

Edgecore ECW5211

Wireless Access Point Specification

Revision 1.0



OPEN
Compute Project

Revision History

Revision	Date	Author	Description
.01	2/21/2016	Jeff Catlin	Initial Draft
1.0	3/6/2017	Jeff Catlin	Initial Release

Contents

Revision History.....	2
Licenses	5
Scope.....	7
Overview	7
Physical Overview	7
Dimensions.....	7
Top View.....	8
LEDs.....	8
Front View	9
System Overview:	10
Main PCB Block Diagram	10
PCB Board mechanical outline	11
PCB	11
PCB Dimensions.....	12
PCB major components.....	12
PCB Top view.....	13
PCB bottom view.....	14
CPU Subsystem	14
Console Port.....	15
Thermal Monitoring	15
TPM	15
Software Support	16
U-Boot	16
ONIE	16
Specifications	17
Power Consumption.....	17
Regulatory Compliances	17
Radio Regulatory Compliance :	17

EMC 17

Safety & ESD..... 17

Environmental..... 18

ROHS 18

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Description	Manufacturer	Part Number
CPU	Qualcomm	IPQ4018
RF 5G FEM	Qualcomm	QFE1952
RF 2.G FEM	Qualcomm	QFE1922
DDR III	Nanya	NT5CC64M16GP-DI
NOR Flash	Macronix	MX25L12835F
NAND Flash	Macronix	MX35LFxGE4AB
PHY	Qualcomm	QCA8075/8072
TPM	Atmel	AT97SC3205T
PoE Power Converter	TI	TPS23754
Bluetooth (Optional)	TI	CC2540F256RHAT

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This specification is being submitted under the Open Compute Project Hardware License (Permissive)

Scope

This document outlines the technical specifications for the Edgecore ECW5211 Open wireless Access Point submitted to the Open Compute Foundation.

Overview

The ECW5211 is an indoor 802.11 a/b/g/n/ac Wave 2 2x2 dual-band, dual-radio Enterprise Access Point.

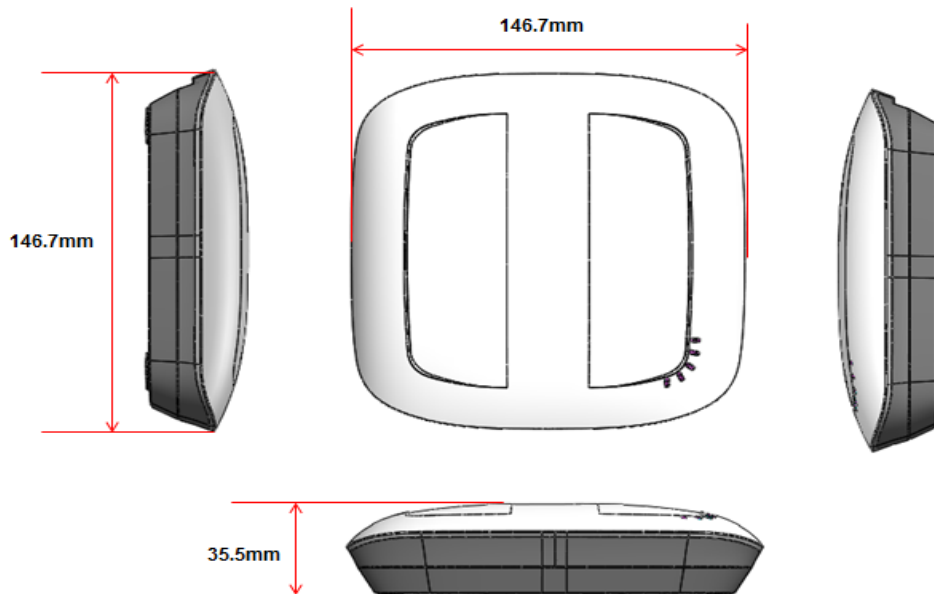
Through its two Gigabit Ethernet ports the 802.11ac dual-band wireless Access Point can connect to the backbone network. The ECW5211 supports 802.3at/af PoE which enables the Access Point to be powered remotely by a PoE switch. An AC power adapter option is also available for locations where PoE is not available.

The ECW5211 is designed so that it can easily be wall mounted or ceiling mounted to T-Bars.

