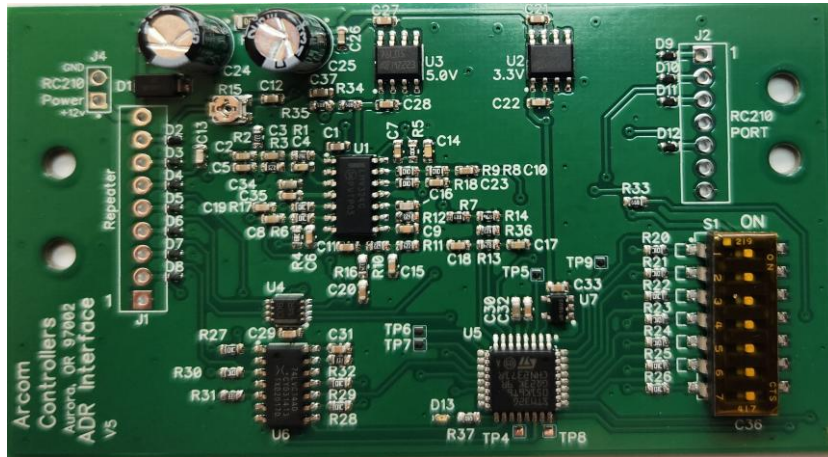




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ADR Interface for the Yaesu DR1x/DR2x

The ADR Interface allows the connection of an external repeater controller to the Yaesu DR-1x and DR2x Fusion Repeaters while still retaining the automatic mode selection capability as well as preventing conflict between the repeater and your external controller.

The ADR includes its own onboard CTCSS Encoder and Decoder and, while designed for use with our RC210 in mind, it will work with any repeater controller on the market.

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Connecting the ADR

You simply connect the cable with the DB15 to the connector on the back of the DR-1x/DR2x. The other cable has a DB9 connector, wired for our RC210 and you simply plug it into whichever Port of the RC210 you're planning to use. If you're using a controller other than the RC210, you may need to rewire this connector as needed. **COS and CTCSS Polarity settings for both MUST be set to Active Low.** Also, if your controller doesn't support the control of an external Tone Encoder, you must ground the pin 1 of the DB9 in order to allow the Tone Encoder to generate tone.

Modification of the DR1x

You will need to remove the cover in order to gain access to a cable within the DR1x that must be modified. Once the cover is removed, you'll see a cable that is plugged into the back of the transmitter chassis that runs over to the receiver chassis. Simply disconnect this cable (at the transmitter end and modify it as shown at the following link:

You can see photos of how to modify the cable at the following URL:

http://www.arcomcontrollers.com/index.php?option=com_content&view=article&id=115:modifying-dr1-x-cable-to-obtain-ptt&catid=79:home-page

You will need to cut into the cable (carefully!) and tap a wire off the yellow wire contained within the cable. Route the wire from the tap outside of the DR-1x through the vent holes (near the center of the rear panel) and connect to the connector protruding from the DB15 shell, using the mating connector supplied with your ADR. Replace the cover on the DR-1x.

Note: The DR2x does not require this connection and you may disregard the above section

J4

J4 may be used to power your RC210. The source for this voltage is the DR1x/DR2x and their limitations on the amount of current available applies.

CAUTION: DO NOT SHORT J4 AS THIS WILL DAMAGE THE DR1x/DR2x

Repeater Configuration

The DR-1x/DR2x **MUST** be properly configured in order to work properly with an external controller and still retain its Fusion Digital capability. Be sure to observe the following settings:

Remote = ON

R = DCS

T = OFF

SIGNALLING = anything but a valid tone (any tone OTHER than what you're using) or DCS code

DSQ CODE = OFF (**DR1x Only**)

TOT and other settings can be whatever you want.

Adjustments

The only adjustments that need to be made is the Tone Encode Level output from ADR and selecting the proper tone via its dipswitch (by default, the ADR ships with its tone set to 67.0 Hz and the level set to midrange). Refer to Figure 1 below. There is a small silver trimpot (R15) on the board, used to adjust transmitter deviation of the encoded tone to 600 Hz. You will need to remove the 4 screws from the plastic box in order to make these adjustments. Replace after that is done.

