

# Home A/V Network via Ethernet/ Powerline Reference Design



## Features

- Send DVB-T, ATSC, Cable TV, DVD, or STB AV signal to remote TV by MPEG-2 technology
- AverLogic's total chipset solution for best BOM cost
- No TCP/IP overhead for efficient packet utilization and lower SW implement cost
- Guaranteed continuous video streaming by dynamic bandwidth management
- Composite, S-video, component video inputs
- Stereo right and left audio inputs
- Less than 400 ms latency time
- IR blaster (IR Relay)
- Network configuration via an external IR remote controller

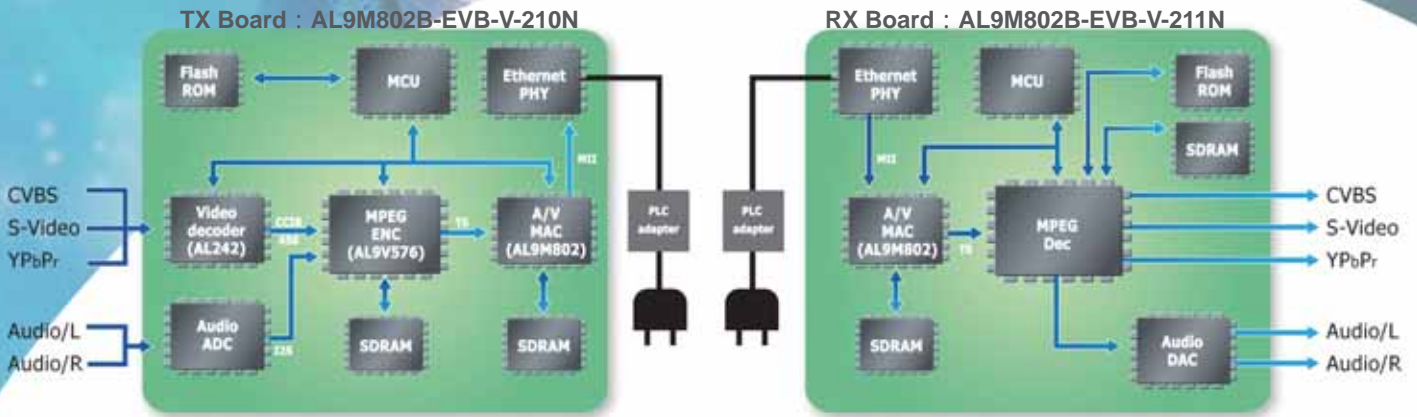
## Introduction

AverLogic's home A/V networking solution streams audio and video to different rooms through powerline with Ethernet interface. The reference design includes a transmitter module (TX board), and a receiver module (RX board). Both modules have Ethernet interface that can be connected to major brands of Ethernet to PLC bridges to demo the home-networking through power-line-Communication (PLC). This reference design comes with another version that embeds PLC adapters in the TX and RX modules. This solution is enabled by AverLogic's chipset consisting of an AV network controller, AL9M802, MPEG-4/2 Encoder, AL9V576, and video decoder, AL242. This platform is a base where all topologies of AV distribution network start from.

## Specifications

I/O of TX module	Inputs Output	Audio: two channel L/R-RCA; Video: CVBS (composite); S-video; or YPbPr Ethernet
I/O of RX module	Input Outputs	Ethernet Audio: L/R channel-RCA; Video: CVBS (composite); S-video; or YPbPr
Video System	Video Standard Video Input Video Resolution Frame Rate Image Processing Video Encoding GOP Structure	NTSC/PAL Auto detects video standard (NTSC, PAL) D1 30/25 fps at NTSC/PAL Software adjustment of hue, contrast, saturation, and brightness MPEG-2 I, IP, IBP, and IBBP
Audio System	Audio Input Audio encode format Bit Rate	Stereo L/R channel with RCA connector MPEG-1 Layer II at 44.1/48KHz sample rate 64Kbps to 384Kbps
Network transmission	Transmission Media PLC-to-Ethernet Bridge  TCP/IP Video QoS Latency Time Dynamic Bit Rate Multicast	Ethernet (with option of external PLC adapter) Compatible PLC bridge are: HomePlug 1.0, Turbo, HomePlug AV, DS2, Panasonic HD-PLC No Hard-wired Less than 400 ms Supported (from 1Mbps to 8Mbps) Support one TX to (Max) 4 RX
Environment	Temperature	Operating -0~60(°C) Non-operating -20~ -70(°C)