Physical Overview

Dimensions

	Inches	Millimeters
Length	5.77	146.7
Width	5.7	146.7
Height	1.4	35.5



Top View

The top view of the ECW5211 shows the following



LEDs

LED Name	Description	State
Power	Led to indicate status of Power	Amber - Normal Amber Blinking – Boot up Off – No Power
LAN	Led to indicate link status of port	Green – Valid link Green Blinking Data activity Off – No link
2G	Led to indicate link status of port	Green – 2G WAN Connection ok Green blinking – Data activity Off – No link
5G	LED to indicate radio status	Green – 5G WAN Connection ok Green blinking – Data activity Off – No link

Front View

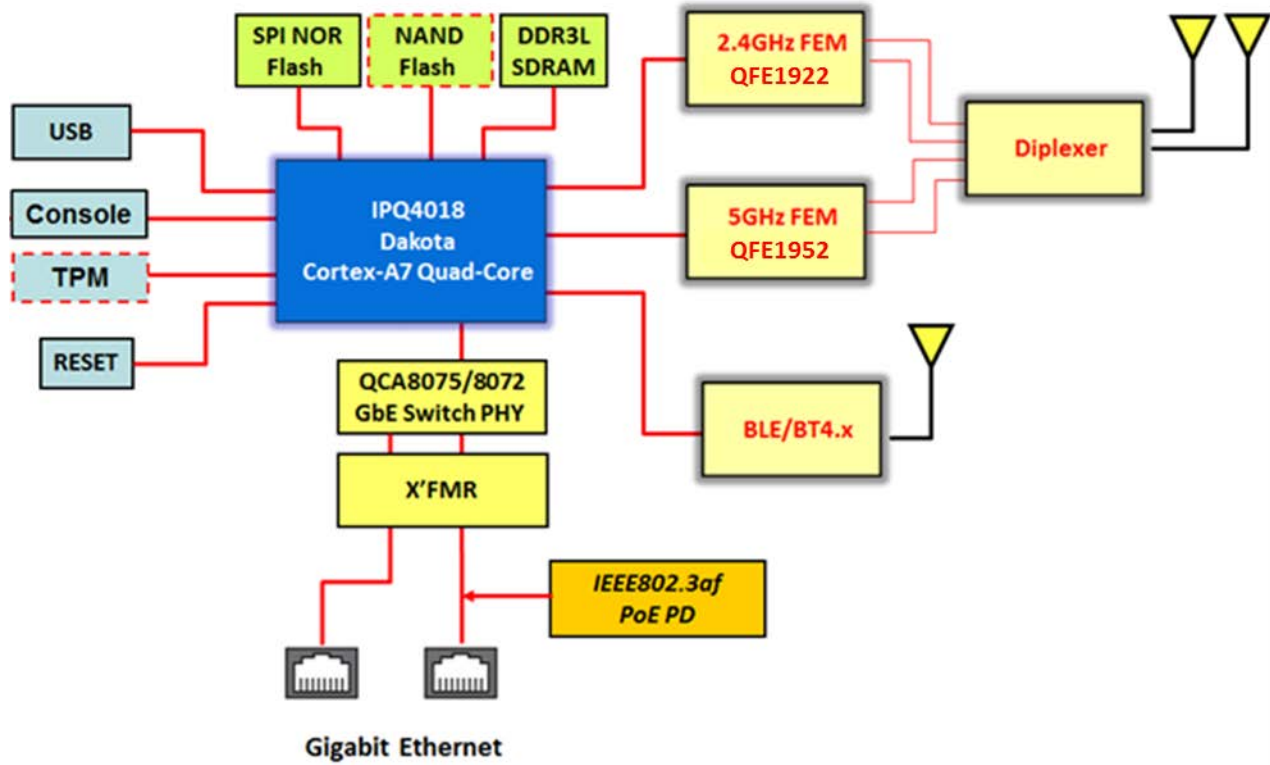


The front panel view of the ECW5211 includes the following key components:

- Reset button
 - Used to reset the CPU and associated components
- 12V power jack
 - Used with optional external 12V power module
- Eth1/PoE Gb Ethernet port
 - Used for network connectivity and to power device through PoE
- Eth 2Gb Ethernet port
 - Used for network connectivity
- USB 2.0 Host port

