



ARINC 429 to USB Receiver

A429USB

Description

The A429USB receiver is a self-contained interface for recording ARINC 429 serial data in real time. The unit is plug-and-play and will automatically detect and record both high speed and low speed ARINC 429 data. Recorded data may optionally be filtered by label or SDI. An RGB LED indicates receiver status and every message is time-stamped with a 1ms resolution. The A429USB includes over-current and ESD protection to $\pm 30\text{kV}$.



Electrical characteristics

Parameter	Min	Typ	Max	Units
DC voltage supply (typically powered from a USB host port)	4.75	5.00	5.25	V
DC current requirement	10	14	16	mA
ARINC 429 input, valid data 1 or 0	6.7	10.0	13.0	V _{pp}
ARINC 429 input, null	-	-	2.5	V
ARINC 429 input, common mode relative to ground	-	-	5.0	V
ARINC 429 input resistance, differential A to B	30	75	-	Kohm

User commands

L(xxx) - Filter by label eg, L035, L125, L243	Press 'L' and the LED indicator will turn blue to indicate the receiver is expecting a value from the user. The user must enter three octal digits. To cancel the label filtering operation enter L000, this is the default at power-on and processes all labels. To pause logging, enter an invalid label such as L999 which will never be detected.
S(x) - Filter by SDI eg S1, S2	Press 'S' and the LED indicator will turn blue to indicate the receiver is expecting a value from the user. The user must enter a single digit. To cancel the SDI filtering operation enter S0 - this is the default at power-on and processes all SDI values. S0 - cancel filtering, allow all SDI values S1 - SDI bits = 01, data will only be displayed if the last two bits are 01 S2 - SDI bits = 10, data will only be displayed if the last two bits are 10 S3 - SDI bits = 11, data will only be displayed if the last two bits are 11
P - Parity bit	Press 'P' to toggle the parity bit in the logged data. It does not affect the received data or involve any filtering, it simply clears the parity bit when data is displayed. Pressing 'P' does not change the state of the LED as the user is not required to enter a following parameter.



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LED indicator

Green	Valid ARINC 429 messages are being decoded – auto detects high and low speed.
Red	Time out / no valid messages decoded for a period of 1 second. Resets to green as soon as a valid message is decoded.
Blue	Waiting for user input, eg label or SDI value to filter – data will continue to be decoded and logged to the serial terminal.

USB Interface

The USB interface uses a CH340G UART which may require a driver to be installed. Drivers are available for MS Windows and Mac OS-X. The latest Linux kernel has support built in.

Terminal settings:

Baud rate: 921600
Data: 8 bits
Parity: None
Stop: 1 bit
Flow control: None

```
4.756 247 01025C
4.756 070 800008
4.757 071 000040
4.757 072 000020
4.758 073 0006D4
4.758 074 800000
4.759 076 800000
4.759 060 800000
4.760 062 000000
4.760 064 000000
4.870 205 009B98
4.870 203 01F474
4.991 205 009B98
4.991 203 01F474
5.111 205 009B98
5.112 203 01F474
5.232 205 009B98
5.233 203 01F474
5.353 205 009B98
5.354 203 01F474
5.474 205 009B98
5.474 203 01F474
5.595 205 009B98
5.595 203 01F474
5.716 205 009B98
5.716 203 01F474
5.717 256 8100CC
5.717 142 8100CC
5.718 312 0100CC
5.718 313 8100CC
```

Timestamp

Octal label

24 bit data