Spezifikation eigene Leiterplatte

Blockschaltbild

Power

Core

Analog

Digital/Interface

Stromversorgung

DC/DC Converter In: 5-24V Out: 3.3V, max. 3A Embedded ST-LINK/V2-1

SWD-Interface

8x Single-Ended ADC mit SGA x1 x10 x50 und Sp.-Teiler x1/30 x1/3

MicroSD Slot

8x RGB-LEDs via latched Shift-Registers

2x Potentiometer

2 Achsen Joystick

QVGA LCD (320x240) mit resistive Touch

5-Weg Taster

Rotary Encoder, gerastert

USB mit Serial + DFU

SPI, I2C, USART

3-Phasen Brücke

verwendbar als:

- H-Brücke
- Push-Pull
- Open-Drain

Microcontroller

STMicroelectronics ARM Cortex M4 + FPU STM32F411VC

3x I2C/USART, 5x SPI 11x Timer, 12bit ADC

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Kostenrelevante Bauteile: (ohne 0805 R / C)

Qty VALUE	MF	DESCRIPTION	Dist.	Order Nr.	Price	Total
Power						
1 AP63203WU-7	Diodes inc	Schaltspannungsregler DCDC Conv HV Buck TSOT26 T&R 3K	Mouser	621-AP63203WU-7	0.76	
1 7447779006	Wurth	Festinduktivitäten WE-PD 7345 6.8uH 2.91A .033Ohm	Mouser	710-7447779006	1.91	
3 0ZCH0020FF2E	Bel-Fuse	Rückstellbare Sicherungen - PPTC Fuse 0.2A Haltestrom 0.4A Auslösestrom 30V	Mouser	530-0ZCH0020FF2E		
2 B360A-13-F	Diodes inc	Schottky Dioden & Gleichrichter 60V 3A	Mouser	621-B360A-F	0.14	
6 FM240A	Rectron	40V 2A SMB Diode	Mouser	583-FM240A	0.093	0.55
1 TB007-508-02BE	CUI	2-Pol Anschlussblock schraubbar, 5.08mm	Mouser	490-TB007-508-02BE	0.203	0.20
3 TB007-508-04BE	CUI	4-Pol Anschlussblock schraubbar, 5.08mm	Mouser	490-TB007-508-04BE	0.405	1.21
1 TB007-508-05BE	CUI	5-Pol Anschlussblock schraubbar, 5.08mm	Mouser	490-TB007-508-05BE	0.602	0.60
2 ESW227M050AH2AA	Kemet	Aluminium-Elektrolyt-Kondensatoren - Radial bedrahtet 50V 220uF 105C 5k Hour Radial	Mouser	80-ESW227M050AH2AA	0.314	0.62
1 EEU-FR1A471	Panasonic	Aluminium-Elektrolyt-Kondensatoren - Radial bedrahtet 10VDC 470uF 20% L/S=3.5mm	Mouser	667-EEU-FR1A471	0.244	0.24
2 ESW226M010AC3AA	Kemet	Aluminium-Elektrolyt-Kondensatoren - Radial bedrahtet 10V 22uF 105C 3k Hour Radial	Mouser	80-ESW226M010AC3AA	0.078	0.15
4 74279220601	Wurth	Ferritperle, 0805 [Metrisch 2012], 600 ohm, 2.1 A, Baureihe WE-MPSB, 0.08 ohm, ± 25%	Farnell	2 467189	0.27	1.0
1 SMAJ28AQ-13-F	Diodes inc	ESD-Entstörer/TVS-Dioden 400W Transient Voltage Suppressor	Mouser	621-SMAJ28AQ-13-F	0.288	0.28
3		MOSFET NFET DPAK 60V 10A	Mouser	-	1	
3		MOSFET PFET DPAK 60V 10A	Mouser		1.1	3
3 2N7002NXAKR	Nexperia	MOSFET 60V N-CHANNEL SGL TRENCH	Mouser	771-2N7002NXAKR	0.09	0.2
