



Commercial Membrane User Interface Board

Samll Emerge Membrane User Interface Board
Using NXP i.MX RT 144 pin processor

Changelog:

Schematic Q26047-001 REV A,
PCB Q25095-001:

Schematic Q26047-002 REV A,
PCB Q25095-002:

--HARDWARE REV BITS 0001.
--RECONFIGURE INPUTS AND OUTPUTS ON KEYPAD.
--R114 CHANGE FROM 1K TO 10K.
--MOVE SERIAL EEPROM TO ITS OWN BUS, I2C4.
--CHANGED 3.3V REG TO TPS74533 FOR BETTER ACCURACY.
--CHANGED C1,C2 FROM 47 TO 1500UF.
--ADD 1000pF CAPACITORS C166-C169 TO MEMBRANE KEYPAD INPUTS.

Schematic Q26047-002 REV B,
PCB Q25095-002:

--DEPOPULATE R74. POPULATE R70.

SCH Q26047-002 REV C :
PCB Q25095-003

Replace membrane connectors with 1mm pitch 22 ckt ZIF connectors
Add 237 ohm 0402 resistors to the membrane page
Update REV bits to 0010
Place a second CAN port and connector (remove R103 and R99)
Add R146 and R147
Change R39, R45, R49, R56, R60, R66, R67, and R68 to 1k 0402 resistors

SCH Q26047-002 REV D :
PCB Q25095-004

Add Assembly Test Points

SCH Q26047-002 REV E:
PCB Q25095-005

Update REV bits to 0011
Change U24 with APX803S05-268R-7
Change C132 to 0.01uF 0402
Change R120 to 10k
Add U27 to page 2

SCH Q25095-SCH_REV F :
PCB Q25095-PCB_REV F

Change naming convention to Qxxxxx-SCH/PCB_revx
Populate R110 and Depop R107 and R108 to update HW bits to REV 4
Swap U3 and U5 to Q19071-005
Swap U6 to Q19080-013
Swap U7 to Q19080-016
Swap R11, R13, R14, R15 to Q10015-289
Add D29 and D30
Add C173, C174, C175
Add R99, R103, R148, R149, R150, R151, R152, R153, R154, R155, R156, R157
Add U28, U29, U30

SCH Q25095-SCH_REV G :

Change R148 & R153 to 237k
Change R149 & R154 to 40.2k

PART NUMBERS FOR REFERENCE ONLY: PRINTED CIRCUIT ASSEMBLY 1248505

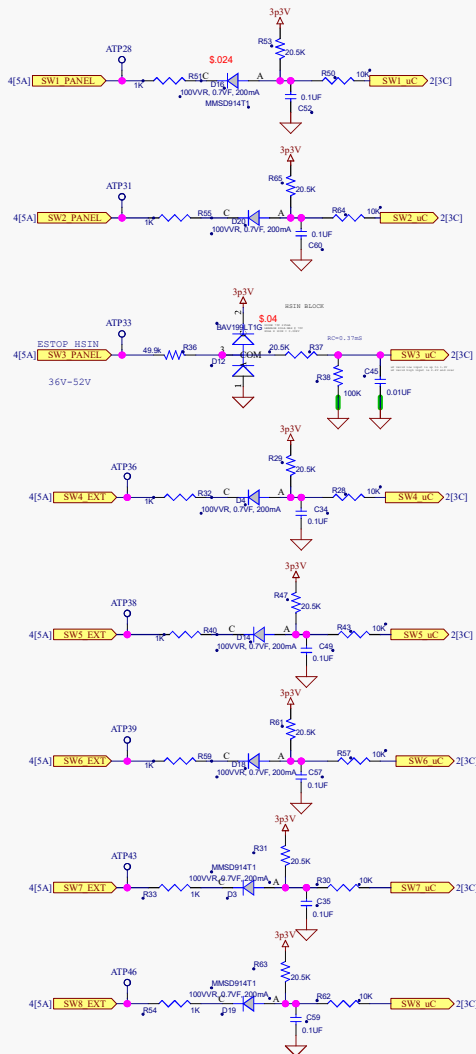
~~X~~ FW1 Q30119-001
~~X~~ PC1 Q25095-PCB_revF
~~X~~ SCHEMATIC1 Q25095-SCH_revF

MH3 MH4 MH2 MH1
Z21NP Z21NP Z21NP Z21NP
FID3 FID1 FID2
~~X~~ ~~X~~ ~~X~~ ~~X~~ ~~X~~ ~~X~~ ~~X~~

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Rev		Title	
G		RTOS UI BOARD	
Size:		HERCULES MEMBRANE UI	
C		Document Number	Engineer
Q25095_SCH		A. Lam	
Date:		12/9/2025	Sheet 1 of 6



A

B

C

D

A

B

C

D

