HS402 DIY Oscilloscope

Components List

PCB Version: 1.6 - 2.1

Designator	Quantity	Value	Description	Footprint	Comment
R1, R5	2	1K	Resistor	C0805	
R4 (R8 in V1.6)	1	1K	Resistor	C0805	Option 1
R2, R6	2	910K	Resistor	C0805	
R3, R7	2	100K	Resistor	C0805	
R9	1	1K	Potentiometer	VR5	Option 1
C1, C5	2	20pF var	Adjustable Capacitor	Capacitor Var	3*4mm
C2, C6	2	100nF	Capacitor	C0805	use 1uF to improve AC bandwidth at lower frequencies (<100Hz)
C3, C7	2	47pF	Capacitor	C0805	
C4	1	0.1uF	Capacitor	C0805	Option 2
C8	1	47uF - 6.3V	Capacitor	C0805	Option 1
C9	1	470nF	Capacitor	C0805	
D1, D2	2	BAV99	Diodes	SOT23	
U1, U3	2	MCP6S21	PGA	SOP-8	MSOP-8 in V1.6
U2	1	AMS1117-1.2	Linear Regulator	SOT223	Option 1
U4	1	REF2033	Linear Regulator	SOT23-5	Option 2
K1, K2	2	AQY210EH	PhotoMOS	PNSC-DIP4(SMT)_V	
MCU	1	STM32F411	STM32 Black Pill Dev. Board	Black Pill	(or STM32F401)
P2, P5	2	BNC	BNC Elbow Connector	BNC	
J1	1	Header 1	Header, 1-Pin	PIN1	Vref, Option 2, removed after PCB V.1.6
IN	1	Header 5	Header, 5-Pin	HDR1X5	I2C Buttons Module
OUT	1	Header 4	Header, 4-Pin	HDR1X4	I2C Modules
SP	1	Header 2	Header, 2-Pin	HDR1X2	Serial Port (for flashing)
PWM	1	Header 2	Header, 2-Pin	HDR1X2	PWM Output

Revision History:

V2.1: C1, C5 to 20pF since the value needed is quite low, some 30pF var capacitor do not allow to regulate around 6pF.

V2.0: Removed J1, directly use PA2 pin for Vref, PWM become 2 pin header, added SP header (Serial Port), U1,U3 use SOP module.

V1.6: Removed duplicated R8, Added comment for C2, C6.