

Black Cat ACARS

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Black Cat ACARS is an app to decode and display ACARS aircraft messages sent over VHF radio. The emphasis of this app is good reception of even weak signals received under marginal conditions. It also features up to 16 decoders, so you can decode transmissions from lots of frequencies at once, possibly all the active ACARS frequencies in your area. Virtual audio devices are supported, which can be used in conjunction with SDR programs to tune/decode from all the frequencies at the same time. You will need to consult the documentation for your particular SDR program for the details on running multiple receivers at once.

Requirements:

Macintosh: macOS 10.9.5 or later.

Windows: Windows 8 and 10.

Installation:

Presumably you've gotten this far, and have downloaded and unzipped the .zip file.

If you are running on macOS, move the application anywhere you wish.

If you are running Windows, you can move the entire download directory/folder wherever you wish, but you must keep the Libs and Resources directories with the EXE file, or the app will not run.

First Things First:

Run the program by double clicking on the app's icon. You'll see the main window.

First, select the correct sound input device. This is done via the Sound Input popup menu. Also set the input gain appropriately (note that not all sound input devices let you change the gain).

The Basics:

I'd strong suggest reading the entire documentation below, so you know how to use the app. But here are the basics, to receive ACARS messages.

Make sure you have selected the correct sound input device and set the gain appropriately.

Feed sound into that device from your radio, set the volume of the radio appropriately. The volume indicator should be showing activity, but not pegged to the right.

Tune to an ACARS frequency, using AM mode on your radio. Make sure the radio's squelch is disabled, so you always hear static when there are no transmissions. If your radio has an adjustable AGC setting, you may need to adjust it for best reception (most decodes).

It is entirely normal for only some audible ACARS transmissions to decode, as weak or garbled transmissions cannot be decoded.

There are two settings checkboxes:

Suppress Parity Errors: won't display transmissions that have detected errors

Graph: displays a moving window graph of the signal level, useful for diagnostics.

Statistics for the number and percent of good and bad packets is displayed. These can be cleared to zero using the Reset button.

Black Cat ACARS has a built in database with model information about many planes. As such information can quickly become out of date, you can add your own plane information. Create a text file called ACARS.TXT (note this must be a plain text file, not an RTF or word processing format file!). This file contains one line of information for each plane. The first 7 characters of each line are the plane registration number, followed by a space. The rest of the line contains the text to be displayed. Leading period(s) are required to force the registration number to be seven characters long.

When a packet is decoded, the plane registration number is compared to the registration numbers of the planes in the ACARS.TXT file. If a match is found, the text from that line of the file is displayed after the timestamp. You may use this file to display text or comments about each aircraft. Any entries in this file supersede those from the built in database.

An example of the file format follows below:

```
.N814US This is plane number 1
.N320US This is plane number 2
.NIM5AA This is plane number 3
.N781NC This is plane number 4
.N609AA This is plane number 5
```

There are two windows you can open to view a summary of messages received, from menu items in the File menu. The first, the Planes List Window shows messages sorted by the plane number. The second, the Messages List Window, by the message type.

You can click on a summary line in either window to bring up another window, showing all received messages fitting that description.

There is an option in the File menu to start logging decoded messages to a text file.

Running Multiple Decoders

Up to 16 decoders can run at the same time. The default number is 1, to change this open the app settings/preferences and change the number, then quit and restart the app for the change to take effect.

ACARS Frequencies

129.125 MHz USA and Canada Additional
129.350 MHz
130.025 MHz USA and Canada Secondary
130.425 MHz USA Additional
130.450 MHz USA and Canada Additional
131.125 MHz USA Additional
131.450 MHz Japan Primary
131.450 MHz NZ ARINC Channel
131.475 MHz Air Canada Company Channel
131.525 MHz European Secondary
131.550 MHz World Primary
131.725 MHz Europe Primary
131.850 MHz New European Channel
136.700 MHz USA Additional
136.750 MHz USA Additional
136.750 MHz New European Channel
136.800 MHz USA Additional
136.850 MHz SITA North America
136.900 MHz European Secondary

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