



Introduction

ALD SyncAlong multi-room music streaming solution delivers CD quality music to anywhere in the house without the need for connecting wires. Advanced Wi-Fi and streaming technologies reproduce the fullness, clarity and depth of your music way beyond Bluetooth A2DP. In addition to longer range, higher bandwidth and stronger immunity to interferences, Wi-Fi technologies coupling with UPnP/DLNA, industry standards for music discovery and sharing, enable speakers to stream music from your libraries which are typically spreading among all compatible devices in the local network such as PC, tablet PC, smart phone and network storage devices. Your music enjoyment is further enriched with our cloud music and Internet radio capabilities. For party lovers, our state-of-the-art synchronized multi-room playback system supports up to 5 speakers across your house to beat all guests to the same tune. True multi-room playback with multiple songs playing to select groups of speakers is also supported. What even better is, all browsing of music libraries and playback control can be done with the large, color display of smart phones and tablets. Cloud music services such as Spotify, QPlay and Kukou Music are supported.

Key Features

- Synchronized party mode and multi-room playback with iOS and Android devices
 Multiple media played to different speakers (in groups) across the house in synchronization with one smart device..
- Shuttle configuration for multiple speakers (Android only)
 Set up of multiple speakers for Wi-Fi connection needs to be done once only (Android APK only)
- User assigned speaker name and individual playback volume Individual speakers can be re-named and controlled for different volume of playback.
- Legacy device and subscription-based music services broadcast AUX-IN broadcast for legacy devices with line-out capability and various music subscription services the mobile devices are authorized in a multi-room, synchronized setting.
- Shared music from PCs. Tablets. Handsets and NASs
 All the music stored in handsets, tables, PCs or NASs can be browsed and selected to play to any speaker
- Cloud music and Internet radio support
 Plays music from cloud sources and over 13,000 Internet radios across the world.
- Network playback with or without router

Can be configured to join an existing network or form it own network for music sharing and playback

iOS Streaming broadcast
 Broadcast music from iOS devices and iTunes for multi-room, synchronized playback.

Browse the playlists and tracks of all your libraries appearing in your phone to play anywhere at home. Relieve your ears from the tethering headphones with speakers placed wherever you want.



	Hardware Specifications	
	Wi-Fi - General	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b 2.412 GHz 2.472 GHz IPEX connector or PCB antenna
	Wi-Fi Security	Secure network with WPA, WPA2 and WEP
	Wi-Fi Data Rates	IEEE 802.11 b Standard Mode: 1.0,2.0,5.5, 11.0 Mbps IEEE 802.11 g Standard Mode: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11 n: 72 Mbps @ HT20; 150 Mbps @ HT40
	Wi-Fi Receiver Sensitivity	HT40 MCS7: -69 dBm @10% PER(MCS7) HT20 MCS7: -64 dBm @10% PER(MCS7) 54M: -74dBm@10% PER 11M: -87 dBm@8% PER
	Wi-Fi Modulation	Half-duplex OFDM, CCK, DSSS BPSK, QPSK, 16-QAM, 64-QAM
	Transmit Power	IEEE 802.11 n: 15 dBm @ HT40 MCS7; 15 dBm @ HT20 MCS7
2 Ac	dvanced Linux Design Ltd	SyncAlong Music Streaming System ver 3.0 www.aldtech.com



	IEEE 802.11 g: 16 dBm	
Voltago	IEEE 802.11 D: 18 dBm	
Power Consumption	$3.3V \pm -10\%$	
Fower consumption	Standby: 100 mA (average)	
Audio	Formats: AAC MP3 ELAC OGG WMA and WAV	
Addio	16-hit data 44 1/48 0 KHz sampling frequency	
	Lossless or compressed music	
	IIS output to audio CODEC (NAU8822 or WM8960)	
	AUX-IN for digital broadcast	
Status LED	Dual LED for status display	
Button Input	On/Off and reset buttons	
Power consumption	Typical (150 mA @3.3V); maximum (200 mA @3.3V)	
Firmware Specifications		
Wi-Fi	Auto-scan AP	Yes
	AP mode and station mode	Yes
	AP and station mode change through smart phone	Yes
Android Application	Smart Wi-Fi setup (AP mode, station mode and mode change)	Yes
	Speaker setup (enable/disable; stereo/mono playback) and speaker naming	Yes
	Music playback controls	Yes
	HTTP Streaming server integrated	Yes
Music Management	UPnP/DLNA compliant	Yes
	Third party control points: Twonky, BubbleUPnP	Yes
	Third party music servers: Windows Media Player, Twonky, BubbleUPnP	Yes
Cloud Music	QQ Music, Kukou Music	Yes
	Spotify and other music subscription services through AUX-In and iOS Spotify	Yes
	APP	
Internet Radio	Skytune radio portal with over 13,000 stations worldwide	Yes
	Location/Genre classification	Yes
	Smart phone is needed only in station browsing and linking	Yes
Multi-room Playback	Synchronized playback up to 5 speakers ("""")	Yes
	One music source to multiple speakers	Yes
	Nultiple sources from multiple smart phones play to select speakers	Yes
	Dynamic joining and removal of speakers	Yes
Eirmware Undate	Socure undate	Yes
Filliwale Opuate	Over the air undate without a connecting PC or storage modia	Voc
Playback Control	Diay/Pause/Mute/Ston/Forward/Backward	Vos
They back control	Shuffle and sequential play modes with repeatability control	Ves
	Treble and bass control	Yes
	Album artwork display (thumbnail and expanded views)	Yes
	Individual speaker volume control	Yes

Note: Operating in AP mode or Station mode in a 300 Mbps or faster 802.11 n Wi-Fi network with clean interference.



