X1 — VCC, D-, D+, ID, GND — USB_DM, USB_DP — U5V — R5 100k — GND

U1 LM1117IMPX-3.3 — IN OUT TAB GND — C3 10uF 10V — C5 0.1uF 25V — R2 609R — R4 1k — R1 0 — C4 100uF 6.3V — 3V3 — 5V — GND

VBAT — BAT1 BAT CR2032 — GND

U2 ESP8366 — GND, GPIO2, GPIO0, URXD — UTXD, CH_PD, GPIO16, VCC — ESP_TXD — ESP_RXD — R7 0 — C7 68uF 25V — 3V3 — GND

C1 0,1 uF 25V — B1 BTN_1 — R3 10k — 3V3 STM — GND
B2 BTN_1 — R6 10k — C6 0,1 uF 25V — 3V3 STM — GND
R8 10k — ENC1 ENC_1 ENC_G1 — 3V3 STM
R12 10k — ENC2 ENC_2 — 3V3 STM — GND

R9 0 — C2 100 uF 16V — GND — X2 PLD_2.54_4S — U5V — 5V — GND

U3 LM1117IMPX-3.3 — IN OUT TAB GND — C8 10uF 10V — C10 0.1uF 25V — R11 2.27k — R13 1k — R10 0 — C9 100uF 6.3V — 1V8 — 5V — GND

VAR_1 — VAR_2 — VAR_3 — 3V3 STM — VARIABLE — GND

U4A STM32F415RGT6 — PA0-WKUP(PA0), PA1, PA2, PA3, PA4, PA5, PA6, PA7, PA8, PA9, PA10, PA11, PA12, PA13(JTMS-SWDIO), PA14(JTCK-SWCLK), PA15(JTDI) — PB0, PB1, PB2-BOOT1(PB2), PB3(JTDO/TRACESWO), PB4(NJTRST), PB5, PB6, PB7, PB8, PB9, PB10, PB11, PB12, PB13, PB14, PB15 — PC0, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14-OSC32_IN(PC14), PC15-OSC32_OUT(PC15) — PH0-OSC_IN(PH0), PH1-OSC_OUT(PH1) — PD2 — BOOT0 — NRST — VCAP_1, VCAP_2

VARIABLE — C11 100nF 25V — GND — ESP_RXD, ESP_TXD, ESP_GPIO0, VS_SCLK, VS_SO, VS_SI — USB_DM, USB_DP, SWDIO, SWCLK — VS_DREQ — ESP_GPIO2 — ESP_GPIO16 — LCD_RST, LCD_CE, LCD_SCK, LCD_DC, LCD_HL — LCD_DIN — VS_CS, VS_RESET, VS_DCS — BTN2, BTN1, ENC1, ENC2

C14 22pF 25V — ZQ2 32.768 Khz — C19 22pF 25V — GND

ZQ1 KX-KT (hc-49sm) 8.0 MГц — C12 22pF 10V — GND — Q1, Q2 — BOOT0 — C15 2.2uF 25V — C16 2.2uF 25V — GND — VCAP1, VCAP2

3V3 STM — GND — R14 R — R15 R — B3 BTN_1 — BOOT0

U4B STM32F415RGT6 — VBAT, VDD, VDD, VDD, VDD, VDD, VDDA — VSS, VSS, VSSA — 3V3 STM — VBAT — GND

R24 0 — C23 0.1uF 25V, C24 0.1uF 25V, C25 0.1uF 25V, C26 0.1uF 25V, C27 0.1uF 25V — 3V3 — 3V3 STM — GND

X4 PLD_2.54_4S — SWCLK, SWDIO — GND — 3V3 STM

U5 LCD — RST, CE, DC, DIN, SCK, VCC, HL, GND — LCD_RST, LCD_CE, LCD_DC, LCD_DIN, LCD_SCK — 3V3 — GND

VT2 IRLML2803 — R17 10k — R18 10k — VT1 IRLML5203TRPbF — LCD_HL — 3V3 STM — 3V3 — GND

VS10xx (main audio IC):
!RESET!, !CS!, DREQ, SO, SI, SCLK, !DCS!/BSYNC — RX, TX — XTALI/MCLK, XTALO — VCO — GPIO0, GPIO1, GPIO2/DCLK, GPIO3/SDATA, GPIO4/I2S_LROUT, GPIO5/I2S_MCLK, GPIO6/I2S_SCLK, GPIO7/I2S_SDATA — !TEST! — IOVDD@6, IOVDD@14, IOVDD2@19 — CVDD@5, CVDD@7, CVDD@24, CVDD@31 — DGND@4, DGND@16, DGND@20, DGND@21, DGND@22, DGND@35 — LEFT, RIGHT, GBUF, LINE1/MICP, MICN, LINE2 — AVDD@38, AVDD@43, AVDD@45 — RCAP — AGND@37, AGND@40, AGND@41, AGND@47

