NOTES
*some MDP-M01s were harmed in the making of this schematic

- passives were measured out of circuit (might be slightly off)
- yes, both C1 and C01 exist, they are marked like that on the PCB
- I was unable to find information on the 5239B (used as LCD backlight current sink),
  pinout is a guess from looking at the PCB
- couldn't identify the exact model of buck converter, TLV62568DBVR is just a guess with
  matching package and pinout (hence, FB resistors may be incorrect for this model)
- couldn't identify exact model of MCU oscilator
- the small IC next to the USB being ESD is just a guess, TPD4E001DCKR-ES would be package
  and pinout compatible

USB
CN1
VCC
D-
D+
ID
GND
L3 1.8uH
L7 1.8uH L4 1.8uH
L5 1.8uH
L6 1.8uH
USB_5v
USB_dm
USB_dp
GND

USB ESD (probably)
USB_dp — IO1 IO4 — USB_5v
GND — GND VCC — USB_5v
USB_dm — IO2 IO3 — USB_5v
TPD4E001DCKR-ES

Power
R1 160k
U1
TLV62568DBVR
USB_5v — EN FB
GND — GND
SW VIN
L1 7uH
R4 36k — GND
USB_5v
VCC_main
C7 10uF C9 10uF C6 10uF C5 10uF
GND GND

Peripheral power
v1.21
R5 10k Q1 PNP
PERIPH_power_en_AL
R2 160k
VCC_main
VCC_periph

v1.3
I do not know what the intent was here but I triple checked this part (also, all components are populated)
Q1 PNP
GND
R2 160k
PERIPH_power_en_AL
VCC_main
VCC_periph

SPI Flash
U1
W25Q64JVSSIQ
C1 10uF — GND
SPI2_FLASH_cs — CS# VCC — VCC_periph
SPI2_FLASH_miso — DO IO3 — VCC_periph
VCC_periph — IO2 CLK — SPI2_FLASH_clk
GND — GND DI — SPI2_FLASH_mosi

IDK what this is
GND
C15 10nF R11 2M
screw
XHT-M1
K5

MCU
U2
STM32F103VCT6
v1.21 STM32F103VCT6
v1.3 GD32Fxxx

BTN_e — PE2 1
BTN_d — PE3 2
BTN_c — PE4 3
BTN_b — PE5 4
BTN_a — PE6 5
VCC_main — VBAT 6
ENC_menu_b — PC13-TAMPER-RTC 7
PC14-OSC32_IN 8
ENC_menu_a — PC15-OSC32_OUT 9
C21 1uF — VSS_5 10
GND — VDD_5 11
OSC_IN — OSC_IN 12
R6 10k — OSC_OUT 13
VCC_main — NRST 14
C12 1uF — PC0 15
GND — PC1 16
ENC_value_a — PC2 17
ENC_value_b — PC3 18
VSSA 19
VREF- 20
VREF+ 21
VCC_main — VDDA 22
PA0-WKUP 23
PA1 24
PA2 25
PA3 26
VCC_main — VSS_4 27
GND — VDD_4 28
PA4 29
PA5 30
PA6 31
PA7 32
PC4 33
PC5 34
PB0 35
LCD_reset_AL — PB1 36
PB2 37
LCD_d4 — PE7 38
LCD_d5 — PE8 39
LCD_d6 — PE9 40
LCD_d7 — PE10 41
LCD_d8 — PE11 42
LCD_d9 — PE12 43
LCD_d10 — PE13 44
LCD_d11 — PE14 45
LCD_d12 — PE15 46
PB10 47
LCD_backlight_sink_AH — PB11 48
GND — VSS_1 49
VCC_main — VDD_1 50
GND — C22 1uF