Note: You may notice a loud "hum" before you select your own CTCSS tone and properly adjust the R15's level control. This is normal

Note: You MUST use CTCSS access and cannot use Carrier Only Access in the RC210. Select your controller's configuration as needed

Note: COS and CTCSS Polarity jumpers in the RC210 MUST both be set to Active Low

Dip Switch Settings

The Dip switch #7 is used to select DR1x/DR2x Mode.

OFF = DR1x

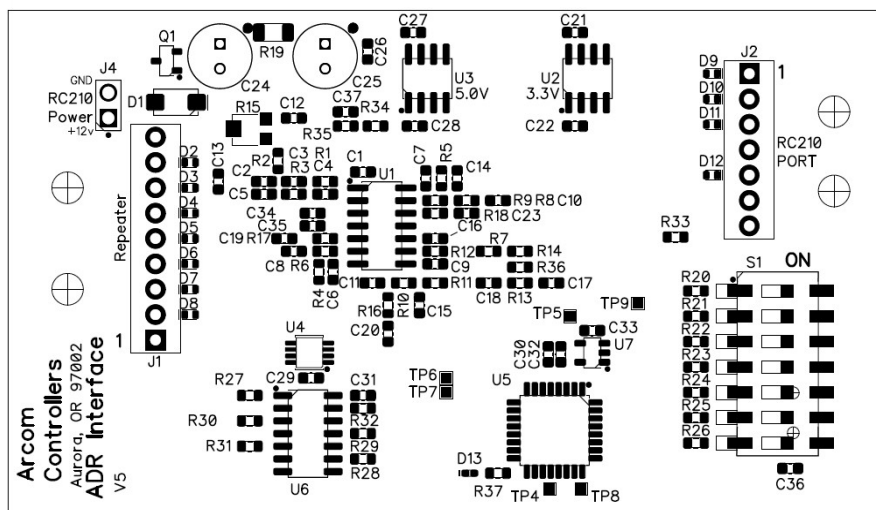
ON = DR2x

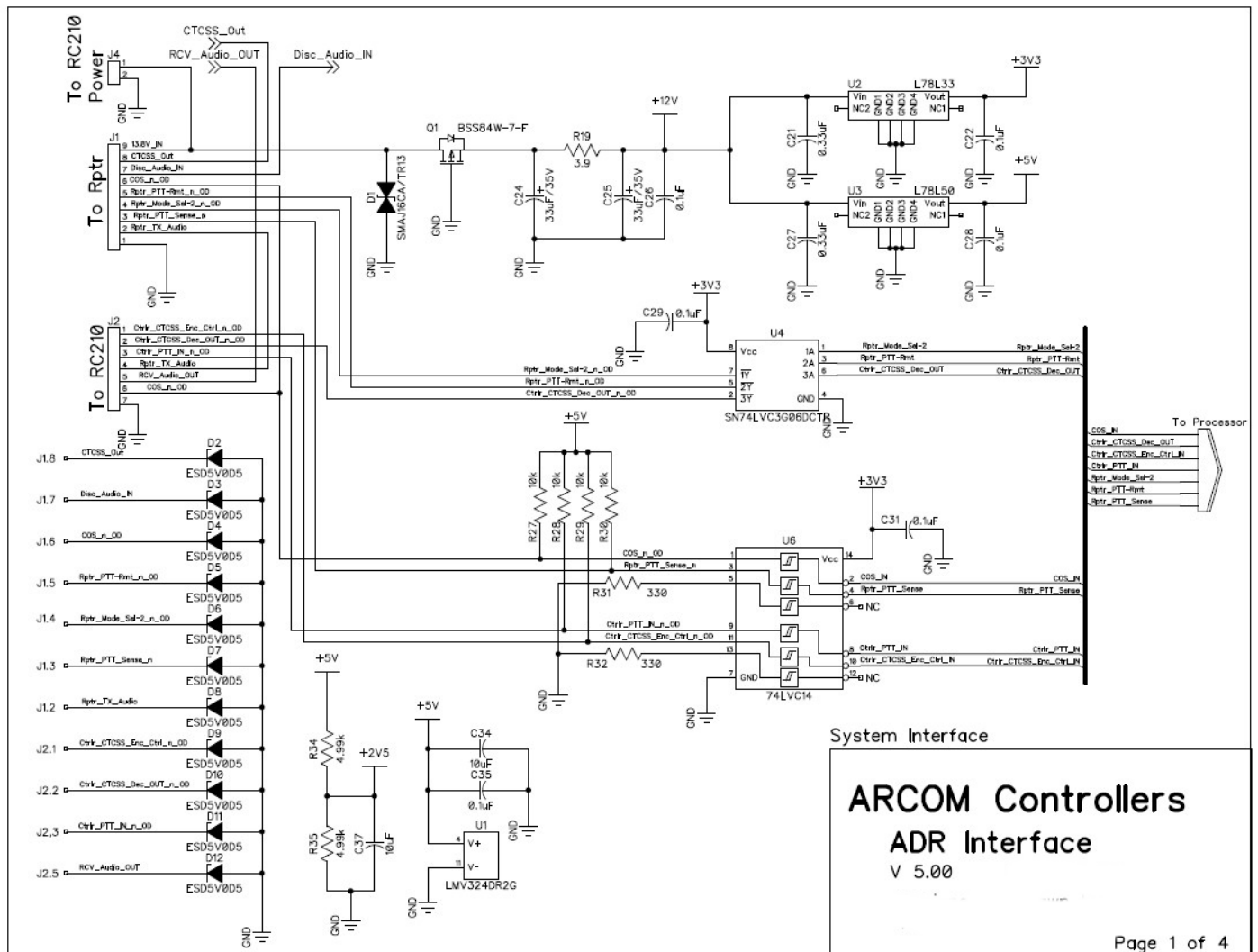
Switches 1 – 6 are used to select the CTCSS tone.

