



HARDWARE FAULT REPORT

Apollo3 Blue EVB Rev 1.7

Ultra-Low Power Apollo SoC Family

A-SOCA3B-RPGA01EN v1.1



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Revision History

Revision	Date	Description
1.0	February 2020	Initial Release
1.1	January 12, 2023	Updated document template

Reference Documents

Document ID	Description

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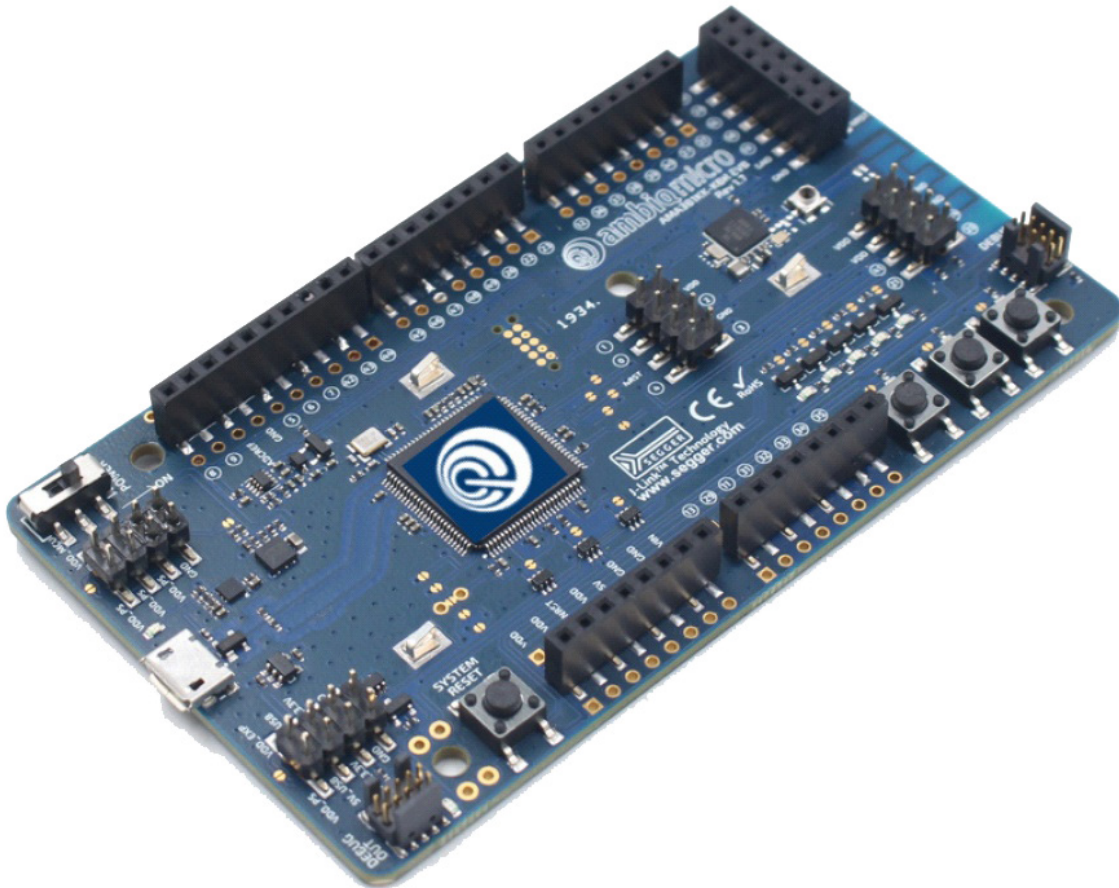
SECTION

1

Introduction

This document provides notification of a hardware fault discovered in the Apollo3 Blue Evaluation Board (EVB), part number AMA3B1KK-KBR EVB, revision 1.7. The document describes the hardware fault, its scope (affected hardware models and versions) and recommended actions to eliminate or reduce the impact of the fault.

Figure 1-1: Apollo3 Blue EVB - AMA3B1KK-KBR, Revision 1.7



SECTION

2

Detailed Hardware Faults

This section gives detailed information about each hardware fault. Information covered for each fault includes the following:

- **HW Fault Reference Number and Title** – Lists reference number and title of the fault
- **Description** – Provides a detailed description of the fault
- **Affected Hardware Model and Revisions** – Specifies the hardware model and revisions on which the fault exists
- **Operational Impact** – Describes the impact of the fault on a hardware operation
- **Workarounds** – Proposes hardware replacement or update instructions to minimize or eliminate the impact of the fault
- **Fault Resolution Status** – Specifies which hardware model and revision, if any, that the fault was initially fixed
- **AmbiqSuite Software Workaround** – Specifies whether the fault can be or has been worked around in the AmbiqSuite software

2.1 HWF001: Misorientation of the RF Switch Connector (J5)

2.1.1 Description

In the first production run of the Apollo3 Blue EVB, version 1.7, the PCB assemblies were assembled with switch connector, J5, misoriented 180 degrees.

2.1.2 Affected Hardware Model and Revisions

A new revision of Apollo3 Blue EVB, version 1.7, went into production in early December 2019. After shipping the first lot of 248 PCB assemblies to customers,

the misorientation of the connector was discovered. Figure 2-1 below shows the general location and correct orientation of connector J5 on the PCB.