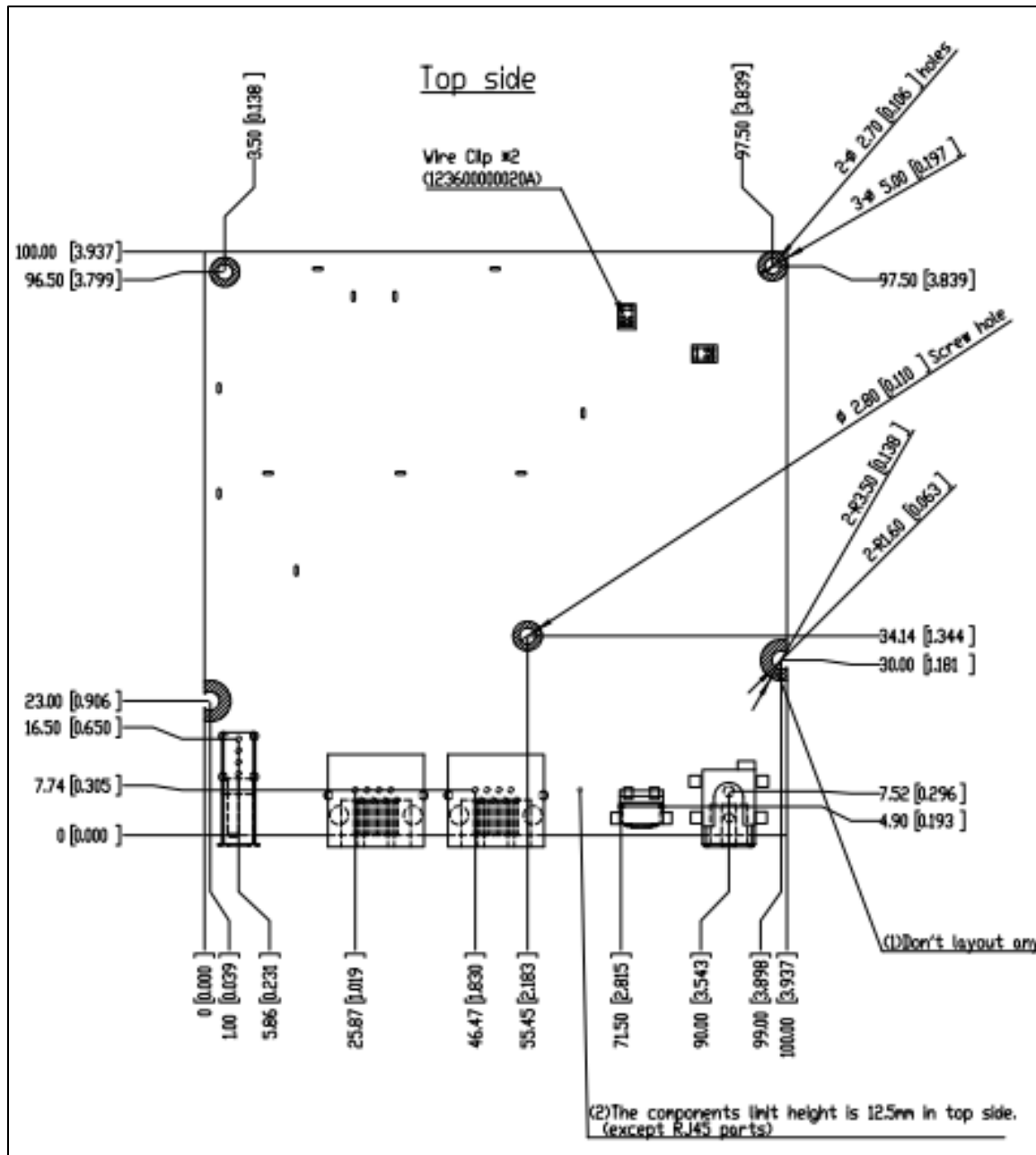
System Overview:

Main PCB Block Diagram



PCB Board mechanical outline

The ECW5211 is composed of 6 layer PCB assembly:



PCB

The PCB is a six layer board supporting the CPU and radio silicon, front panel networking and management ports, and LEDs.

