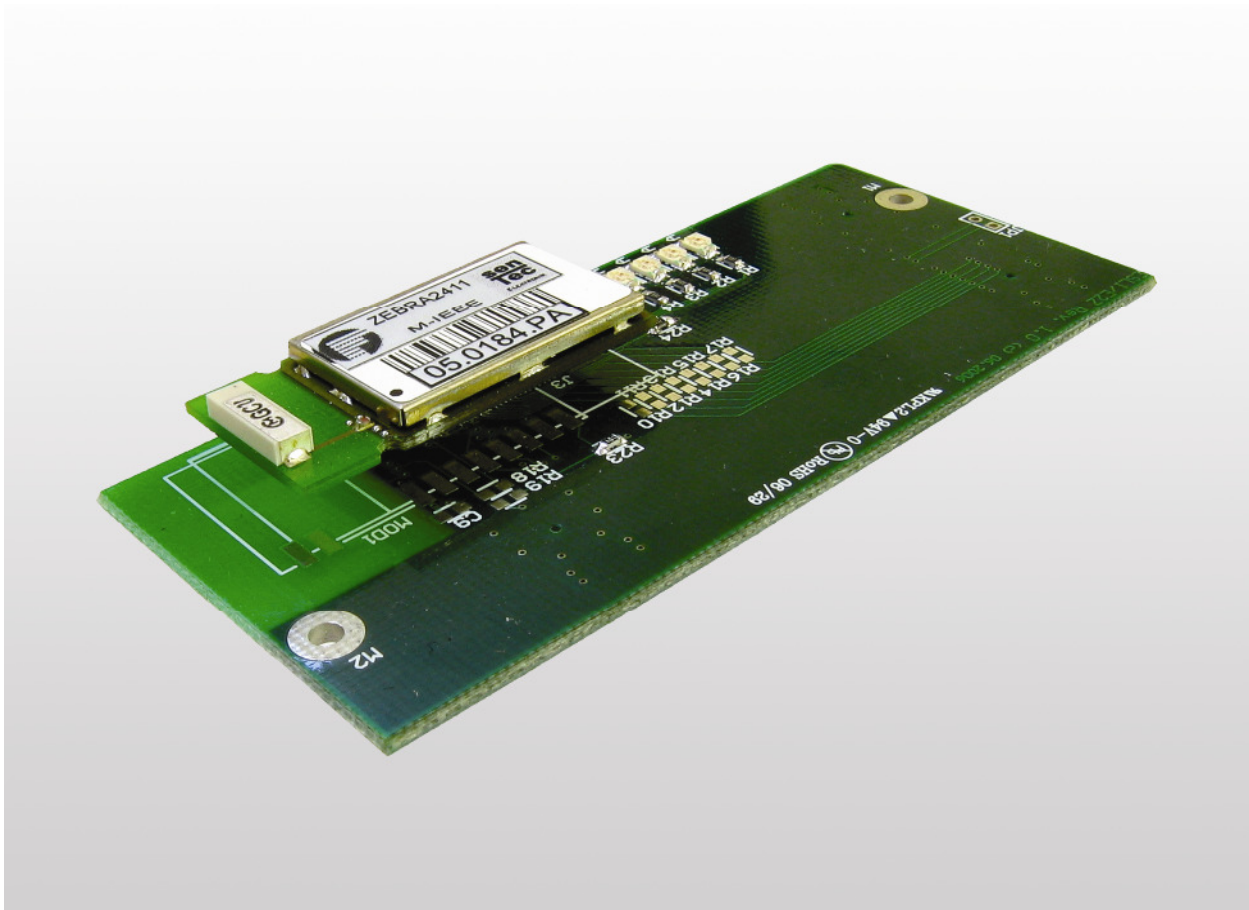


E2Z/ESL1

Board Revision 1.0

Hardware Reference



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1 INTRODUCTION

This document describes the hardware components of the E2Z/ESL1. For further information about the individual components of this product you may follow the links from our website at <http://www.dilnetpc.com>. Our website contains a lot of technical information, which will be updated in regular periods.

