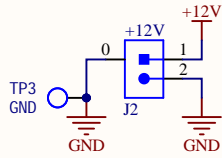
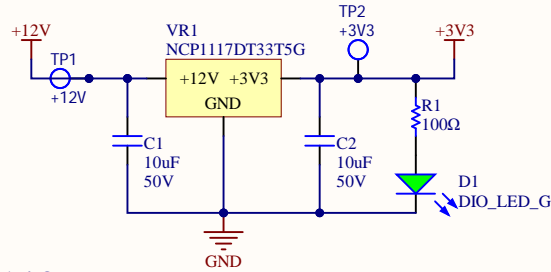


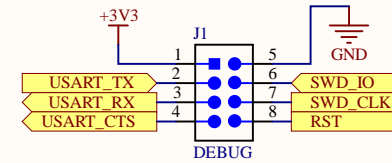
## 12V Connector



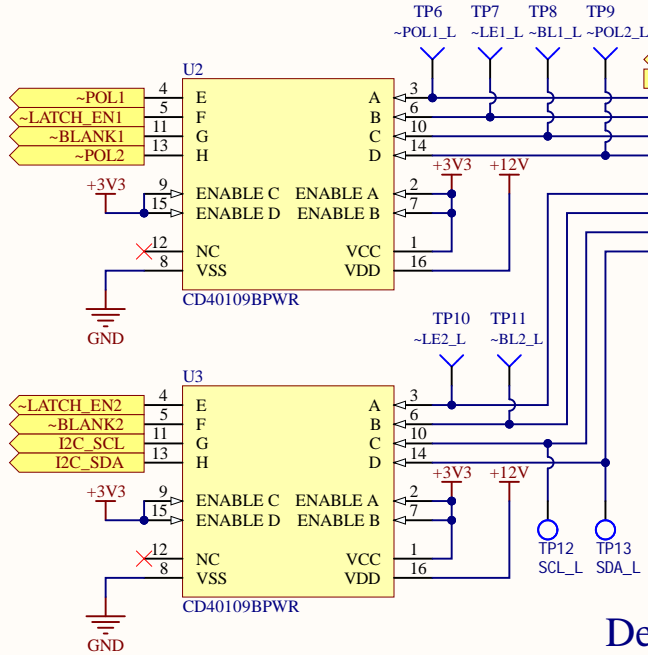
## 12-3.3V LDO



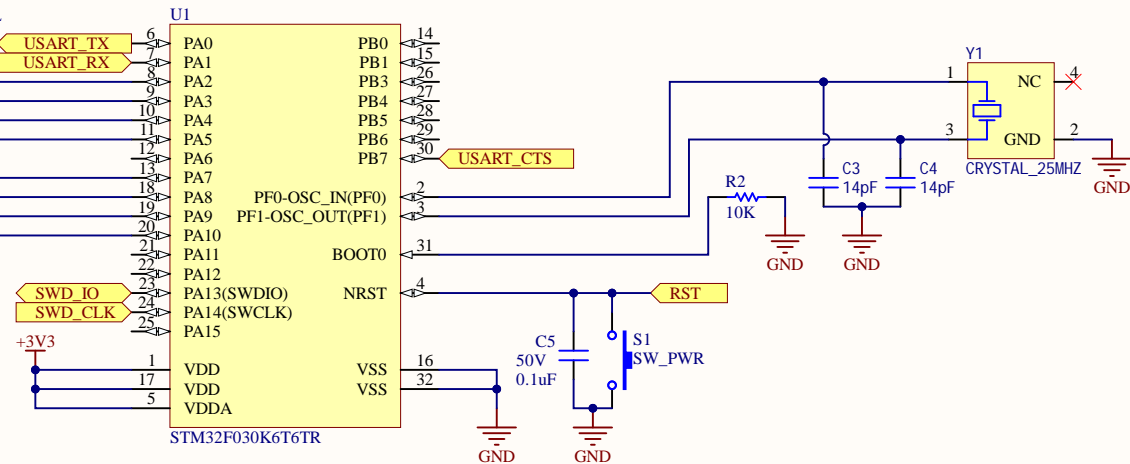
## Programming Port



## Level Shifters

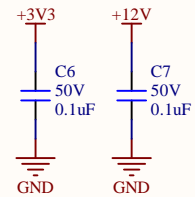


## MCU

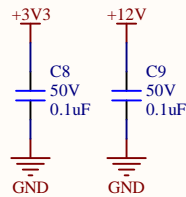


