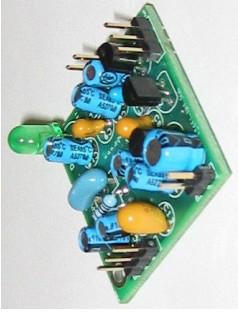


## **DQAM – A C-QUAM AM Stereo Decoder**



### **ASPiSYS DQAM AM Stereo Decoder**

This is a high-quality decoder board for converting regular AM radios to C-QUAM compatible stereo AM radios. You can now upgrade your radio to Stereo with this LOW COST but HIGH QUALITY stereo decoder that provides a "crystal-clear" stereo sound!!! And it's easy to install.

#### Specifications:

- ❑ Channel Separation: >32db
- ❑ Output audio impedance: 10K $\Omega$  Unbalanced
- ❑ Frequency response: 30Hz -15KHz
- ❑ IF Input level: -40dBm up to +13dBm
- ❑ Pilot Level: 5%
- ❑ Pilot Frequency: 25Hz
- ❑ Decoding system: C-QUAM
- ❑ Power supply: 8 - 15V DC @ 20mA

# **DQAM**

## **AM C-QUAM STEREO DECODER**

*Usage Instructions*

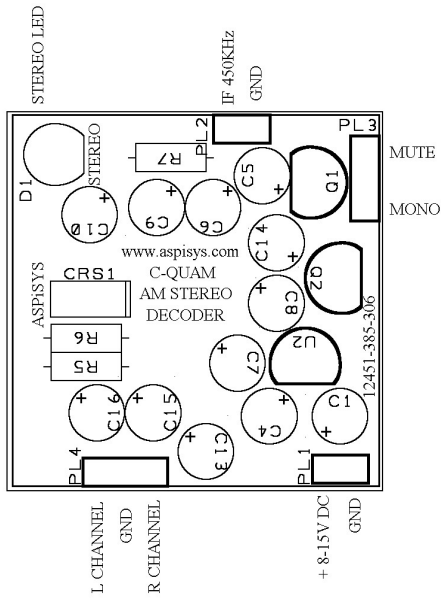
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**Description**

DQAM accepts IF 450KHz (or 455KHz) from AM radio receivers and decodes stereo transmissions using the C-QUAM system. Mono transmissions pass through unaffected. The module provides two outputs, analog audio L & R channels at standard line level commonly used with home audio equipment. These outputs can be connected to the auxiliary/tuner/etc. input of a stereo amplifier.

Connections presume a minimum level of skill pertaining to the understanding of electronic circuits related to AM radio, and the use of a soldering iron for connecting patch cables from the receiver PCB to the DQAM PCB. See the schematic below:



To connect to a radio receiver, first you need to identify within the receiver's circuit the ceramic filter which is at the IF of 450 KHz or 455 KHz. This component (a small plastic cube, usually orange blue or black) usually bears on one of its sides the frequency on it as a number followed by one or two letters.

At the bottom side, this filter has three pins (legs). Facing the letters on the case of the component, the left pin is 1 (input), the middle pin is 2 (usually ground), and the right pin is 3 (output).

With a small coaxial cable connect the filter's output pin to the "IF 450 KHz" PCB input using the center conductor. Using the shield, connect the ground pin of the receiver to the ground (GND) of the DQAM PCB.

Using a voltmeter locate a point at the power supply of the receiver which gives any constant voltage from +8 to +15 VDC. Use a patch cable to connect to the PL1 "+8-15VDC" marked pin.

You will find a left and right output from the DQAM PCB, as shown on the above diagram.

The LED pin marked as "Stereo LED" can in most receivers drive the same LED used for FM stereo indication. Simply, connect it in parallel and check if it lights when receiving an AM Stereo signal (it may take a few seconds for AM stereo to activate).

Some later model receivers use a microcontroller to control the FM Stereo LED. In this case, you will not be able to do this parallel LED connection. You can optionally add a small extra LED connected in parallel with both wires of the on-board LED keeping the same polarity, and place it wherever it is convenient for your use.

There are two inputs (MUTE and MONO) which when they become high TTL level (+5V) they will mute the audio output, or switch to mono output, accordingly. It is up to you whether and how to use them.

**Adjustments**

There are no possible adjustments.

**Note**

The audio bandwidth which is available after decoding, 99% of the time depends on the type of ceramic filter, and the bandwidth this filter allows to pass to the IF. There are various ceramic filter types, and the bandwidth they allow varies from 4.5 KHz (common low cost European receivers) to 15 KHz.

The letter following the number on the ceramic filter usually gives the bandwidth specified by the manufacturer. Letters H, E, and D have very narrow bandwidth. Letter A is usually better (7.5-9KHz). Letter B is usually the best for AM Stereo.

ASPISYS Ltd designs and produces FM – AM radio transmitters and analog television VHF –UHF based on international specifications and quality control at a fully equipped lab, up to 20GHz!

You may find more information about our products through our Internet web site: [www.aspisys.com](http://www.aspisys.com)

Thank you for your preference in our products.

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