1.1 Safety Guidelines

Please read the following safety guidelines carefully! In case of property or personal damage by not paying attention to this document and/or by incorrect handling, we do not assume liability. In such cases any warranty claim expires.



ATTENTION: Observe precautions for handling – electrostatic sensitive device!

- Discharge yourself before you work with the device, e.g. by touching a heater of metal, to avoid damages.
- Stay grounded while working with the device to avoid damage through electrostatic discharge.

1.2 Block Diagram

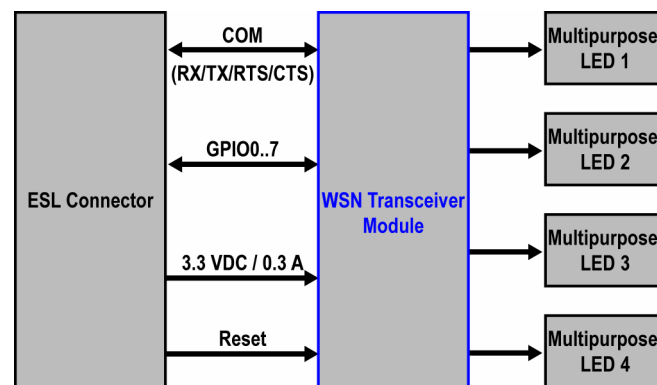


Figure 1: Block diagram of E2Z/ESL1

1.3 Feature Overview

- One 80-pin ESL connector
- One WSN (Wireless Sensor Network) transceiver module with Freescale HCS08 base band controller and Freescale MC13193 RF front end
- IEEE 802.15.4 data transfer mechanism compatible
- 2.4 GHz frequency band: 2.4000 – 2.4835 GHz
- 16 channels with 5 MHz spacing (not overlapping)
- RF output power max. 15 dBm (30 mW)
- Receive sensitivity -97 dB (typical)
- Data rate up to 250 kbps
- DSSS (Direct Sequence Spread Spectrum)
- Security and data encryption
- Four green multipurpose LEDs driven by the WSN transceiver module
- Freescale ZigBee™ network stack available

Please note: To implement a true ZigBee™ application, it is necessary to obtain a license for the ZigBee™ software stack and the appropriate compiler.

1.4 Mounting the WSN Transceiver Module

Mount the WSN transceiver module on the E2Z/ESL1 in the same direction like shown in **figure 2**.

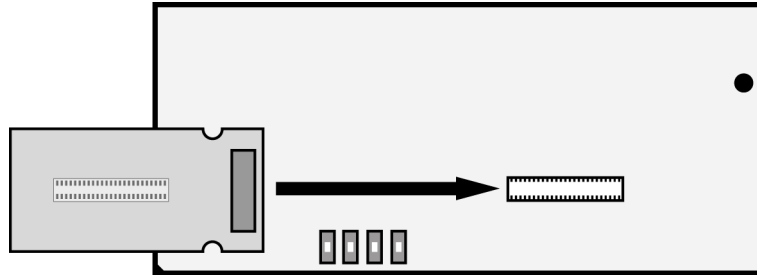
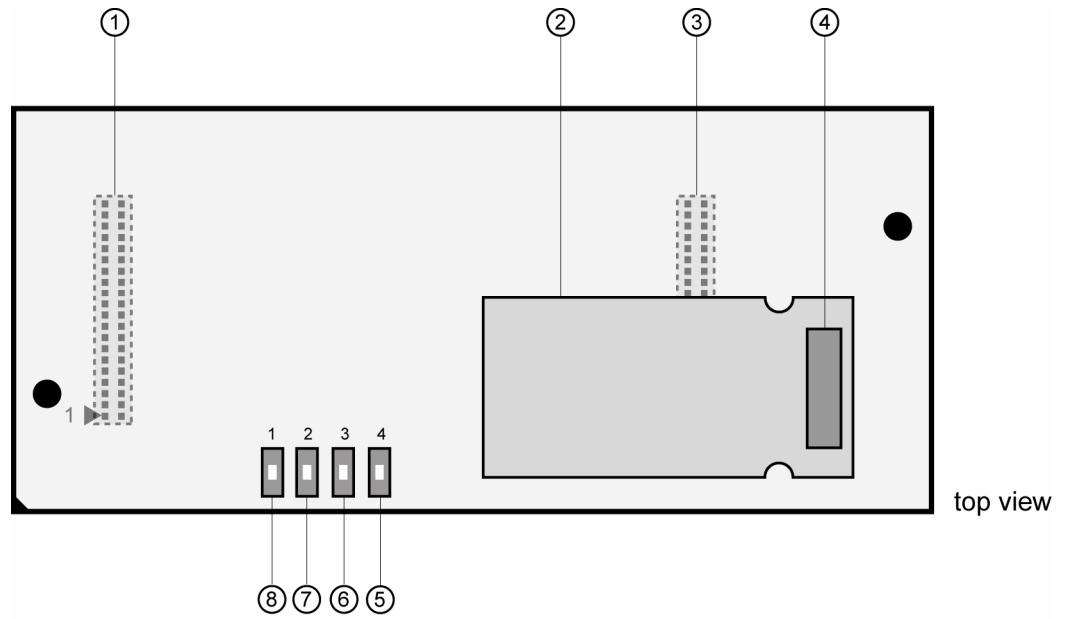