## Decoupling Caps

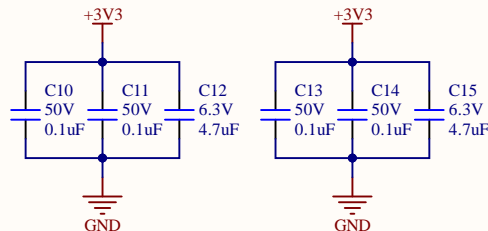
For level shifter U1



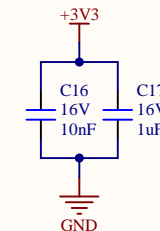
For level shifter U2



2x VDD pin caps

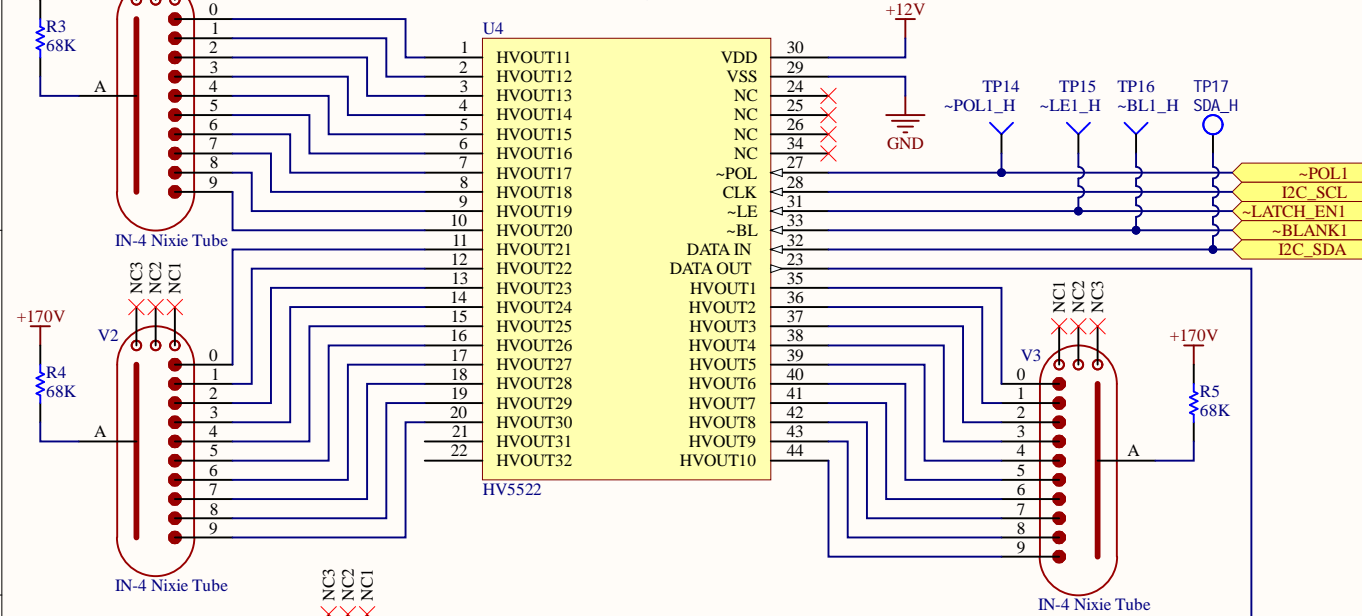


VDDA pin caps

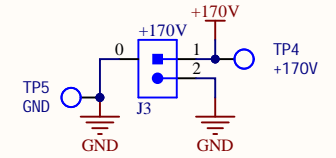


Title		
Size	Number	Revision
A4		
Date:	4-20-2020	Sheet of
File:	C:\Users\...\MCU.SchDoc	Drawn By:

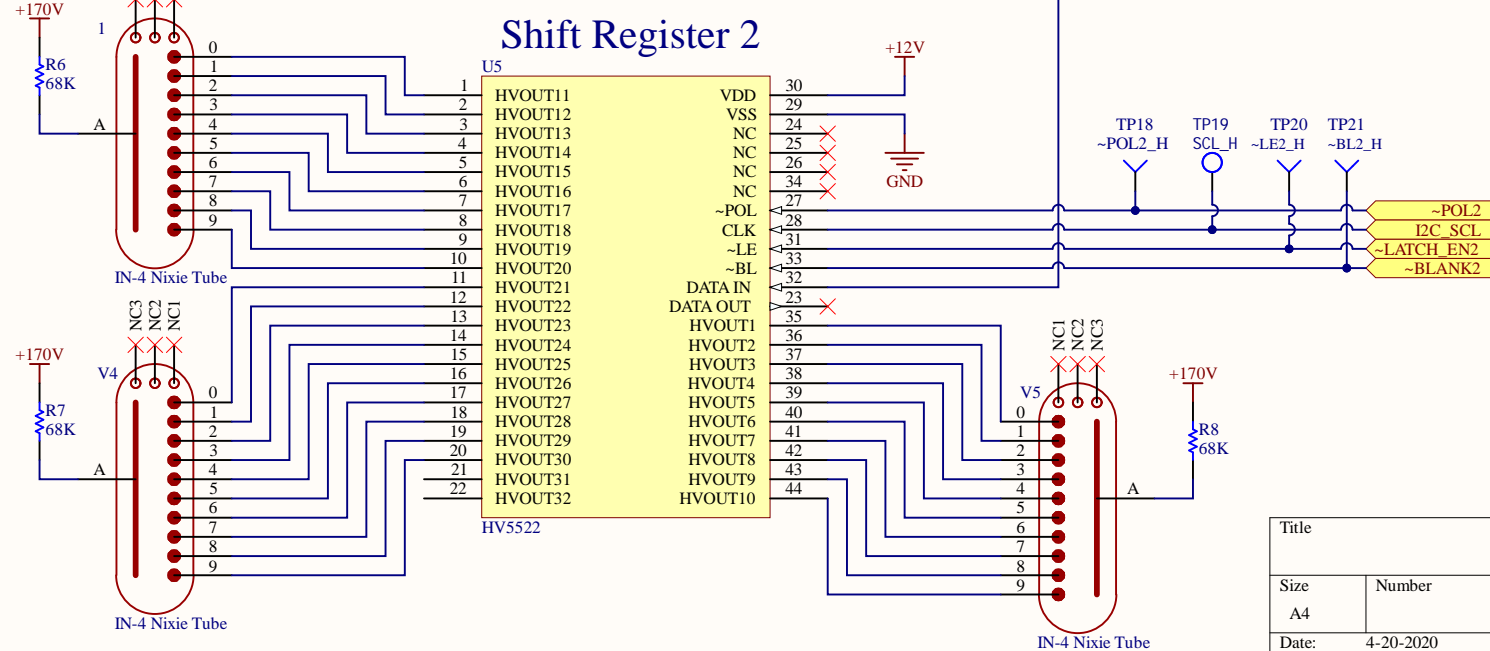
## Shift Register 1



## 170V Connector



## Shift Register 2



Title		
Size	Number	Revision
A4		
Date:	4-20-2020	Sheet of
File:	C:\Users\...\Nixie Tubes.SchDoc	Drawn By:

1	2	3	4
A			A
B			B
C			C
D			D
1	2	3	4

Title

Size

A4

Number

Revision

Date:

4-20-2020

Sheet of

File:

C:\Users\...\Support.SchDoc

Drawn By:

