

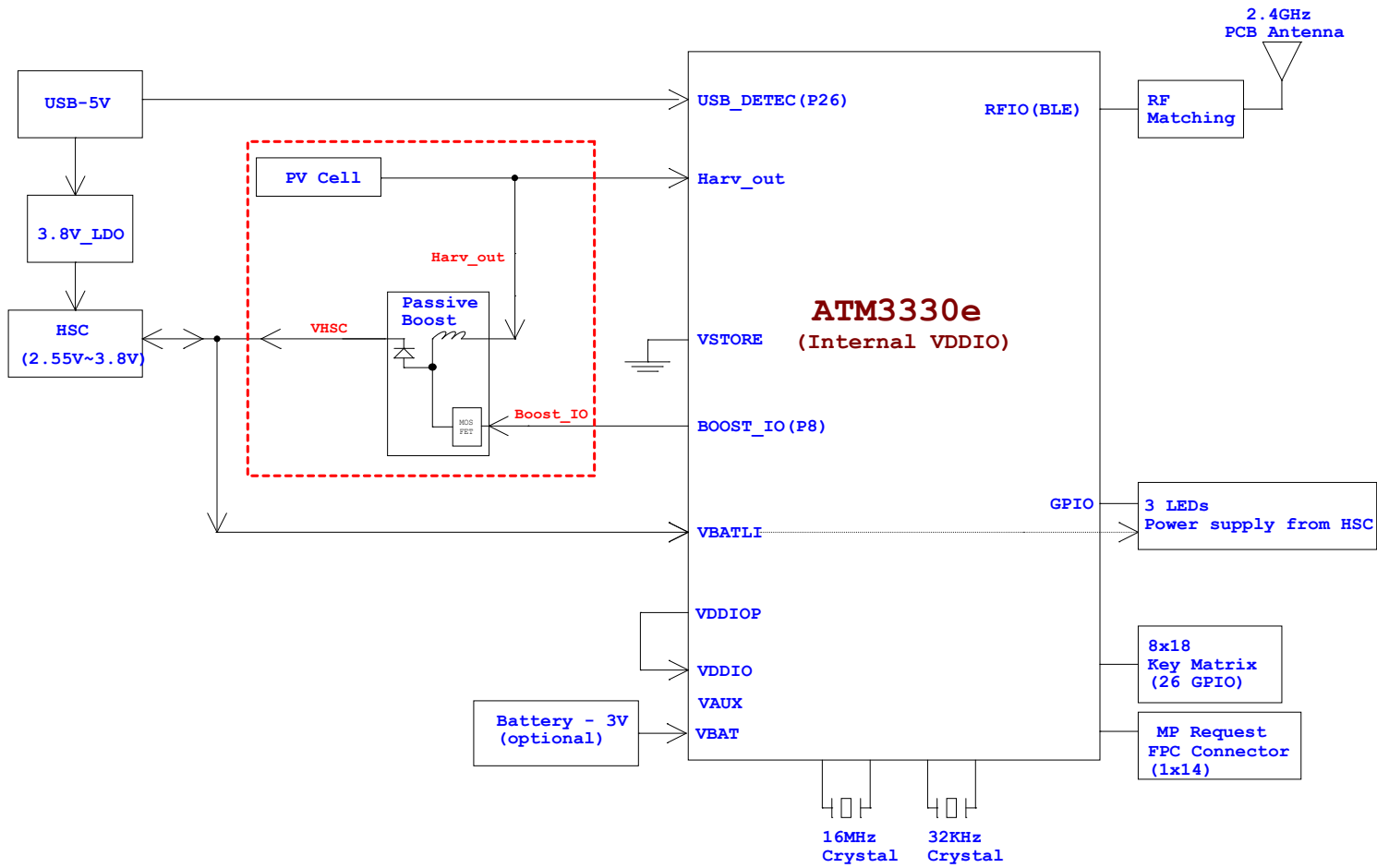
ATM3330e PV Keyboard Reference Design

Release Date	Revision	Design Eng.	Design Note
2022/09/21	Rev. 0.1	Chris TsaiLin	Preliminary release
2022/11/14	Rev. 0.2	Chris TsaiLin	<ol style="list-style-type: none"> 1. Change power supply of LED from VAUX to HSC. 2. Change R2, R155 and R156 from 220ohm to 1Kohm 3. DM20 installed 4. 1uF cap added between P26(USB_detector) and GND 5. Correct PMOS symbol
2023/02/15	Rev.0.3	Chris TsaiLin	<ol style="list-style-type: none"> 1.Add pull-down resistors(R24, R26) on USB connector. 2.C43 is changed to 1.6pF, C44 is changed to R151=0 ohm. 3.Add the second PV connector to support second PV cell. 4.Change the LDO output voltage to 3.9V: RA=18.2k Ohm, RB=4.7k Ohm. 5.Reserve another diode footprint D4 for D2. 6.Add the second power source VAUX for all the LEDs. 7.Reserve UART1_Tx to control the LDO for charging HSC.
2023/04/20	Rev. 0.4	Chris TsaiLin	<ol style="list-style-type: none"> 1.Add the connection of VHARV to the connectors. 2.Change DM1,DM6,DM13,DM15,DM16,DM20 to 0 ohm resistor.