ALD Technology Ltd supplies a total solution of hardware and software in turn-key assembled and tested PCB module to enable audio product manufacturers to design Multi-room audio streaming products by adding just the power amplifier, DC supply and buttons/LEDs. Manufacturers can concentrate on what they can do best - complete product design and market development, to achieve faster time-to-market. For large volume requirements, royalty-based authorization for production can be arranged. We also entertain custom designs to



enable product differentiation.

Order M803 with the corresponding order code. For example, M803-21 is the solution with standard Multi-room playback capability.

	M803-11	M803-21			
	Single Room	Multi-room +			
802.11n Wi-Fi	Yes	Yes			
100 Mbps Ethernet	No	Yes			
AP mode and station mode	Yes	Yes			
UPnP/DLNA compatible	Yes	Yes			
AUX-in as music source	No	Yes			
Cloud Music Service Note 1	QPlay, Kugou Music	QPlay, Kugou Music			
Android APK	Yes	Yes			
ios app	Yes	Yes			
Bass and treble control	Yes	Yes			
Skytune Internet radio portal	No	Yes			
Synchronized multi-room playback	NA	Yes			
Individual speaker volume control	NA	Yes			
One source to multiple speakers	NA	Yes			
Compressed and lossless music Note 2	Yes	Yes			
Over the air firmware upgrade	Yes	Yes			
Number of speakers	1	5			
Note 1. Other Cloud Music Services can be integrated with business line-up by the customer.					

Note 2. Support of Hi-Fi grade (16-bit, 44.1 KHz), lossless music or compressed streaming in WAV, FLAC formats, MP3, AAC, WMA

Pin Number	Name	Description	
1	GPIO1(PU)/CFG/SPI_LCD_CS#	GPIO 1 (pull up) or configuration or SPI LCD chip select (low active)	
2	GPO13(PU)/CFG/	GPIO 13 (pull up) or configuration.	
3	GPO14(PD)/CFG/SPI_LCD_A0	GPIO 14 (pull down) or configuration or SPI LCD address output.	
4	GPO15(PD)/CFG/SPI_LCD_CLK	GPIO 15 (pull down) or configuration or SPI LCD clock.	
5	GPO16(PD)/CFG/SPI_LCD_DO	GPIO 16 (pull down) or configuration or SPI LCD data output.	
6	GPIO28(PU)/CFG	GPIO 28 (pull up) or configuration.	
7	+3.3V	System supply voltage.	
8	+3.3V	System supply voltage.	
9	UART_RX	UART receive (3.3V and debug use only)	
10	UART_TX	UART transmit (debug use only)	
11	I2S_DX	IIS digital audio output.	
12	GPIO23/SPDIF_OUT	GPIO 23 or SPDIF output.	
13	I2S_BCLK	IIS bit clock.	
14	I2S_LRCLK	IIS left-/right-clock.	
15	I2S_MCLK	IIS master clock output.	
16	I2S_RX	IIS data receive.	
17	GND	Ground. Connect to ground plane of adapter board.	
18	GND	Ground. Connect to ground plane of adapter board.	
19	LAN_RX-	Ethernet receive negative.	
20	LAN_RX+	Ethernet receive positive.	
21	LAN_TX-	Ethernet transmit negative.	
22	LAN_TX+	Ethernet transmit positive.	
23	LAN_CT	LAN center tap.	
24	USB_D+	USB data positive.	
25	GPIO27(PU)/I2C_SCL	GPIO 27 (pull up) or IIC serial clock.	
26	USB_D-	USB data negative.	
27	GPIO26(PU)/I2C_SDA	GPIO 26 (pull up) or IIC serial data.	
28	GPIO8(PD)/LED_OUT	GPIO 8 (pull down) or LED output.	



Internet Audio Streaming

29	GND	Ground. Connect to ground plane of adapter board.
30	GND	Ground. Connect to ground plane of adapter board.
31	GPIO11(PD)/CFG/SPI_RGB_CLK	GPIO 11 (pull down) or configuration or SPI RGB controller clock.
32	GPIO6/JTAG_TDI/KB_INT#	GPIO 6 or keyboard interrupt (active low)
33	GPIO7/BUTTON_IN#	GPIO 7 or button input (active low)
34	GPIO12(PD)/CFG/SPI_RGB_DO	GPIO 12 (pull down) or configuration or SPI RGB controller data output
35	POWER_ON#	Power is applied (active low).
36	HW_RESET#	System reset (active low).

Notes:

1. All GPIO pins are 2.5V tolerant.

2. Pins for configuration have internal pull-up or pull-down and MUST stay at their default levels during reset.

Board dimensions







Internet Audio Streaming



M803 with integrated Wi-Fi Engine