VDD_3 100 — VCC_main
VSS_3 99 — GND
PE1 98
PE0 97
PB9 96 — BUZZER_AH
PB8 95 — LED_red_AL
BOOT0 94
PB7 93
PB6 92 — LED_blue_AL
PB5 91 — SPI1_RF_mosi
PB4 90 — SPI1_RF_miso
PB3 89 — SPI1_RF_clk
PD7 88 — LCD_ne1_cs_AL
PD6 87 — RF_irq
PD5 86 — LCD_nwe_wr_AL
PD4 85 — LCD_noe_rd_AL
PD3 84
PD2 83 — RF_ce
PD1 82 — LCD_d3
PD0 81 — LCD_d2
PC12 80
PC11 79 — TP_PC11
PC10 78 — TP_PC10
PA15 77 — SPI1_RF_cs
PA14 76 — SWD_clk
VDD_2 75 — VCC_main
VSS_2 74 — GND
NC 73
PA13 72 — SWD_dio
PA12 71 — USB_dp
PA11 70 — USB_dm
PA10 69 — USB_presence
PA9 68
PA8 67
PC9 66
PC8 65
PC7 64
PC6 63
PD15 62 — LCD_d1
PD14 61 — LCD_d0
PD13 60 — LCD_a18_rs
PD12 59
PD11 58 — PWR_periph_en_AL
PD10 57 — LCD_d15
PD9 56 — LCD_d14
PD8 55 — LCD_d13
PB15 54 — SPI2_FLASH_mosi
PB14 53 — SPI2_FLASH_miso
PB13 52 — SPI2_FLASH_clk
PB12 51 — SPI2_FLASH_cs

C24 10uF — GND
VCC_main
C19 1uF — GND
USB_dm — SWD_clk
USB_dp — SWD_dio
USB_dp — USB_presence

MCU Osc
OSC_IN
C18 20pF
X1 8MHz
GND
C17 20pF
OSC_OUT
GND

Test Points
TP_PC10 — TP1
TP_PC11 — TP2
GND — TP3

Si24R1 RF Module
DL-SI24R1-A
C2 10uF — GND
L2 1.8uH
VCC_periph — VDD 1
GND 2
RF_ce — CE 3
SPI1_RF_cs — CSN 4
SPI1_RF_clk — SCK 5
SPI1_RF_mosi — MOSI 6
SPI1_RF_miso — MISO 7
RF_irq — IRQ 8

Rotary encoders
COD1
R01 10k R02 10k
ENC_value_a
VCC_periph
ENC_value_b
GND
COD2
R03 10k R04 10k
ENC_menu_a
VCC_periph
ENC_menu_b
GND

Buzzer
U7
R12 75 C01 10uF C4 10uF
VCC_periph
BUZZER_AH Q2 NPN GND
R3 160k
GND

Buttons
BTN_a — K5 (1 2 / 3 4)
BTN_b — K4 (1 2 / 3 4)
BTN_c — K3 (1 2 / 3 4)
BTN_d — K2 (1 2 / 3 4)
BTN_e — K1 (1 2 / 3 4)
GND

LED
LED_red_AL — R9 1.5k — D1 — VCC_periph
LED_blue_AL — R8 1.5k — D — VCC_periph

LCD Backlight sink
v1.21
U3 5239B
LCD_led_k1 — D1 1
LCD_led_k2 — D2 2
LCD_led_k3 — D3 3
LCD_led_k4 — D4 4
GND — GND 5
Vcc — VCC_periph
EN — LCD_backlight_sink_AH
NC
C8 1uF — GND

v1.3
U3 5239B
LCD_led_k1 — D1
LCD_led_k2 — D2
LCD_led_k3 — D3
LCD_led_k4 — D4
GND — GND
Vcc — VCC_periph
EN — LCD_backlight_sink_AH
NC
R5 10k — GND
C8 1uF — GND

LCD
U5
FPC40
LCD_d0 1
LCD_d1 2
LCD_d2 3
LCD_d3 4
GND 5
C10 1uF — GND 6
VCC_periph 7
LCD_ne1_cs_AL 8
LCD_a18_rs 9
LCD_nwe_wr_AL 10
LCD_noe_rd_AL 11
12
13
14
15
C11 1uF — GND 16
VCC_periph 17
LCD_led_k1 18
LCD_led_k2 19
LCD_led_k3 20
LCD_led_k4 21
GND 22
LCD_d4 23
LCD_d8 24
LCD_d9 25
LCD_d10 26
LCD_d11 27
LCD_d12 28
LCD_d13 29
LCD_d14 30
LCD_d15 31
LCD_reset_AL 32
VCC_periph 33
GND 34
C3 10uF — GND 35
LCD_d5 36
LCD_d6 37
LCD_d7 38
39
GND 40