Figure 2: Mounting the WSN transceiver module on the E2Z/ESL1

2 BOARD LAYOUT



- ① J1 - 80-pin ESL connector 1 (bottom side)
- ② J3 - WSN transceiver module
- ③ J2 - 80-pin ESL connector 2 (bottom side)
- ④ WSN transceiver module antenna

- ⑤ D4 - Multipurpose LED 4
- ⑥ D3 - Multipurpose LED 3
- ⑦ D2 - Multipurpose LED 2
- ⑧ D1 - Multipurpose LED 1

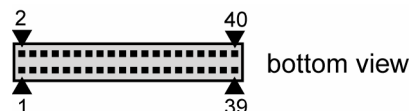
Figure 3: Board layout E2Z/ESL1

3 PINOUTS

3.1 80-pin ESL Connector (1. Part)

Pin	Name	Function
1	VCC	3.3 Volt Power Input
2	GND	Ground
3	Reserved	Reserved – Do not use
4	Reserved	Reserved – Do not use
5	Reserved	Reserved – Do not use
6	Reserved	Reserved – Do not use
7	VCC	3.3 Volt Power Input
8	GND	Ground
9	Reserved	Reserved – Do not use
10	Reserved	Reserved – Do not use
11	Reserved	Reserved – Do not use
12	Reserved	Reserved – Do not use
13	Reserved	Reserved – Do not use
14	Reserved	Reserved – Do not use
15	Reserved	Reserved – Do not use
16	Reserved	Reserved – Do not use
17	GND	Ground
18	VCC	3.3 Volt Power Input
19	Reserved	Reserved – Do not use
20	RTS	Serial Port, RTS Pin
21	Reserved	Reserved – Do not use
22	TXD	Serial Port, TXD Pin
23	Reserved	Reserved – Do not use
24	RXD	Serial Port, RXD Pin
25	Reserved	Reserved – Do not use
26	CTS	Serial Port, CTS Pin
27	GND	Ground
28	VCC	3.3 Volt Power Input
29	Reserved	Reserved – Do not use
30	Reserved	Reserved – Do not use
31	Reserved	Reserved – Do not use
32	Reserved	Reserved – Do not use
33	Reserved	Reserved – Do not use
34	Reserved	Reserved – Do not use
35	Reserved	Reserved – Do not use
36	Reserved	Reserved – Do not use
37	GND	Ground
38	GND	Ground
39	VCC	3.3 Volt Power Input
40	VCC	3.3 Volt Power Input

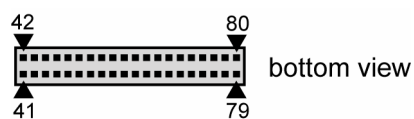
Table 1: 80-pin ESL connector pinout – pin 1 to 40



3.2 80-pin ESL Connector (2. Part)

