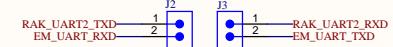
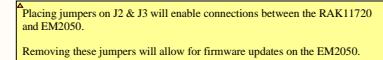
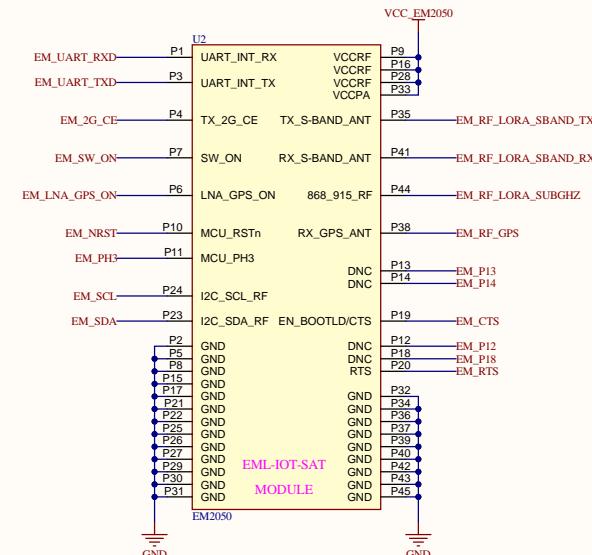
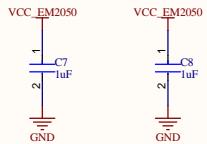
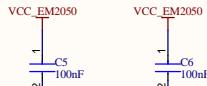




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PROJECT NAME	ApolloEcho_Dev_Kit	AUTHOR	mtnguyen
TITLE	EM2050		
Rev.	1.0.0	Date	Dec 03, 24
FILE NAME	EM2050.SchDoc	SHEET	2 OF 5
			

1

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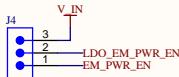
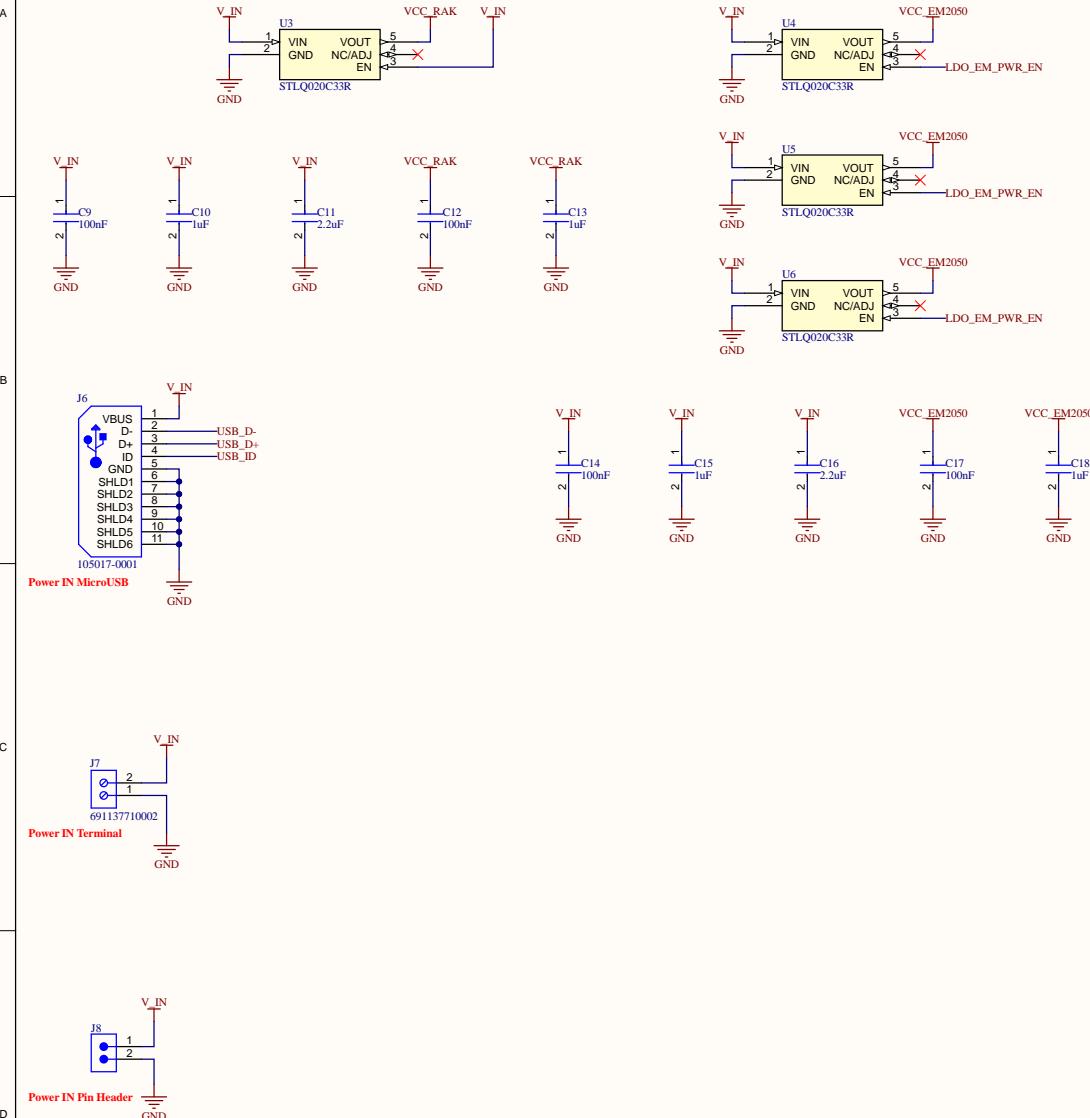
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This jumper, J4, is for selecting the  
LDO\_EM\_PWR\_EN driving source. Shorting  
pin 1 & 2 will allow the RAK11720 to enable  
the power of the EM2050. The EM2050 will  
always be on if pin 2 & 3 are shorted.