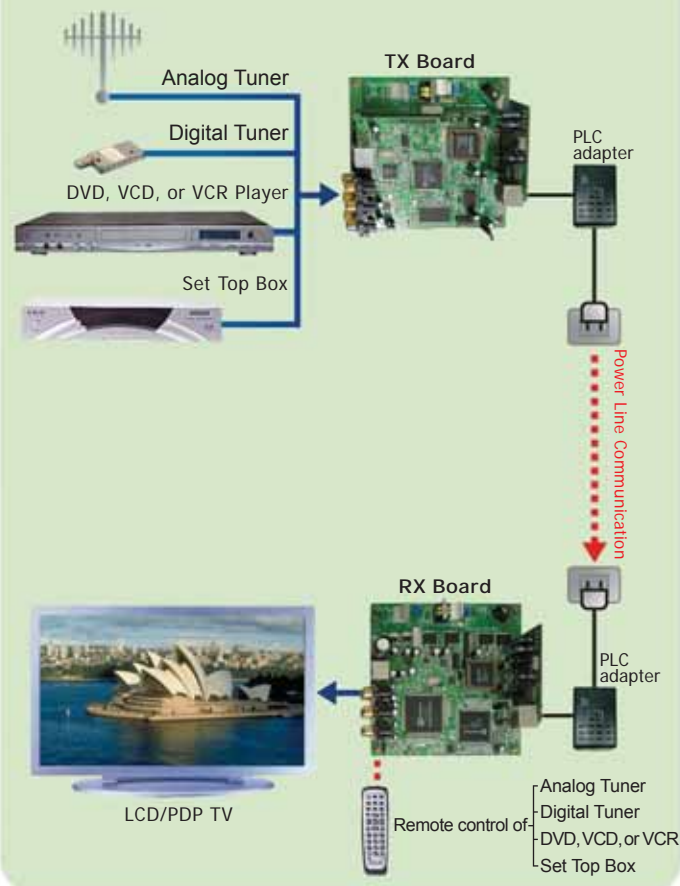
## Block Diagram



## Application Scenario

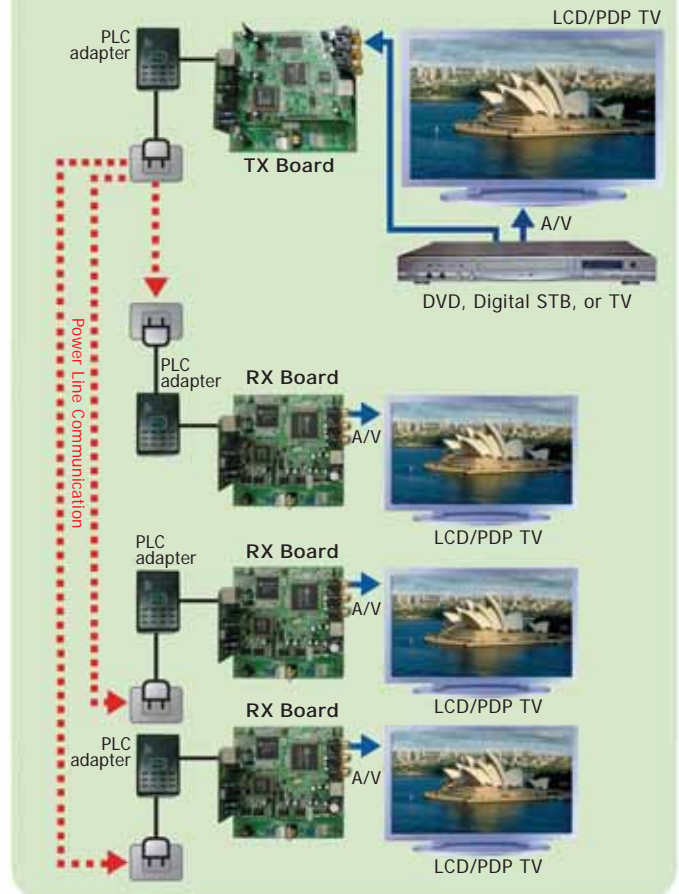
### Scenario 1

One to one audio/ video streaming



### Scenario 2

Broadcast applications, such as: school education, airport arrival/departure status, etc.



## Ordering Information

Part Number	<b>EVB:</b> AL9M802B-EVB-V-210N, AL9M802B-EVB-V-211N
Description	<ul style="list-style-type: none"> <li>• A pair of AV networking (TX + RX modules)</li> <li>• User manual</li> <li>• A pair of PLC adapters</li> </ul>

<b>SDK:</b> AL9M802B-SDK-V-21 (including EVB)
<ul style="list-style-type: none"> <li>• SW Application Note</li> <li>• HW Application Note</li> <li>• Chip Datasheets</li> <li>• Hardware reference design files</li> <li>• BOM List</li> </ul>