

DP TECHNICS

OpenWRT Embedded module

Datasheet

1 General information

The Oolite OpenWRT module is a general purpose embedded system with integrated 2.4GHz 802.11n WiFi. This module is targeted for hobby and semi-professional applications in need of a powerfull embedded linux platform. OpenWRT is installed by default and the module is compatible with the AR9331 trunk versions of this software.

2 Features

The OpenWRT Embedded module has a typical power consumption of 0.36W@3.3V and contains a number of features:

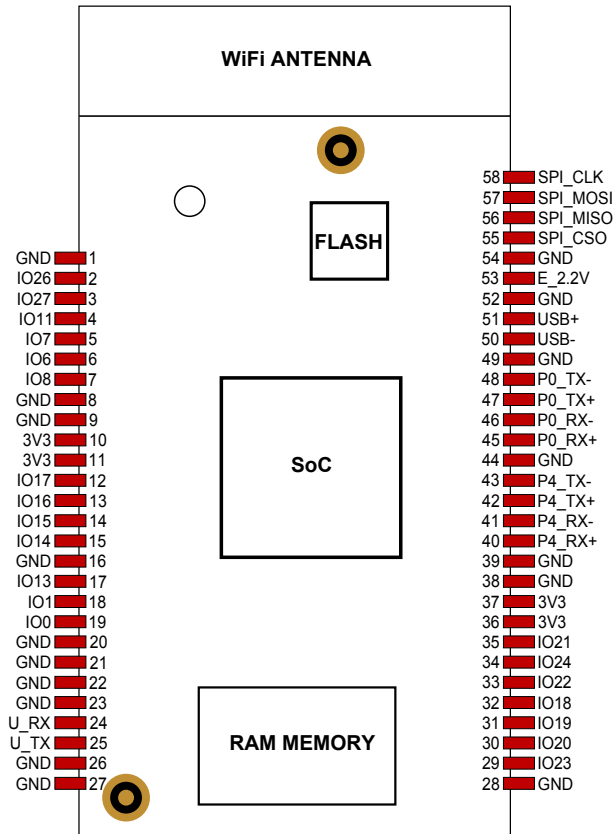
- CPU: AR9331 400MHz SoC - MIPS24Kc CPU
- RAM: 64MiB (512Mbit) DDR2
- Flash: 16MiB Flash memory
- WiFi: 150Mbps WiFi g/n with on-board antenna
- USB 2.0 master interface
- 20 GPIO pins
- 2 times 100Mbps ethernet ports
- UART interface
- SPI interface

3 Absolute maximum ratings

For the most reliable use and stability of the module we advice to use the typical ratings. We do not guarantee the correct functioning of the device outside the minimum and maxium range of the module.

Parameter	Units	Minimum rating	Typical rating	Maxium rating
DC Supply Voltage	V	3.0	3.3	3.6
Digital I/O Voltage	V	1.5	3.3	3.6
Current	A	0.09	0.110	0.300
Network transformer voltage	V	1.9	2.2	2.3