Core	,					
1 STM32F411VCT6	STM	ARM Mikrocontroller - MCU 16/32-BITS MICROS	Mouser	511-STM32F411VCT6	5.67	5.6
1 ABS25-32.768KHZ-6-T	Abracon	Quarze 32.768KHz 6pF 20ppm -40C +85C	Mouser	815-ABS25-32.768K6-T		
2 SN65220DBVT	TI	ESD-Entstörer/TVS-Dioden Single USB Port	Mouser	595-SN65220DBVT	0.8	
2 10118192-0002LF	Amphenol FCI		Mouser	649-10118192-0002LF	0.4	
1 HC49SDLF-8.00MHz	FOX	Quarze 8MHz 12pF -20C +70C 30ppm	Mouser	559-FOXSDLF/080-12		
2 77311-118-02LF	FCI	CONN HEADER VERT 2POS 2.54MM	Mouser	649-77311-118-02LF	0.123	0.24
1 M20-7820646	Harwin	Sockel & Kabelgehäuse 6 PIN SIL VERTICAL SOCKET TIN	Mouser	855-M20-7820646		
1 STM32F103CBT6	STM	ARM Mikrocontroller - MCU 32BIT Cortex M3 128K MED Performance LN	Mouser	511-STM32F103CBT6	5.21	
1 HC49SDLF-8.00MHz	FOX	Quarze 8MHz 12pF -20C +70C 30ppm	Mouser	559-FOXSDLF/080-12		
Analog	TOX	Qualize of the 20c 170c 30ppm	IVIOUSCI	333 1 0 / 3 / 2 7 6 / 6 / 6 / 6 / 6 / 6 / 6 / 6 / 6 / 6	0.302	0.50
2 PTV09A-4015U-B103	Bourns	Potentiometer 10K 20% 9MM CARBON POT	Mouser	652-PTV09A-4015UB103	0.68	1.3
1 FSM6JH	TE	Sensorschalter SPST OFF-(ON) Round pushbutton	Mouser	506-FSM6JH	0.11	
1 SKRHABE010	Alps Alpine	Multi-direktionale Schalter 4-directn cntr push W/boss 200K Cycles	Mouser	688-SKRHAB	2.46	
1 2765	Adafruit	Adafruit Zubehör Mini 2-Axis Analog Thumbstick	Mouser	485-2765	2.29	
3 BAV99HMFHT116	ROHM	Dioden (Allzweck, Leistung, Schaltung) 100V Vrm; 500mA Ifm Swtch Diode SOT-23	Mouser	755-BAV99HMFHT116		
1 PEC12R-2217F-S0024	Bourns	Encoder VERT 24DET 24PULSE 17.5mm SHAFT SPST SW	Mouser	652-PEC12R-2217F-S24	1.1	
2 MCP6G04-E/ST	Microchip	Sonderverstärker Quad Selectable Gain Amplifiers	Mouser	579-MCP6G04-E/ST	0.94	
Digital/Interface	IVIICIOCIIIP	Solider verstarker Quad Selectable dam Ampimers	iviousei	379-IVICP0G04-E/31	0.94	1.0
8 CLMVC-FKC-CGJJM569aBB7a343	Cros	Standard LEDs CMD DCD CMD	Mauran	044 CLNAVCECOADD7A242	0.10	1.7
3 SN74HCS595PWR	Cree	Standard-LEDs - SMD RGB SMD 8-bit shift register with Schmitt-trigger inputs and 3-state output	Mouser	941-CLMVG569ABB7A343 595-SN74HCS595PWR	0.16	
	111		Mouser			
1 M20-7820446	Harwin	Sockel & Kabelgehäuse 4 PIN SIL VERTICAL SOCKET TIN	Mouser	855-M20-7820446	0.62	
1 1140084168	Amphenol	Speicherkartenverbinder Micro SD 8 Pin PCB Gold	Mouser	523-114-00841-68	1.29	
1		Display LCD Touch 2.4" QVGA	ebay	284089088933	8	
					TOTAL	46.84

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