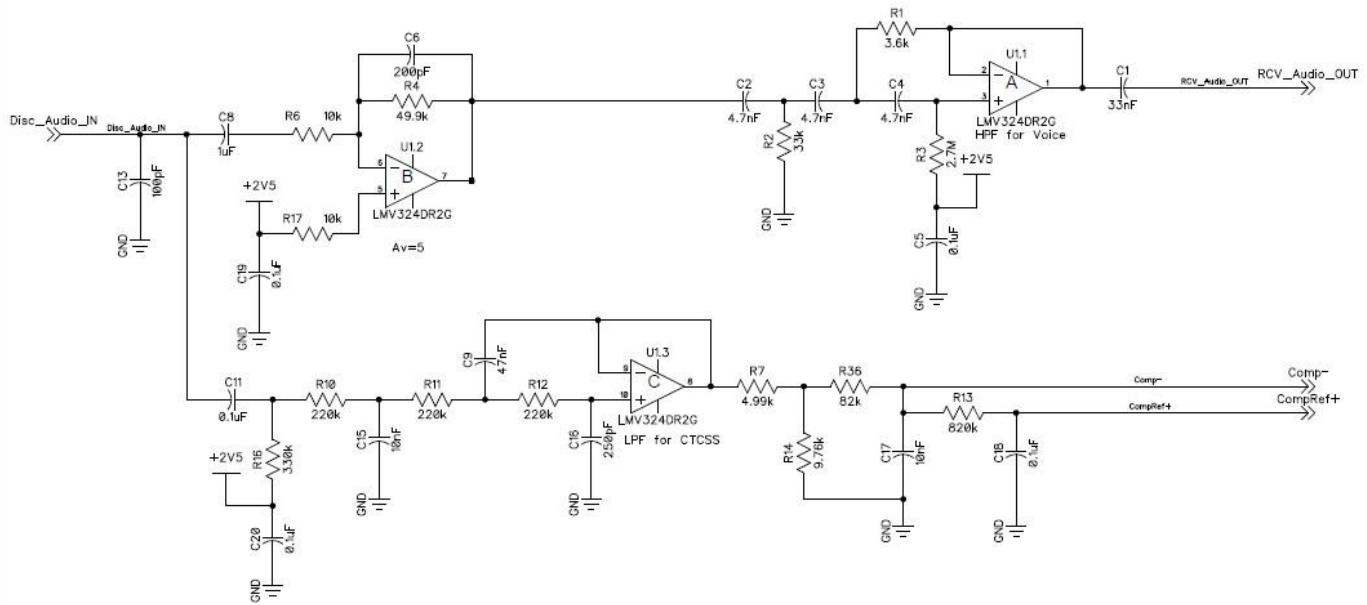
Note: In addition to the standard CTCSS tones, the ADR supports non-standard ones as well and these are generally found in many modern day radios