VS_RESET, VS_CS, VS_DREQ, VS_SO, VS_SI, VS_SCLK, VS_DCS

C20 33pF 25V — R23 1M — C22 33pF 25V — ZQ3 KX-KT (hc-49sm) 12.228 MГц — GND

C17 10nF 25V — C18 10nF 25V — GND — GND1 TP — R19 20R — R20 20R — R28 R — R29 R — OUT_L1 — GND

X3 ST-025 — R22 10R — C21 47nF 25V — R30 R — R31 R — OUT_R1 — GND

R21 100k — GND — R25 100k — GND

R26 0 — C30 10uF 6.3V, C31 0.1uF 25V, C32 0.1uF 25V, C33 0.1uF 25V — 3V3 — GND

C34 10uF 6.3V, C35 0.1uF 25V, C36 0.1uF 25V, C37 0.1uF 25V — 1V8 — GND

C38 1uF 6.3V, C39 0.1uF 25V, C40 0.1uF 25V, C41 0.1uF 25V — 0,1uF 25V — R27 0 — 3V3 — GND

Sheet frame column numbers: 1 2 3 4 5 6 7 8 — Row letters: A B C D

Comment	Description	Designator	Footprint	LibRef	Quantity
BTN_1		B1, B2, B3	Button	BTN_1	3
BAT CR2032		BAT1	CH-224	BAT CR2032	1
0,1 uF 25V		C1, C6	0603	C	2
C		C2	1210	C	1
10uF 10V		C3, C8	0603	C	2
100uF 6.3V		C4, C9	0603	C	2
0.1uF 25V		C5, C10, C23, C24, C25, C26, C27	0603	C	7
68uF 25V		C7	1210	C	1
100nF 25V		C11	0603	C	1
22pF 10V		C12, C13	0603	C	2
22pF 25V		C14, C19	0603	C	2
2.2uF 25V		C15, C16	0603	C	2
10nF 25V		C17, C18	0603	C	2
33pF 25V		C20, C22	0603	C	2
47nF 25V		C21	0603	C	1
10uF 6.3V		C30, C34	0805	C	2
0,1uF 25V		C31, C32, C33, C35, C36, C37, C39, C40, C41	0603	C	9
1uF 6.3V		C38	0603	C	1
TP		ENC_1, ENC_2, ENC_G1, GND1, OUT_L1, OUT_R1, VAR_1, VAR_2, VAR_3	TP	TP	9
0		R1, R7, R9, R10, R24, R26, R27	0603	R	7
609R		R2	0603	R	1
10k		R3, R6, R8, R12, R17, R18	0603	R	6
1k		R4, R13	0603	R	2
100k		R5, R21, R25	0603	R	3
2.27k		R11	0603	R	1
R		R14, R15, R28, R29, R30, R31	0603	R	6
20R		R19, R20	0603	R	2
10R		R22	0603	R	1
1M		R23	0603	R	1
LM1117IMPX-3.3	800mA Low-Dropout Linear Regulator, 4-pin SOT-223	U1, U3	DSO-G3	LM1117IMPX-3.3	2
ESP8366		U2	ESP8366	ESP8366	1
STM32F415RGT6	ARM Cortex-M4 32-bit MCU+FPU, 210 DMIPS, 1024 kB Flash, 192 kB Internal RAM, 51 I/Os, 64-pin LQFP, -40 to 85 degC, Tray	U4	STM-LQFP64_N	STM32F415RGT6	1
LCD		U5	Nokia5510_LCD	Nokia5510_LCD	1
VS1053B		U6	LQFP48	VS1053B	1
IRLML5203TRPbF		VT1	SOT - 23 3PIN	IRLML5203TRPbF	1
IRLML2803	HEXFET Power MOSFET	VT2	SOT - 23 3PIN	IRLML2803	1
X1		X1	USB_micro	USB_Micro	1
PLD_2.54_4S		X2, X4	PLD254-4	PLD_127_4S	2
ST-025		X3	ST-025	ST-025	1
KX-KT (hc-49sm)		ZQ1, ZQ3	hc-49s	KX-KT (hc-49sm)	2
32.768 Khz		ZQ2	Q	Q	1