Pin	Name	Function
41	VCC	3.3 Volt Power Input
42	VCC	3.3 Volt Power Input
43	GND	Ground
44	GND	Ground
45	Reserved	Reserved – Do not use
46	Reserved	Reserved – Do not use
47	Reserved	Reserved – Do not use
48	Reserved	Reserved – Do not use
49	GND	Ground
50	GND	Ground
51	Reserved	Reserved – Do not use
52	RESET#	Reset Input Pin
53	VCC	3.3 Volt Power Input
54	GND	Ground
55	Reserved	Reserved – Do not use
56	Reserved	Reserved – Do not use
57	Reserved	Reserved – Do not use
58	Reserved	Reserved – Do not use
59	Reserved	Reserved – Do not use
60	Reserved	Reserved – Do not use
61	Reserved	Reserved – Do not use
62	Reserved	Reserved – Do not use
63	VCC	3.3 Volt Power Input
64	GND	Ground
65	Reserved	Reserved – Do not use
66	Reserved	Reserved – Do not use
67	Reserved	Reserved – Do not use
68	Reserved	Reserved – Do not use
69	Reserved	Reserved – Do not use
70	Reserved	Reserved – Do not use
71	Reserved	Reserved – Do not use
72	Reserved	Reserved – Do not use
73	GND	Ground
74	VCC	3.3 Volt Power Input
75	Reserved	Reserved – Do not use
76	Reserved	Reserved – Do not use
77	Reserved	Reserved – Do not use
78	Reserved	Reserved – Do not use
79	GND	Ground
80	VCC	3.3 Volt Power Input

Table 2: 80-pin ESL connector pinout – pin 41 to 80



4 MECHANICAL DIMENSIONS

All length dimensions have a tolerance of 0.5 mm. The drillings are suitable for M2.2 screws.

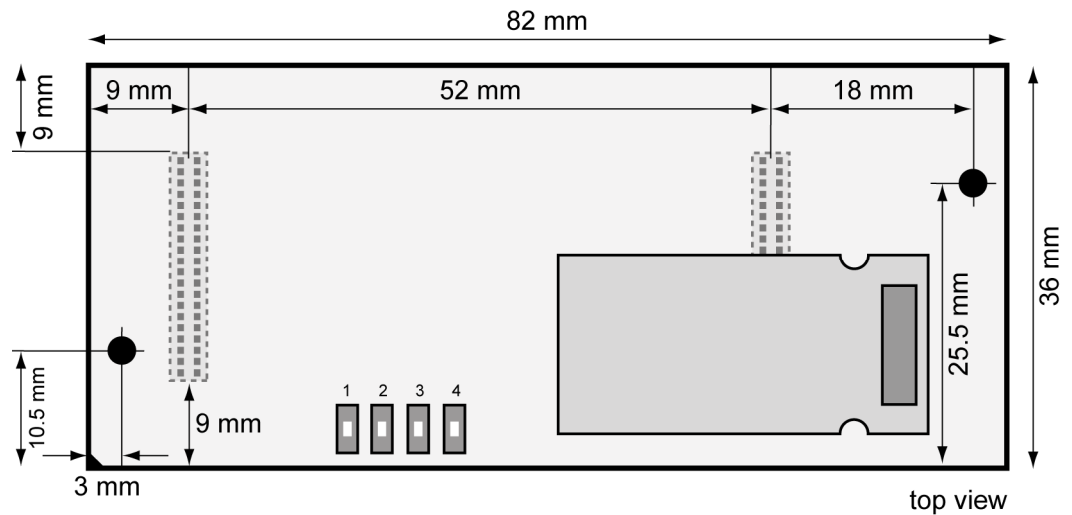


Figure 4: Mechanical dimensions of E2Z/ESL1

ESL connector specifications:

2 x 40-pin Samtec FTMH-120-03-F-DV-ES connectors (18 mm x 5 mm)

CONTACT

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For actual information about the E2Z/ESL1 visit us in the internet:
<http://www.dilnetpc.com>.

DOCUMENT HISTORY

Revision	Date	Remarks	Name
1.0	2006-10-10	first version	WBU

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