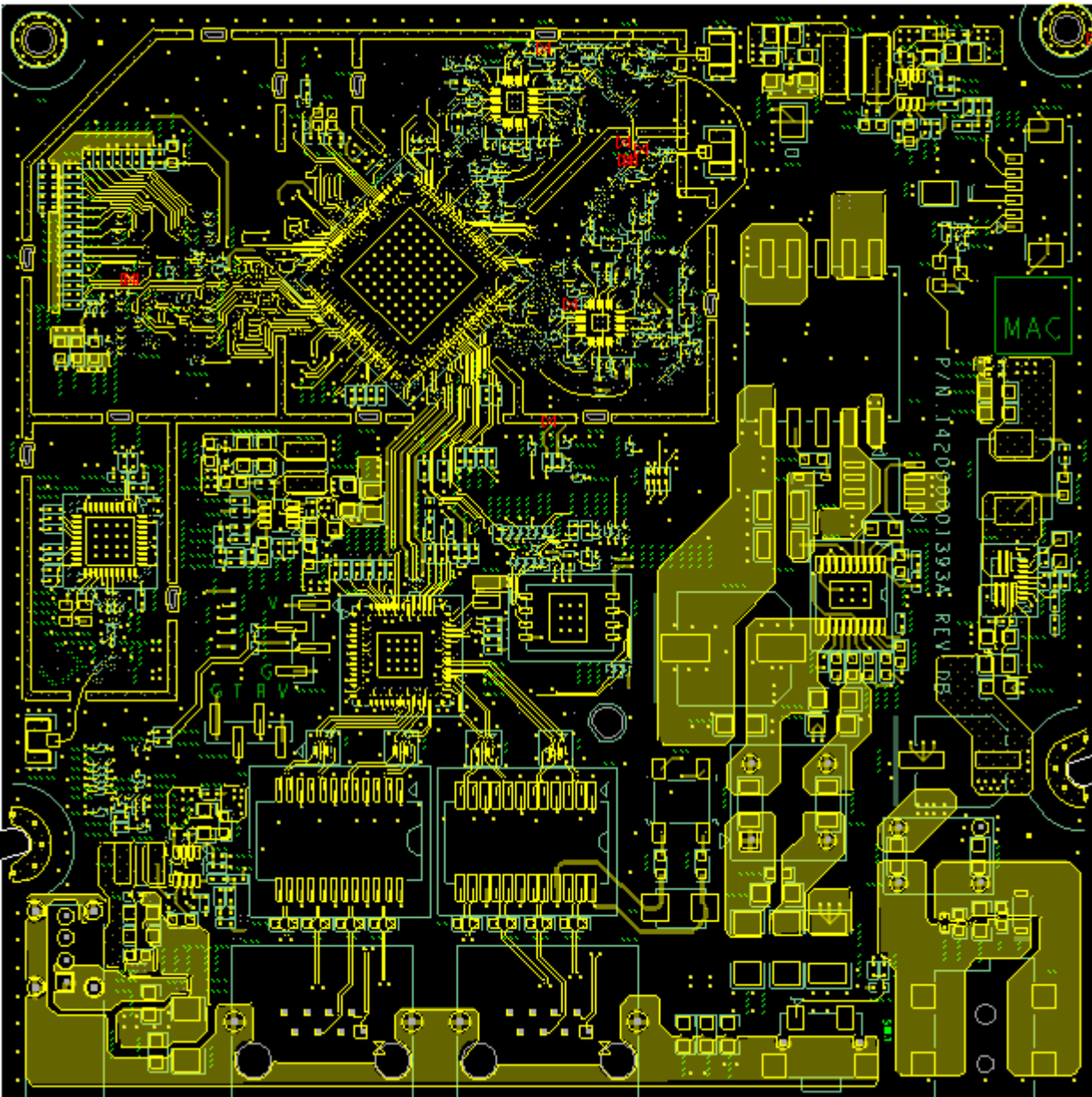
PCB Dimensions

	Inches	Millimeters
Length	3.94	100
Width	3.94	100

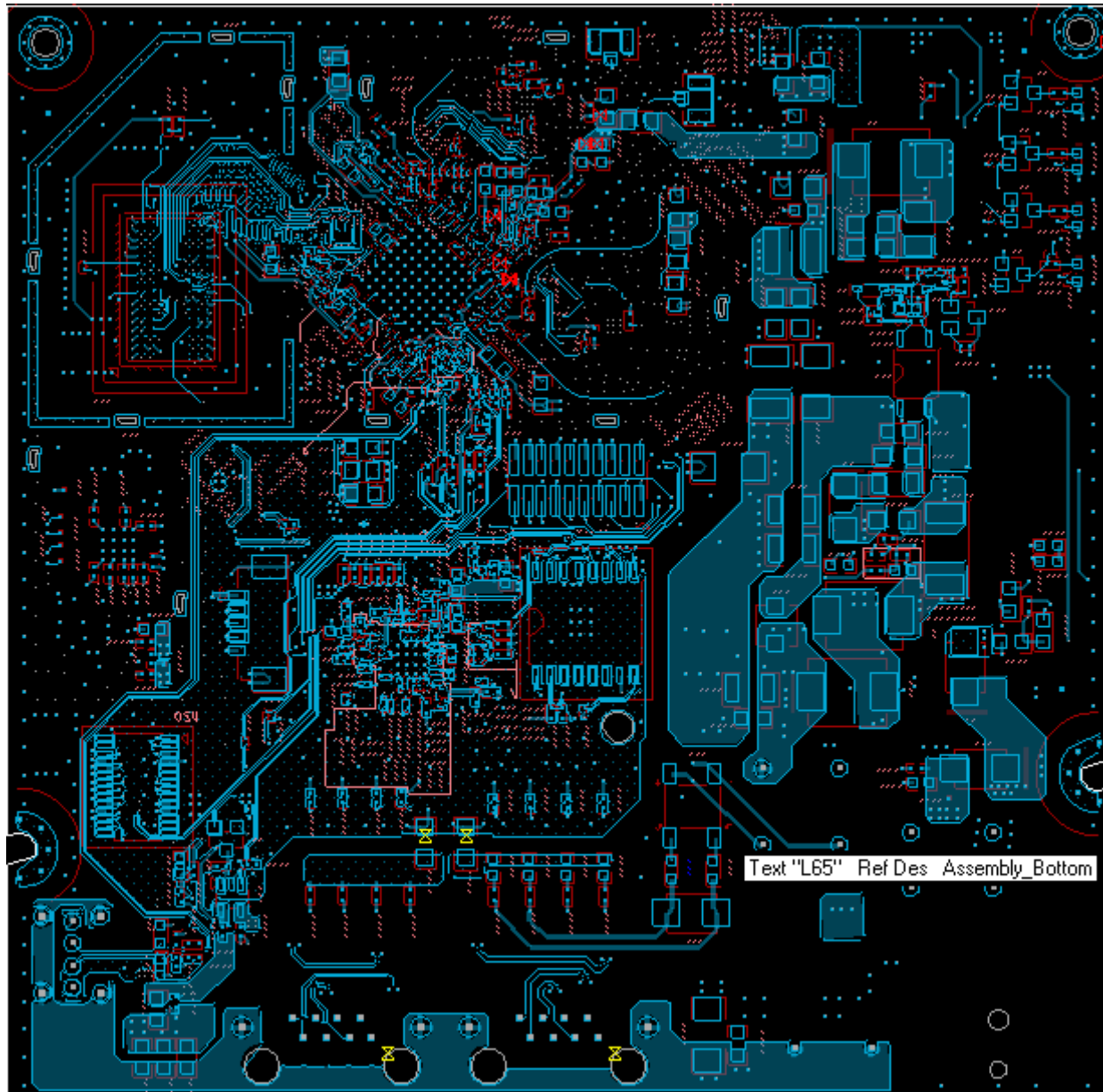
PCB major components

<u>Description</u>	<u>Manufacturer</u>	<u>Part Number</u>
CPU	Qualcomm	IPQ4018
RF 5G FEM	Qualcomm	QFE1952
RF 2.G FEM	Qualcomm	QFE1922
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NOR Flash	Macronix	MX25L12835F
NAND Flash	Macronix	MX35LFxGE4AB
PHY	Qualcomm	QCA8075/8072
TPM	Atmel	AT97SC3205T
PoE Power Converter	TI	TPS23754
Bluetooth (Optional)	TI	CC2540F256RHAT