PROJECT NAME ApolloEcho\_Dev\_Kit

AUTHOR mtnguyen

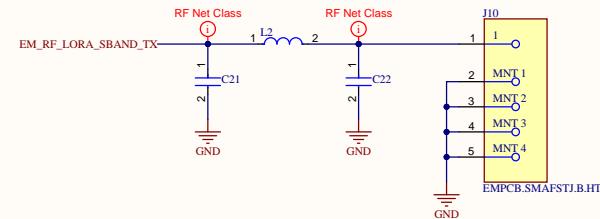
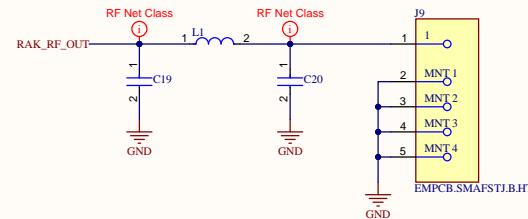
Power

Rev 1.0.0 Date Dec 03, 24  
FILE NAME Power.SchDoc

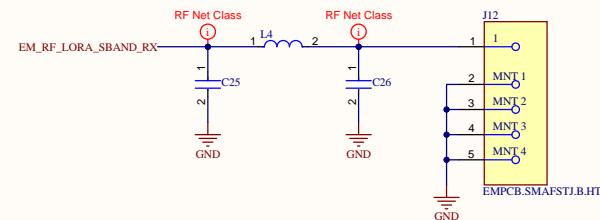
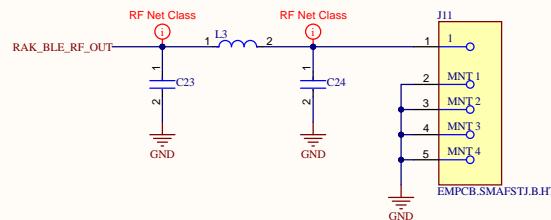