T#	Freq	DIP SWITCHES						T#	Freq	DIP SWITCHES					
		6	5	4	3	2	1			6	5	4	3	2	1
1	67	OFF	OFF	OFF	OFF	OFF	OFF	24	156.7	OFF	ON	ON	OFF	OFF	ON
1a	69.3	OFF	OFF	OFF	OFF	OFF	ON	24a	159.8	OFF	ON	ON	OFF	ON	OFF
2	71.9	OFF	OFF	OFF	OFF	ON	OFF	25	162.2	OFF	ON	ON	OFF	ON	ON
3	74.4	OFF	OFF	OFF	OFF	ON	ON	25a	165.5	OFF	ON	ON	ON	OFF	OFF
4	77	OFF	OFF	OFF	ON	OFF	OFF	26	167.9	OFF	ON	ON	ON	OFF	ON
5	79.7	OFF	OFF	OFF	ON	OFF	ON	26a	171.3	OFF	ON	ON	ON	ON	OFF
6	82.5	OFF	OFF	OFF	ON	ON	OFF	27	173.8	OFF	ON	ON	ON	ON	ON
7	85.4	OFF	OFF	OFF	ON	ON	ON	27a	177.3	ON	OFF	OFF	OFF	OFF	OFF
8	88.5	OFF	OFF	ON	OFF	OFF	OFF	28	179.9	ON	OFF	OFF	OFF	OFF	ON
9	91.5	OFF	OFF	ON	OFF	OFF	ON	28a	183.5	ON	OFF	OFF	OFF	ON	OFF
10	94.8	OFF	OFF	ON	OFF	ON	OFF	29	186.2	ON	OFF	OFF	OFF	ON	ON
10a	97.4	OFF	OFF	ON	OFF	ON	ON	29a	189.9	ON	OFF	OFF	ON	OFF	OFF
11	100	OFF	OFF	ON	ON	OFF	OFF	30	192.8	ON	OFF	OFF	ON	OFF	ON
12	103.5	OFF	OFF	ON	ON	OFF	ON	30a	196.6	ON	OFF	OFF	ON	ON	OFF
13	107.2	OFF	OFF	ON	ON	ON	OFF	30b	199.5	ON	OFF	OFF	ON	ON	ON
14	110.9	OFF	OFF	ON	ON	ON	ON	31	203.5	ON	OFF	ON	OFF	OFF	OFF
15	114.8	OFF	ON	OFF	OFF	OFF	OFF	31a	206.5	ON	OFF	ON	OFF	OFF	ON
16	118.8	OFF	ON	OFF	OFF	OFF	ON	32	210.7	ON	OFF	ON	OFF	ON	OFF
17	123	OFF	ON	OFF	OFF	ON	OFF	33	218.1	ON	OFF	ON	OFF	ON	ON
18	127.3	OFF	ON	OFF	OFF	ON	ON	34	225.7	ON	OFF	ON	ON	OFF	OFF
19	131.8	OFF	ON	OFF	ON	OFF	OFF	34a	229.1	ON	OFF	ON	ON	OFF	ON
20	136.5	OFF	ON	OFF	ON	OFF	ON	35	233.6	ON	OFF	ON	ON	ON	OFF
21	141.3	OFF	ON	OFF	ON	ON	OFF	36	241.8	ON	OFF	ON	ON	ON	ON
22	146.2	OFF	ON	OFF	ON	ON	ON	37	250.3	ON	ON	OFF	OFF	OFF	OFF
23	151.4	OFF	ON	ON	OFF	OFF	OFF	37a	254.1	ON	ON	OFF	OFF	OFF	ON