PCB Top view



PCB bottom view



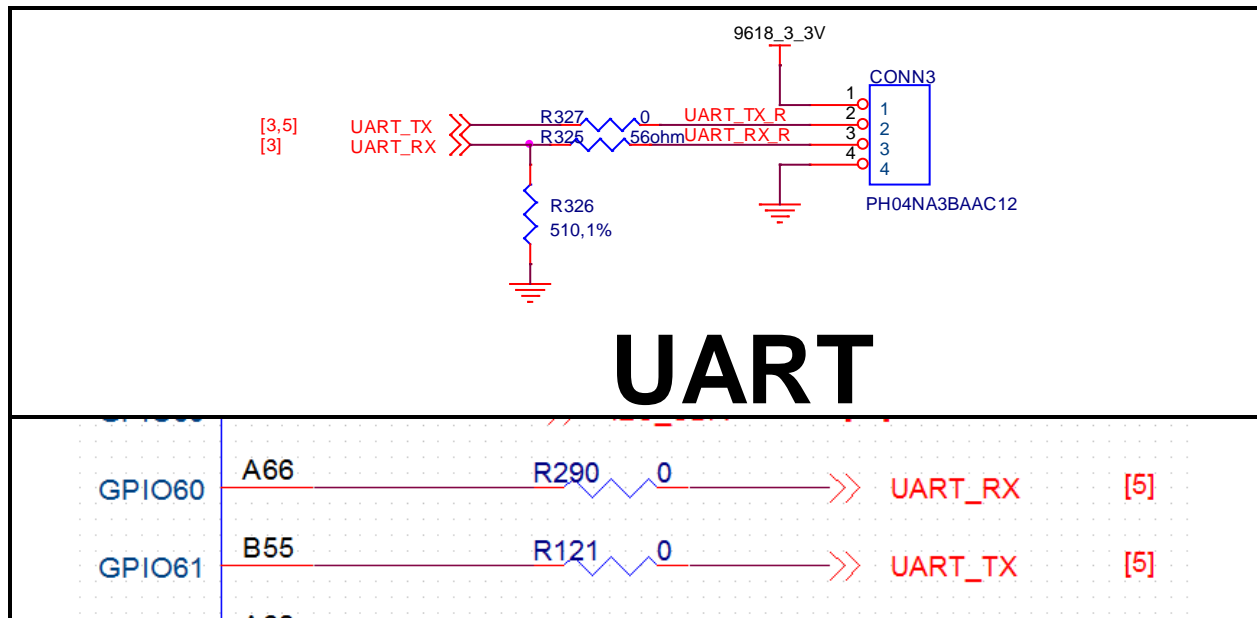
CPU Subsystem

The ECW5211 utilizes the Qualcomm IPQ4018 communications processor supporting the following:

- NOR Flash 32Mbytes (default 16MBytes)
- NAND Flash 128Mbytes
- DDR III 256Mbytes (default 128Mbyte)

Console Port

A four pin connector is located on the PCB board for console usage. The console port operates at 115200 baud rate only.



Thermal Monitoring

The ECW5211 supports a thermal sensor located within the IPQ4018.

TPM

The ECW5211 supports the AT97SC3205T which is a fully integrated security module designed to be integrated into embedded systems and implements version 1.2 of the Trusted computing Group (TCG) specification.

Software Support

The ECW5211 supports a base software package composed of the following components:

U-Boot

The ECW5211 supports U-Boot version U-Boot 2012.07 or newer

ONIE

Please check <http://onie.org/> for the latest supported version

Specifications

Power Consumption

The total estimated system power consumption of the ECW5211 is ~9 Watts. This is based upon worst case power assumptions for traffic and environmental conditions. Typical power consumption will be less.

Regulatory Compliances

The ECW5410-O is designed and validated to comply with the following standards

- FCC part 15B, 15C, and 15E
- CE EN 300 328, EN 301 489-1&-17, CE EN 301 893, EN60601-1-2
- EMI: FCC/CE class B,
- DFS (software dependent)
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

Radio Regulatory Compliance :

- FCC
 - 2.4GHz: FCC part 15C 15.247
 - 5GHz: FCC part 15C 15.247 + part 15E 15.407
 - Band-2 & Band-3 DFS: option (software dependent)
- CE
 - 2.4GHz: EN 300 328 V1.8.1
 - 5GHz: EN301 893 V1.7.1

EMC

- FCC
 - FCC Part 15, Subpart B
- CE
 - EN55022+24:2010 Class B
 - EN 301 489-1 V1.9.2
 - EN 301 489-17 V2.2.1

Safety & ESD

- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

Environmental

- Weight 354g (.78 lb)
- Temperature: IEC 68-2-14
 - +0 to +50 degrees C (Operating)
 - -20 to 70 degree C (Non-operating)
- Humidity: 5% to 95% (Non-condensing)
- Climatic: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-40, IEC 60068-2-41
- Vibration and Shock Test: IEC 60068-2-64, IEC 60068-2-6, IEC 60068-2-27
- Bump Test: IEC 68-2-29
- Drop Test: IEC 60068-2-31

ROHS

Restriction of Hazardous Substances (6/6)

Compliance with Environmental procedure 020499-00 primarily focused on Restriction of Hazardous Substances (ROHS Directive 2002/95/EC) and Waste and Electrical and Electronic Equipment (WEEE)