SHEET 3 OF 5

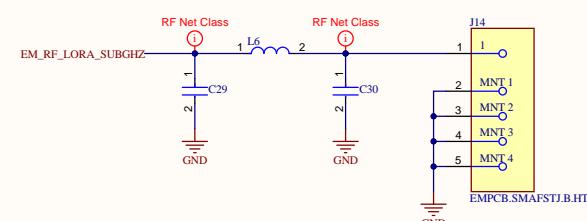
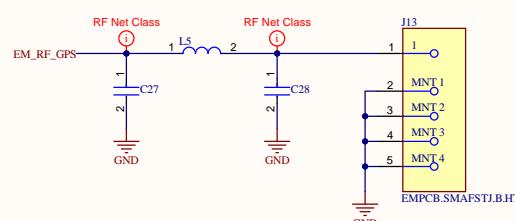
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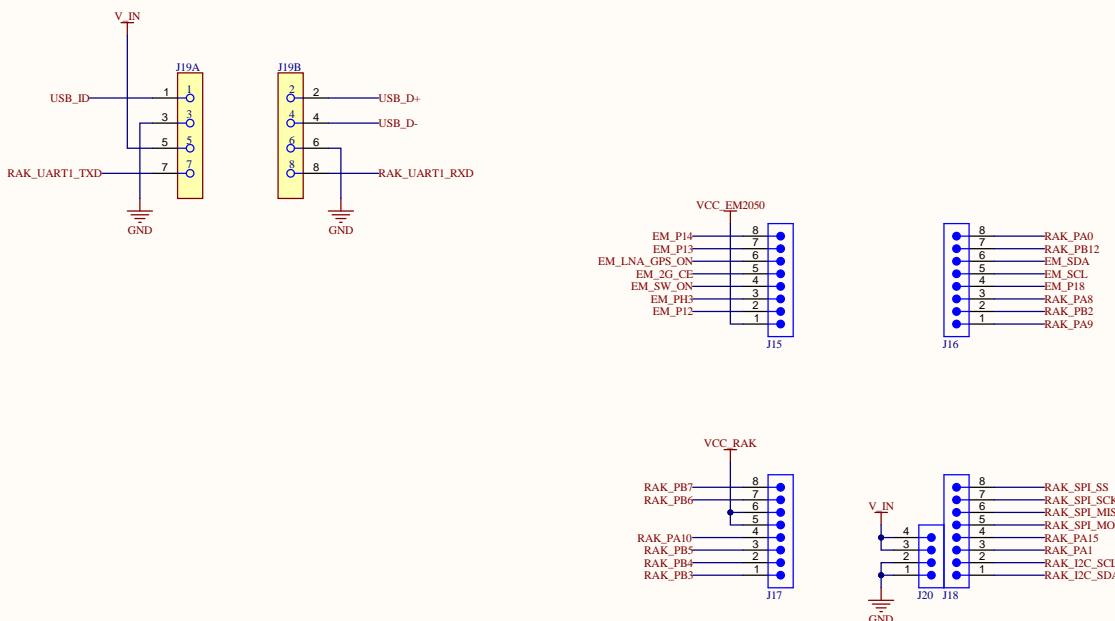
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PROJECT NAME	ApolloEcho_Dev_Kit	AUTHOR	mtnguyen
TITLE	Ios		
Rev 1.0.0	Date Dec 03, 24		
FILE NAME	Ios.SchDoc	SHEET	5 OF 5