PC Board layout



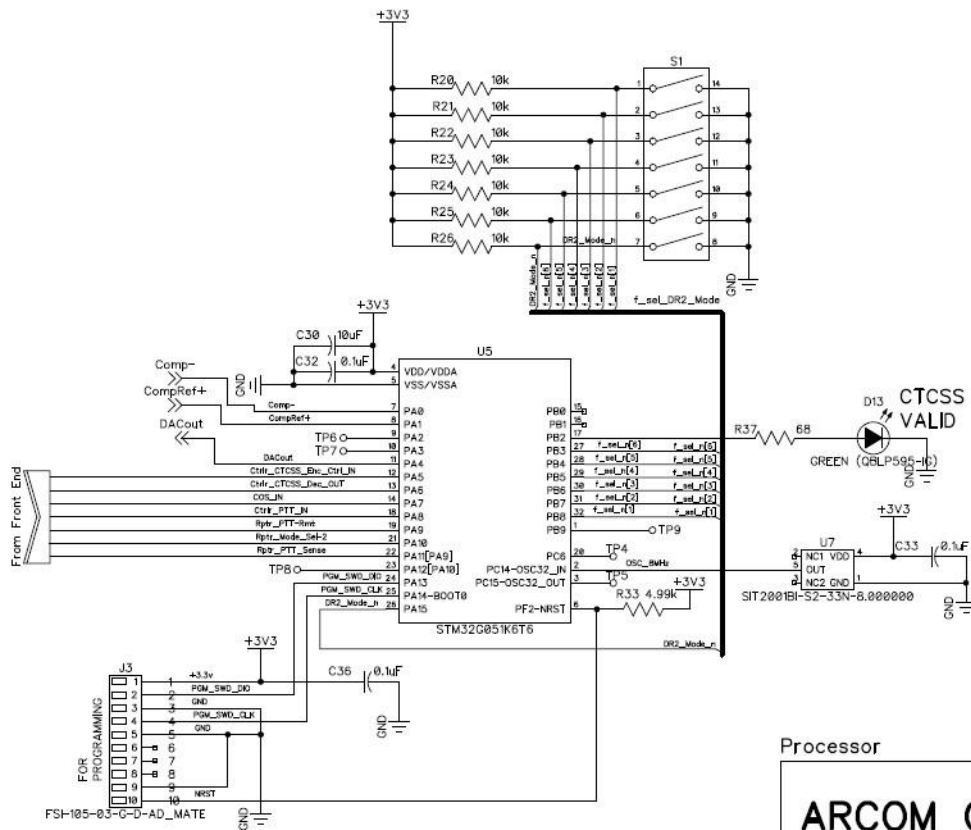




Receive Audio Filters and Amplifiers

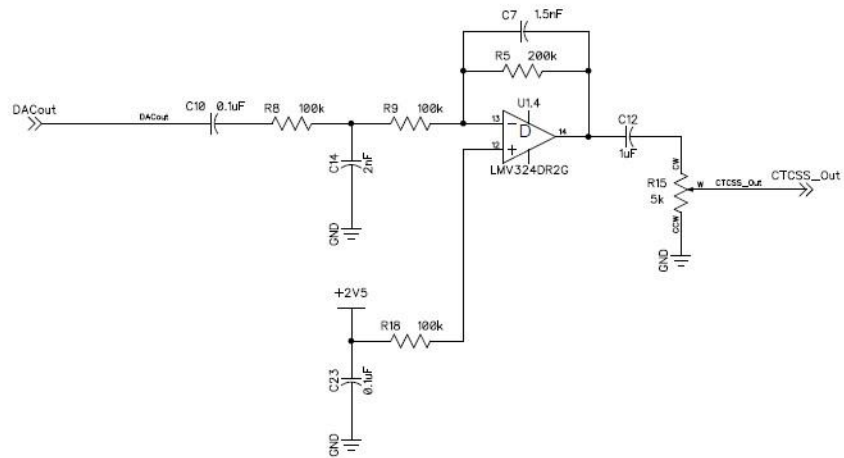
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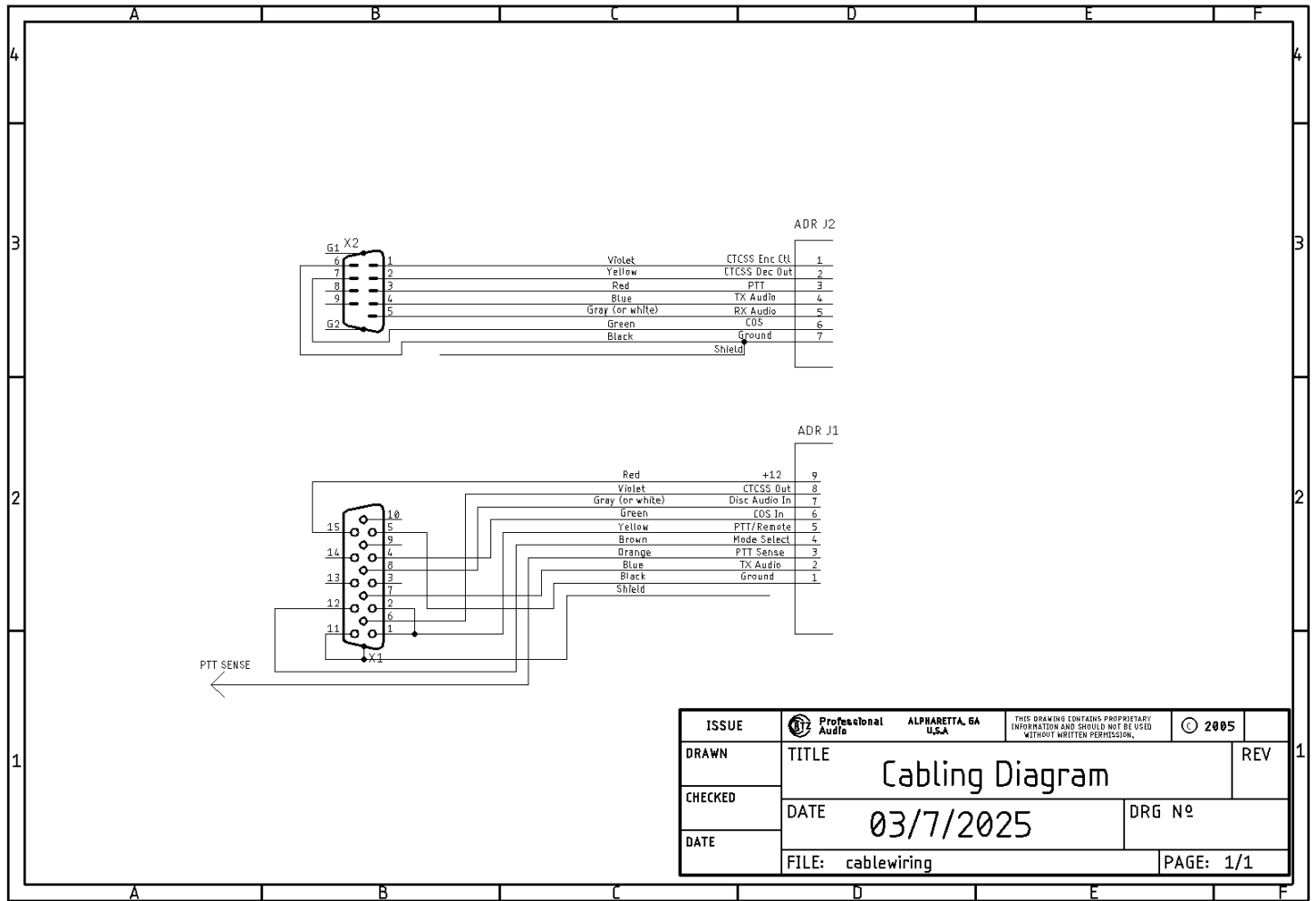
Processor

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CTCSS Final Filter & Amplifier

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DATE	FILE: cablewiring				PAGE: 1/1