Comment	Description	Designator	Footprint	LibRef	Quantity
IN-4 Nixie Tube		1, V2, V3, V4, V5		IN-4 Nixie Tube	5
10uF	CAP CER 10UF 50V X5R 1206	C1, C2	CAPC1206(3216)	CAP_10uF_50V_1206	2
CAP_14pF_50V_0603	CAP CER 14PF 50V COG/NPO 0603	C3	CAPC0603(1608)55_N	CAP_14pF_50V_0603	1
	CAP CER 14PF 50V COG/NPO 0603	C4		CAP_14pF_50V_0603	1
CAP_0.1uF_50V_0603	CAP CER 0.1UF 50V X7R 0603	C5, C6, C7, C8, C9, C10, C11, C13, C14	CAPC0603(1608)55_N	CAP_0.1uF_50V_0603	9
CAP_4.7uF_0603	CAP CER 4.7UF 6.3V X5R 0603	C12, C15	CAPC0603(1608)55_N	CAP_4.7uF_0603	2
CAP_10nF_0603	CAP CER 10000PF 16V X7R 0603	C16	CAPC0603(1608)55_N	CAP_10nF_0603	1
CAP_1uF_16V_0603	CAP CER 1UF 16V Y5V 0603	C17	CAPC0603(1608)55_N	CAP_1uF_16V_0603	1
DIO_LED_G	LED GREEN DIFFUSED 0805 SMD	D1	LED_0805_LINE	DIO_LED_G	1
DEBUG	CONN HEADER VERT 8POS 2.54MM	J1	HEADER_2X4	HEADER 4X2	1
+12V	CONN HEADER SMD RIGHT ANGLE 2MM PITCH	J2	MOLEX-5024940270	CON_2M_SM_RA	1
+170V	CONN HEADER SMD RIGHT ANGLE 2MM PITCH	J3	MOLEX-5024940270	CON_2M_SM_RA	1
RES_100Ω_0603	RES SMD 100 OHM 1% 1/10W 0603	R1	RESC0603(1608)_N	RES_100Ω_0603	1
RES_10K_0603	RES SMD 10K OHM 5% 1/10W 0603	R2	RESC0603(1608)_N	RES_10K_0603	1
RES_68K_1210	RES SMD 68K OHM 1% 0.75W 1210	R3, R4, R5, R6, R7, R8	RESC3225X60N	RES_68K_1210	6
SW_PWR	Power Switch (Red)	S1	PTS830GM140	SW_PWR	1
+12V	Loop testpoint through-hole pad	TP1	TESTPOINT_LOOP	TESTPOINT_LOOP	1
+3V3	Loop testpoint through-hole pad	TP2	TESTPOINT_LOOP	TESTPOINT_LOOP	1
GND	Loop testpoint through-hole pad	TP3, TP5	TESTPOINT_LOOP	TESTPOINT_LOOP	2
+170V	Loop testpoint through-hole pad	TP4	TESTPOINT_LOOP	TESTPOINT_LOOP	1
-POL1_L	TESTPOINT_SMD	TP6	TESTPOINT	TESTPOINT_SMD	1
-LE1_L	TESTPOINT_SMD	TP7	TESTPOINT	TESTPOINT_SMD	1
-BL1_L	TESTPOINT_SMD	TP8	TESTPOINT	TESTPOINT_SMD	1
-POL2_L	TESTPOINT_SMD	TP9	TESTPOINT	TESTPOINT_SMD	1
-LE2_L	TESTPOINT_SMD	TP10	TESTPOINT	TESTPOINT_SMD	1
-BL2_L	TESTPOINT_SMD	TP11	TESTPOINT	TESTPOINT_SMD	1
SCL_L	Loop testpoint through-hole pad	TP12	TESTPOINT_LOOP	TESTPOINT_LOOP	1
SDA_L	Loop testpoint through-hole pad	TP13	TESTPOINT_LOOP	TESTPOINT_LOOP	1
-POL1_H	TESTPOINT_SMD	TP14	TESTPOINT	TESTPOINT_SMD	1
-LE1_H	TESTPOINT_SMD	TP15	TESTPOINT	TESTPOINT_SMD	1
-BL1_H	TESTPOINT_SMD	TP16	TESTPOINT	TESTPOINT_SMD	1
SDA_H	Loop testpoint through-hole pad	TP17	TESTPOINT_LOOP	TESTPOINT_LOOP	1
-POL2_H	TESTPOINT_SMD	TP18	TESTPOINT	TESTPOINT_SMD	1
SCL_H	Loop testpoint through-hole pad	TP19	TESTPOINT_LOOP	TESTPOINT_LOOP	1
-LE2_H	TESTPOINT_SMD	TP20	TESTPOINT	TESTPOINT_SMD	1
-BL2_H	TESTPOINT_SMD	TP21	TESTPOINT	TESTPOINT_SMD	1
STM32F030K6T6TR	STMICROELECTRONICS - STM32F030K6T6TR - ARM-MCU, STM32 Family STM32F0 Series Microcontrollers, ARM Cortex-M0, 32bit, 48 MHz, 32 KB, 4 KB	U1	STM-LQFP32_M	STM32F030K6T6TR	1
CD40109BPWR	CMOS Quad Low-to-High Voltage Level Shifter, 3 to 18 V, -55 to 125 degC, 16-Pin TSSOP (PW16), RoHS, Tape and Reel	U2, U3	LVL_SHIFTER_PW001 6A_M	LEVEL_SHIFTER	2
HV5522	IC 32BIT SRL CMOS 220V 44QFP; Shift Shift Register 1 Element 32 Bit 44-PQFP (10x10)	U4, U5	*OFF80P1320X1320X2 70-44N	HV5522	2
IN-4 Nixie Tube		V1	IN-4	IN-4 Nixie Tube	1
NCP1117DT33T5G	IC REG LINEAR 3.3V 1A DPAK	VR1	VOLTAGE_REGULATOR	12V0_3V3_LDO	1
CRYSTAL_25MHZ	CRYSTAL 25.0000MHZ 12PF SMD	Y1	AVX-CX2520DB32000DOGE JZ1-4_V	CRYSTAL_25MHZ	1