Comment	Description	Designator	Footprint	LibRef	Quantity	Value	Manufacture	Manufacturer	Manufacturer Packaging 1	Manufacturer P/N	Manufacturer Part Number	Manufacturer URL
0402ZD104KAT2A	General Purpose Ceramic Capacitor, 0402, 100nF, 10%, X5R, 15%, 10V	C1, C2, C5, C6, C9, C12, C14, C17	FP-0402-L_1_0_1-W_0_5_0_1-IPC_C	OMP-2008-02878-3	8							
EMK105BJ105KV-F	None	C3, C4, C7, C8, C10, C13, C15, C18	FP-0402-L_1_0_05-W_0_5-IPC_A	OMP-14477-000104-2	8							
C1005X5R1A225K050B C	Multilayer Ceramic Capacitors 2.2μF ±10% 10V X5R SMD 0402	C11, C16	FP-C1005-050-0_05-IPC_A	OMP-08246-002709-1	2							
GJM1555C1H5R0CB01 D	Multi-Layer Ceramic Capacitor 5pF COG ±0.25pF 0402 Paper T/R	C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30	FP-GJM155-0_05-MFG	OMP-2008-03860-2	12							
150060VS75000	MURTH ELEKTRONIK-150060VS75000- LED, Green, SMD, 0603, 30 mA, 2V, 570 nm	D1	WL-SMOW_0603_150060xx 75000	OMP-1426-00006-7	1							
150060RS75000	LED Low-Power Uni-Color Red 630nm 2V 2 Pin Chip 0603(1608Metric) T/R	D2	WL-SMOW_0603_150060xx 75000	OMP-1426-00001-4	1							
61300311121		J1, J4	61300311121	OMP-1502-01062-3	2							
61300211121		J2, J3, J8	61300211121	OMP-1712-00002-6	3							
61300611121		J5	61300611121	OMP-1502-01070-3	1							
105017-0001	Micro-USB B Receptacle, Right Angle, Bottom Mount, Surface Mount, with Solder Tabs, -30 to 85 degC, 5-Pin USB, RoHS, Tape and Reel	J6	USB-MICRO-B_V	OMP-2000-05827-1	1			Molex				<a href="http://www.molex.com/">http://www.molex.com/</a>
691137710002		J7	691137710002	OMP-1502-03324-2	1							
EMPCB_SMAFSTJ_B.HT	CONN SMA JACK STR 500HM EDGE MINT	J9, J10, J11, J12, J13, J14	FP-EMPCB_SMAFSTJ_B_H T-MFG	OMP-111093-000001-1	6			Taoglas Limited				EMPCB_SMAFSTJ_B.HT
61300811121		J15, J16, J17, J18	61300811121	OMP-1502-01076-3	4							
PPTC042LFBN-RC	CONN HDR8POS0.1 TIN POB	J19	FP-PPTC042LFBN-RC MFG	OMP-25680-000004-1	1			Sullins				PPTC042LFBN-RC
61300411121		J20	61300411121	OMP-1502-01064-3	1							
LQW15AN2N9D00D	Wire Wound RF Inductor 2.9nH ±0.5nH 750mA 0.07Ω 0402 (1005)	L1, L2, L3, L4, L5, L6	FP-LQW15AN_00-W0_6-0_1-MFG	OMP-06042-011289-1	6							
RMCF0402FT1K00	1kΩ ±1% 0.063W 0402 Thick Film Chip Resistor AEC-Q200 compliant	R1, R2	FP-RMCF0402-IPC_A	OMP-26527-000026-1	2							
436333045822		S_N_RST, S_N_U1, S_N_U2	436333045822	OMP-1464-00001-2	3							
RAK11720	RAK11720 Ambiq Apollo3 Blue SX1262 LoRa Bluetooth Module for LoRaWAN	U1	RAK11720	RAK11720	1							
IOT SAT module	Echostar Mobile IOT SAT Module - Basic version	U2	EM2050	EM2050	1	EM2050		Echostar Mobile Ltd		EM2050		
STLQ020C33R	No Description Available	U3, U4, U5, U6	SOT323-5L_STM	STLQ020C33R	4							

# Board Stack Report

Stack Up		Layer Stack			
Layer	Board Layer Stack	Name	Material	Thickness	Constant
1		Top Paste			
2		Top Overlay			
3		Top Mask	Solder Resist	0.015mm	3.8
4		Top Copper	Copper	0.035mm	
5		Dielectric 1	7628	0.200mm	4.6
6		Plane Layer 1 (Ground)	Copper	0.018mm	
7		Core	FR-4	1.065mm	4.5
8		Plane Layer 2 (PWR)	Copper	0.018mm	
9		Dielectric 2	7628	0.200mm	4.6
10		Bottom Copper	Copper	0.035mm	
11		Bottom Mask	Solder Resist	0.015mm	3.8
12		Bottom Overlay			
13		Bottom Paste			
Height : 1.600mm					

