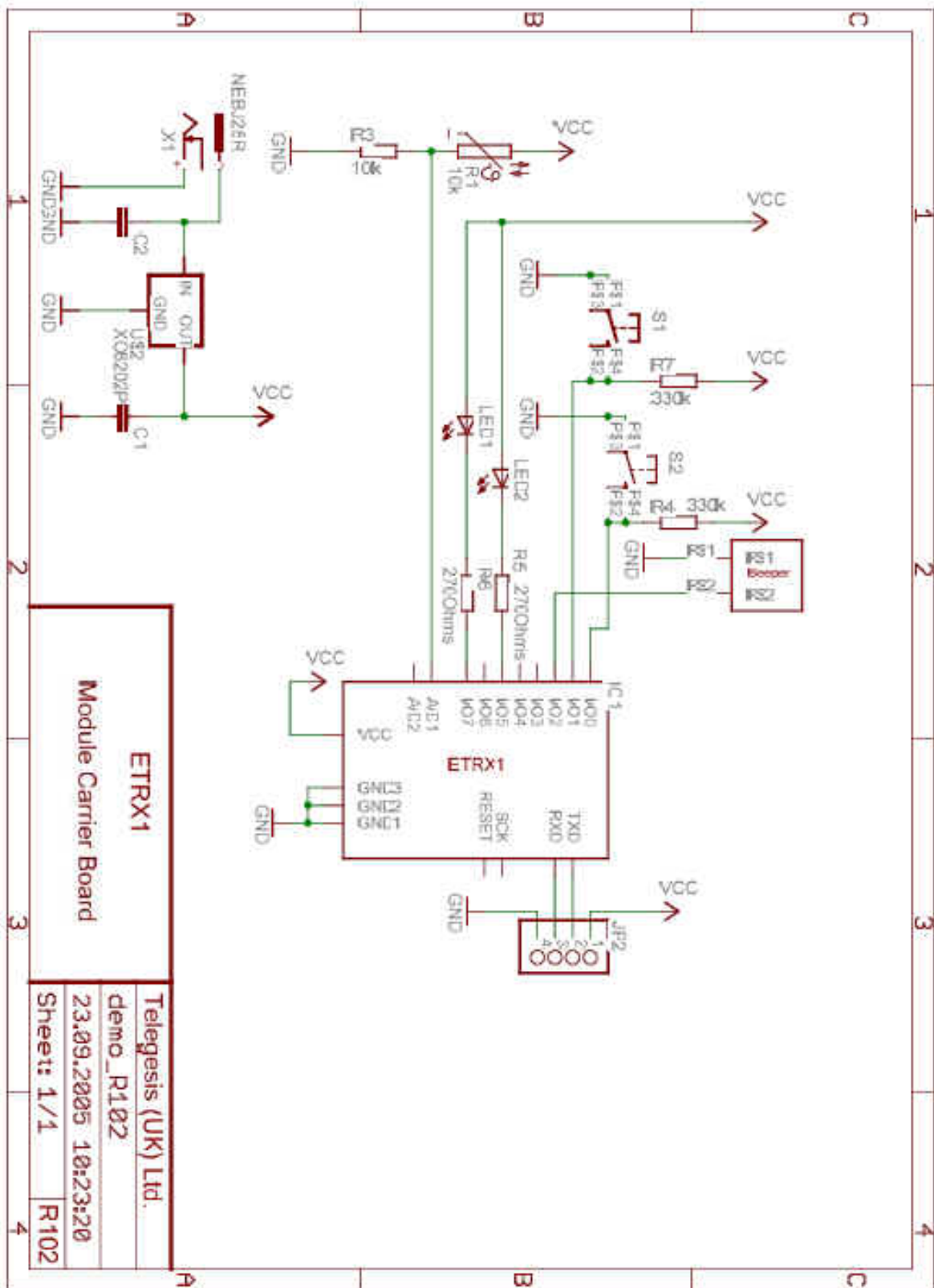
It is not possible to connect the module carrier board straight to a PC's serial port as no level conversion is present, however it is possible to access these lines as well as the supply lines via the 4 pads labeled JP2 (described in Table 2.)

| Pin | JP2 functionality |
|-----|-------------------|
| 1 | Vcc |
| 2 | TXD (output) |
| 3 | RXD (input) |
| 4 | GND |

Table 2: Serial Connectivity

| | | | |
|----------------------------|---|-----------------------|------|
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5. Schematic



| | | | |
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| Telegesis |  | TG-ETRX1MCB-TM-01-100 | 7 |
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6 Ordering Information

| Product Code | Description |
|--------------|--------------------------------------|
| ETRX1MCB | ETRX1 Module on Module Carrier Board |

Table 3: Ordering Information

7 Trademarks

All trademarks, registered trademarks and products names are the sole property of their respective owners.

8 Disclaimer

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