2023/08/21	Rev. 3	Chris TsaiLin	<ol style="list-style-type: none"> 1.Add boost circuits for different applications. 2.Add R35 between the HSC and the net HYBRID. 3.Update the RFIO matching. 4.HARV_INP and HARV_INN are grounded. 5.Remove connector for VBAT, use test pad instead. 6.Update the "Boost" in schematics block diagrams to "Passive Boost".
2025/02/12	Rev. 3.1	Joe Chen	<ol style="list-style-type: none"> 1. To ensure that the PWD voltage below 3.3V in 5V USB charger reset, replace the PWD pull-down component R9 from a 1Mohm resistor (0402) with a 0.068uF capacitor (0402). 2. Change C30 from 1uF to 0.1uF capacitor (0402). 3. Change R18 from DNS to a 10Kohm resistor (0402).

Atmosic Technologies, Inc

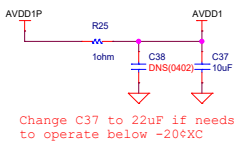
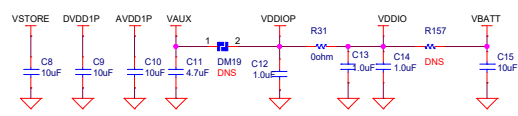
ATMOSIC TECHNOLOGIES INC		
Title ATM3330e PV Keyboard Reference Design		
Size C	Document Number <078-30-611-XXXX>	Rev 3.1
Date: Wednesday, February 12, 2025 Sheet 1 of 3		

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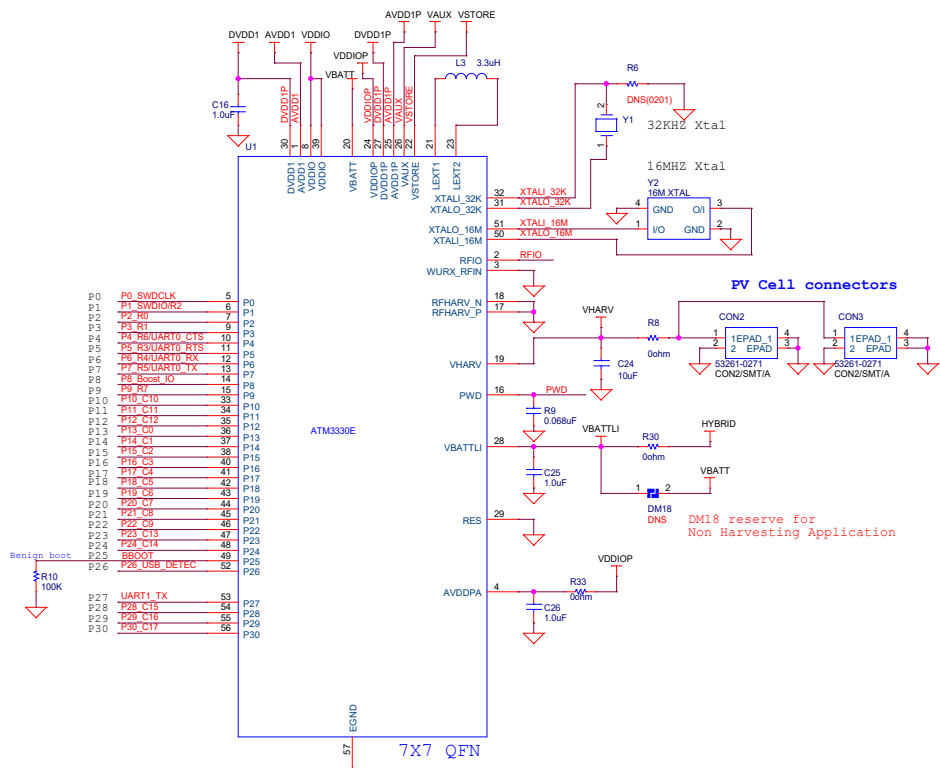