4 Pin diagram



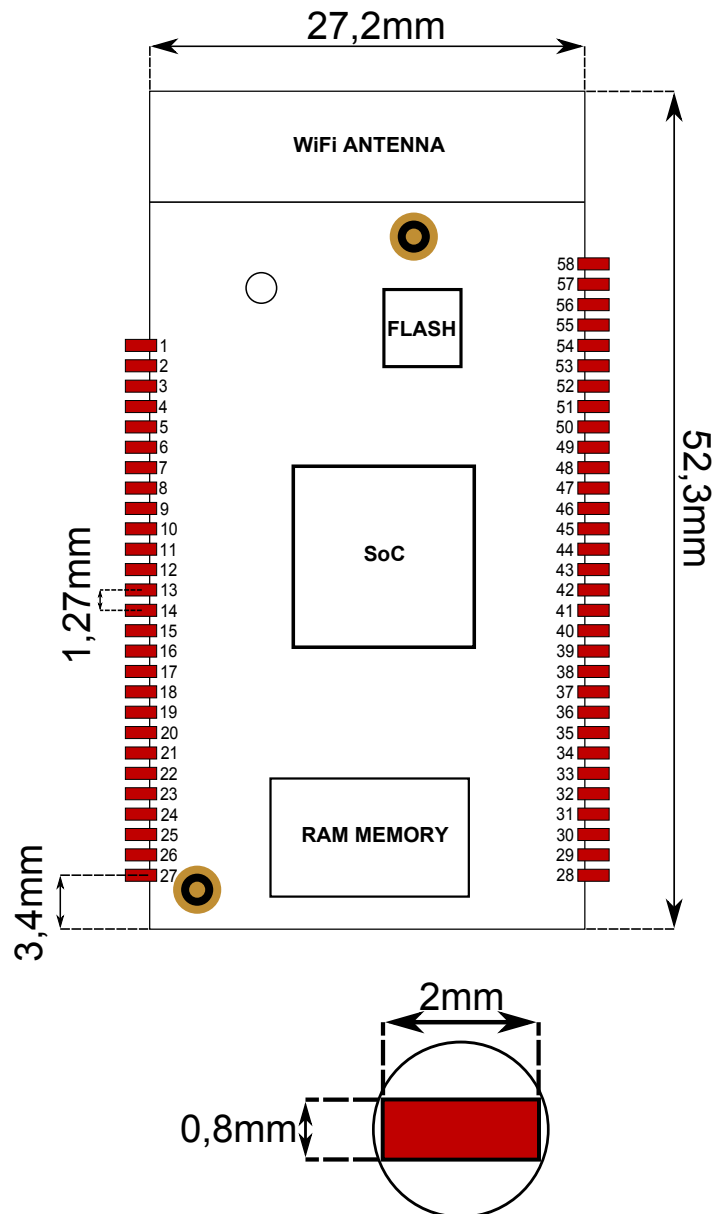
5 Pin descriptions

Pin	Name	Input/Output	Description
1	GND	input	GND connection
2	IO26	bidirectional	I/O line number 26
3	IO27	bidirectional	I/O line number 27
4	IO11	bidirectional	I/O line number 11
5	IO7	bidirectional	I/O line number 7
6	IO6	bidirectional	I/O line number 6
7	IO8	bidirectional	I/O line number 8
8	GND	input	GND connection
9	GND	input	GND connection
10	3V3	input	Supply voltage pin
11	3V3	input	Supply voltage pin
12	IO17	bidirectional	I/O line number 17
13	IO16	bidirectional	I/O line number 16
14	IO15	bidirectional	I/O line number 15
15	IO14	bidirectional	I/O line number 14

Pin	Name	Input/Output	Description
16	GND	input	GND connection
17	IO13	bidirectional	I/O line number 17
18	IO1	bidirectional	I/O line number 1
19	IO0	bidirectional	I/O line number 0
20	GND	input	GND connection
21	GND	input	GND connection
22	GND	input	GND connection
23	GND	input	GND connection
24	U_RX	input	UART receive connection
25	U_TX	output	UART transmit connection
26	GND	input	GND connection
27	GND	input	GND connection
28	GND	input	GND connection
29	IO23	bidirectional	I/O line number 23
30	IO20	bidirectional	I/O line number 20
31	IO19	bidirectional	I/O line number 19
32	IO18	bidirectional	I/O line number 18
33	IO22	bidirectional	I/O line number 22
34	IO24	bidirectional	I/O line number 24
35	IO21	bidirectional	I/O line number 21
36	3V3	input	Supply voltage pin
37	3V3	input	Supply voltage pin
38	GND	input	GND connection
39	GND	input	GND connection
40	P4_RX+	input	LAN port 4 positive RX connection, default WAN port
41	P4_RX-	input	LAN port 4 negative RX connection, default WAN port
42	P4_TX+	input	LAN port 4 positive TX connection, default WAN port
43	P4_TX-	input	LAN port 4 negative TX connection, default WAN port
44	GND	input	GND connection
45	P0_RX+	input	LAN port 0 positive RX connection
46	P0_RX-	input	LAN port 0 negative RX connection
47	P0_TX+	input	LAN port 0 positive TX connection
48	P0_TX-	input	LAN port 0 negative TX connection
49	GND	input	GND connection

Pin	Name	Input/Output	Description
50	USB-	bidirectional	USB negative data connection
51	USB+	bidirectional	USB positive data connection
52	GND	input	GND connection
53	E_2.2V	output	ethernet transformer bias voltage
54	GND	input	GND connection
55	SPI_CS0	output	SPI slave select output
56	SPI_MISO	input	SPI Master In Slave Out (MISO) connection
57	SPI_MOSI	output	SPI Master Out Slave In (MOSI) connection
58	SPI_CLK	output	SPI clock connection

6 Mechanical information



7 Connection details

All the 3V3 and GND pins are interconnected on the board but it is recommended to use more than one of these pins to give power supply to the module. For optimal stability and minimal noise all supply and grounding pins should be connected. Please use 100nF ceramic capacitors for decoupling.

8 Software

The module comes with the OpenWRT Linux distribution preflashed and with the handy LuCi webinterface installed in the distribution. We will continue to release new software which you can download from <http://www.dptechnics.com>.

9 Legal information

This module is distributed worldwide by DPTechnics. We are not responsible for any product this module is part of. This datasheet is made with great care for detail but it can be possible the datasheet will be updated with more accurate data in te future. Users of DPTechnics products can contact us by letter, telephone or email.

DPTechnics
't Walletje 74
8300 Knokke-Heist
Belgium

Tel: +32(0)50 60 06 69
email: info@dptechnics.com
web: <http://www.dptechics.com>