EC32L13WADK 2.4GHz 802.11 b/g/n Streaming Media Server and Renderer

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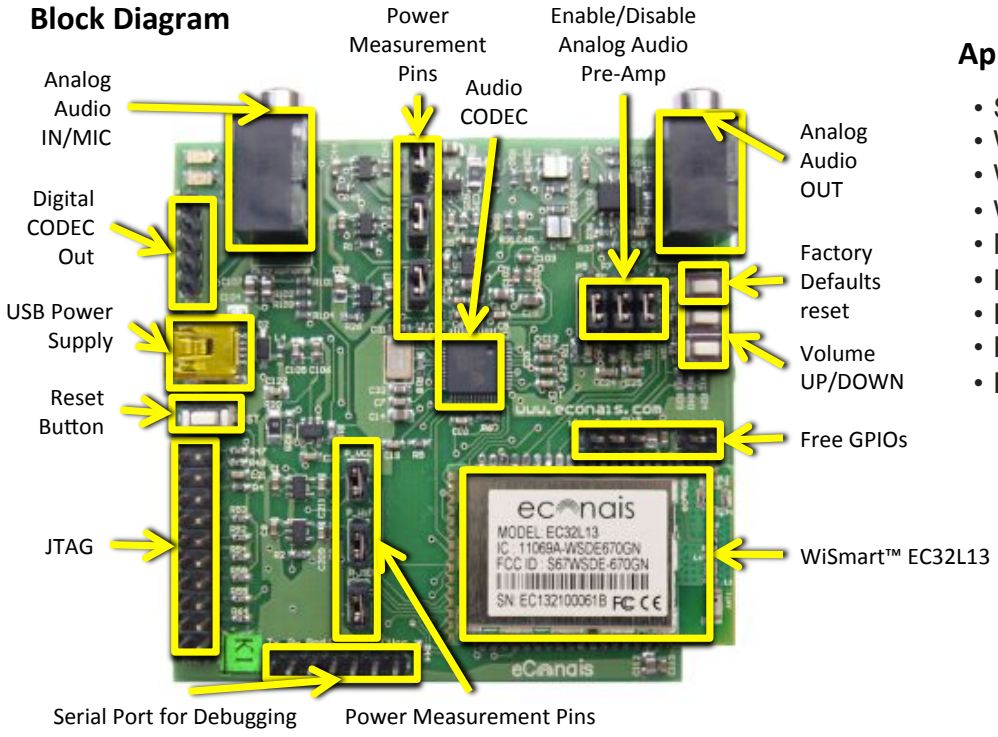
Based on the EC32L13 Wi-Fi module, the EC32L13WADK demonstrates the capabilities of a fully functioning audio and video streaming DLNA device that can both serve and render media to up to 3 concurrent users straight out of the box. With the lowest power consumption modules, smallest footprint, and most comprehensive software library of open source code and open source applications, the EC32L13WADK ensures you have the most rapid path to market for Wi-Fi streaming media products. The external audio CODEC provides high quality digital audio and support of all the standard audio formats.

Highlights

- DLNA 1.5 support with DLNA Media Renderer (DMR) and DLNA Media Server (DMS) support
- Web radio ready solution
- Native MP3/MP4-AAC/OGG/WAV/WMA/MIDI/FLAC audio formats support
- RTP and HTTP streaming supported
- On the fly audio decoding with advanced CODEC
- Hi-Fi audio
- Digital and Analog stereo audio output

Block Diagram



Applications

- Smart Media Appliances
- Wi-Fi Audio Speakers
- Wi-Fi Headphones
- Wireless Stereo Amplifier
- Media Server
- Media Renderer
- DLNA Accessible Media Devices
- Portable Media Hub
- PA systems

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Reference Design

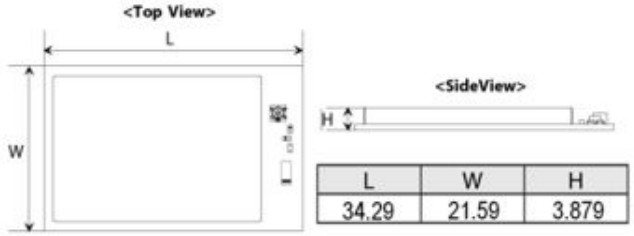
Features

- WiSmart™ library API provided with DLNA
- Flexible design enables use of other CODECs
- Optimized for Hi-Fidelity sound
- CODEC includes MP3 and MP4/AAC license
- High BW raw audio streaming supported
- Wi-Fi Client and AP modes
- DHCP Client/Server
- Built-in webserver for configuration
- Free ARM toolchain
- DLNA application source code included
- Wi-Fi, MCU and Audio programming not required
- Native MP3/AAC/OGG/WAV/WMA/MIDI/FLAC
- No need for music source transcoding
- On the fly audio decoding
- Can be operated from battery source
- DLNA 1.5 level compatibility library provided
- RTP and HTTP streaming supported
- Web radio ready solution

Resources/Functions

Processor	32bit Cortex M3
Clock Max	72MHz
CODEC	VS1053B
Digital audio out	Yes (I2)
Analog audio out	2ch stereo
Webradio	Yes
Flash available for user apps	150KB
RAM available for user apps	30KB
DLNA Media Renderer (DMR)	Yes
DLNA Media Server (DMS)	Yes
Concurrent DMR/DMS	Yes
Over-The-Air FW upgrade	Yes
WPA/WPA2	Yes

EC32L13 Dimensions (mm)



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34.29	21.59	3.879

EC32L13 Specifications

Radio Technology	2.4GHz IEEE 802.11b/g/n
Power Supply	3.3V
Antenna	SMD or u.fl
Max TX Power	18 dBm
Max RX Sensitivity	-94 dBm
Storage Temperature	-50 to +125 °C
Opteimal Operating Temperature	-30 to +85 °C
Max Operating Temp	-40 to +85 °C
Max Distance	400m open space
Roaming	<20 ms
Certification	RoHS

CODEC Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
DAC Resolution			18		bits
Total Harmonic Distortion	THD			0.07	%
Third Harmonic Distortion				0.02	%
Dynamic Range (DAC unmuted, A-weighted)	IDR		100		dB
S/N Ratio (Full Scale Signal)	SNR		94		dB
Full Scale Output Voltage (Peak-to-Peak)		1.64	1.85	2.06	Vpp
Deviation from Linear Phase				5	°
Analog Output Load Resistance	AOLR	16	30		Ω
Analog Output Load Capacitance				100	pF
Microphone Input Amplifier Gain	MICG		26		dB
Microphone Input Amplitude			48	140	mVpp AC
Microphone Total Harmonic Distortion	MTHD		0.03	0.07	%
Microphone S/N Ratio	MSNR	60	70		dB
Microphone input Impedances, per pin			45		kΩ
Line Input Amplitude			2500	2800	mVpp AC
Line input Total Harmonic Distortion	LTHD		0.005	0.014	%
Line Input S/N Ratio	LSNR	85	90		dB
Line Input Impedance				80	k

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