ATM3330e

INTERNAL VDDIO
VDDIO=VDDIOP=1.8V



Change C37 to 22uF if needs to operate below -20°CX

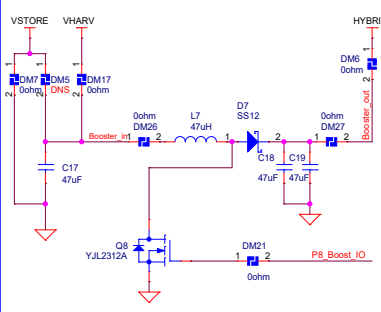


P0	P0_SWDCLK	5	P0
P1	P1_SWDIO/RZ	6	P1
P2	P2_R0	7	P2
P3	P3_R1	8	P3
P4	P4_RSUART0_CTS	9	P4
P5	P5_RSUART0_RTS	10	P5
P6	P6_RSUART0_RX	11	P6
P7	P7_RSUART0_TX	12	P7
P8	P8_Boost_IO	14	P8
P9	P9_R7	15	P9
P10	P10_C10	16	P10
P11	P11_C11	17	P11
P12	P12_C12	18	P12
P13	P13_C0	19	P13
P14	P14_C1	20	P14
P15	P15_C2	21	P15
P16	P16_C5	22	P16
P17	P17_C4	23	P17
P18	P18_C5	24	P18
P19	P19_C6	25	P19
P20	P20_C7	26	P20
P21	P21_C8	27	P21
P22	P22_C9	28	P22
P23	P23_C13	29	P23
P24	P24_C14	30	P24
P25	BBOOT	49	P25
P26	P26_USB_DETEC	52	P26
P27	UART1_TX	53	P27
P28	P28_C15	54	P28
P29	P29_C16	55	P29
P30	P30_C17	56	P30

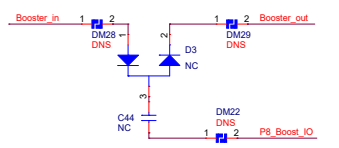
Benign boot
R10 100K

7X7 QFN

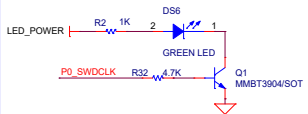
Passive Boost



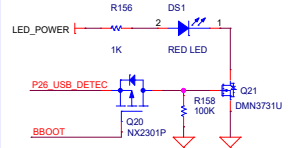
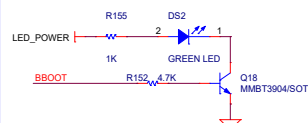
Reserved for Internal Use Only



CapsLock LED



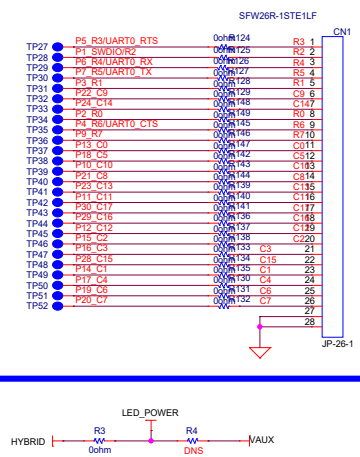
LED for USB Charger



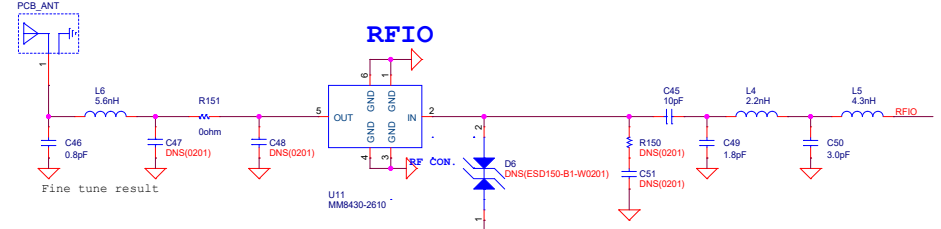
LED behavior
Pairing - Green LED blinking at 250ms interval
Fn lock - Green LED always on
none USB and pairing completed without Fn - LED disabled
USB plug-in and start to charge - Red LED always on
USB plug-in and charge completed - Green LED always on (LED will not be controlled by Fn-lock when this stage)
Reconnecting - Green LED blinking at 100ms interval

	P25 (BBOOT)	LED -G	LED -R
Pairing	1 0 1 0	Flash	OFF
Fn Lock	1	ON	OFF
USB plug-in and charge battery	0	OFF	ON
USB plug-in and charge complete	1	ON	OFF
none USB and pairing completed without Fn	0	OFF	OFF
Caps Lock	NA	ON	OFF
Reconnecting	1 0 1 0	Flash	OFF

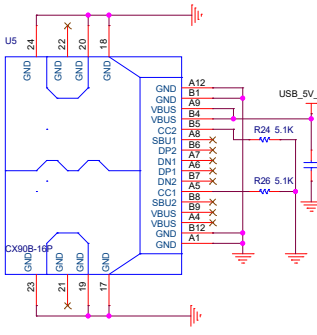
Keyboard connector



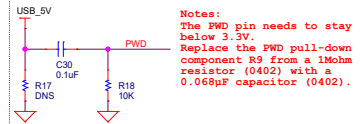
RF Antenna Matching Value need to be modified



USB CONNECTOR

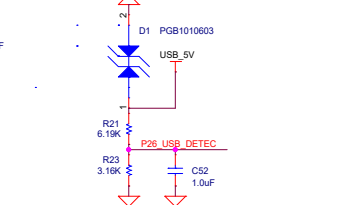


USB Plug-In Reset

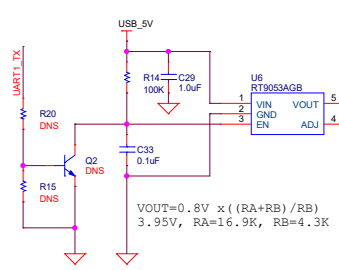


Notes:
The PWD pin needs to stay below 3.3V.
Replace the PWD pull-down component R9 from a 1Mohm resistor (0402) with a 0.068pF capacitor (0402).

USB Plug-In Detect



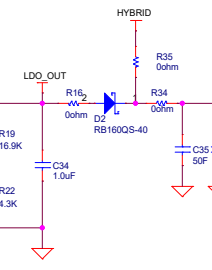
USB to LDO Charger



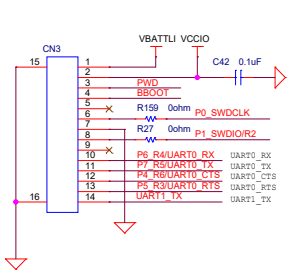
$$VOUT = 0.8V \times ((RA+RB)/RB)$$

3.95V, RA=16.9K, RB=4.3K

Hybrid Supercap



FPC TEST CONNECTOR



TEST POINTS