Figure 2-1: RF Connector J5 - Correct Orientation

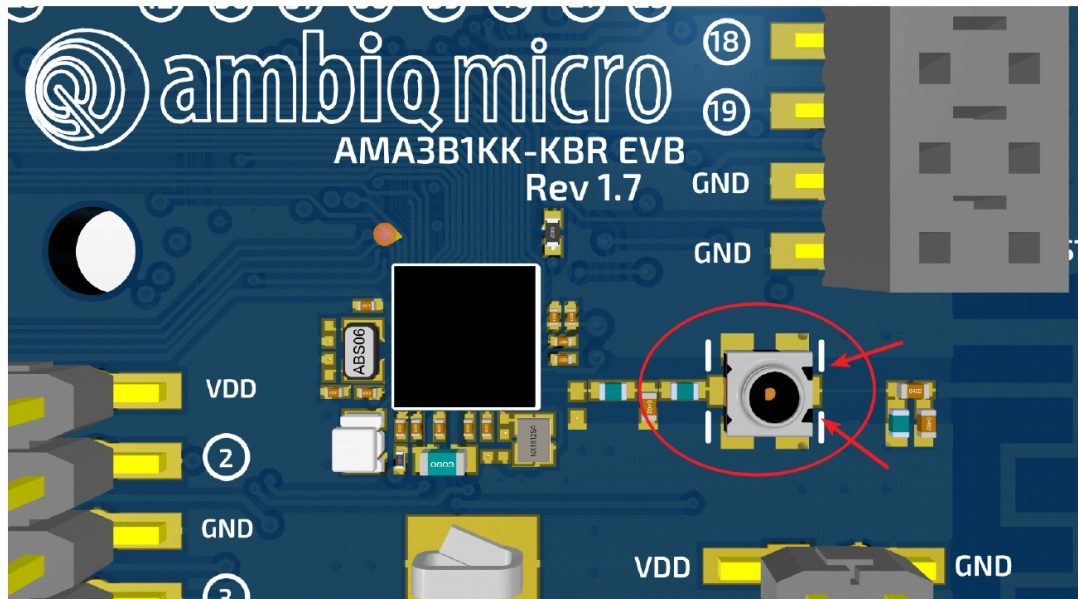
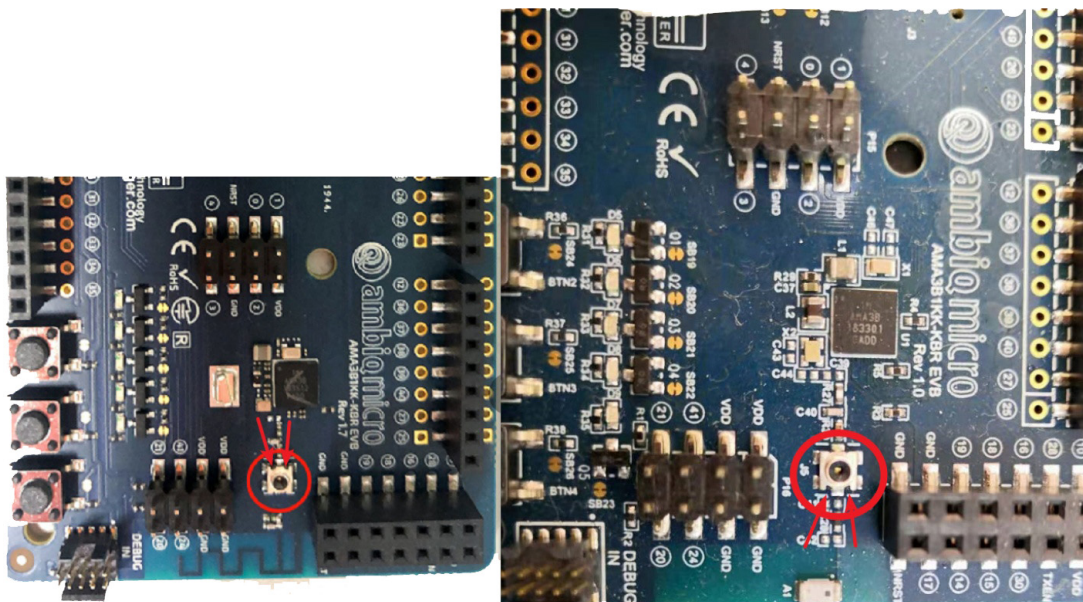


Figure 2-2 shows a visual comparison of the correct orientation and the faulty orientation of connector J5.

Figure 2-2: RF Connector J5 Orientation - Faulty (on left) vs Correct (on right)



The chip IDs of the units affected by this assembly error are as listed in Table 2-1 on page 8.

Table 2-1: Chip ID of Devices Affected by HWF001

No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1
1	298AB804	321969E0	51	298AAC06	3DB31F1E	101	298AA701	7C8C3330	151	298AB502	BBD8CEC4
2	298AB201	19328038	52	298AAA04	3E9EFC0E	102	298AAD03	7D2AED14	152	298AA904	BBE40CE2
3	298AAD03	46628516	53	298AB406	412DF2C0	103	298AAA08	7D3F1A14	153	298AA406	BC07AFEA
4	298AB805	56129906	54	298AAE05	414A193C	104	298AB205	7DA10900	154	298AA503	BC75357A
5	298AA604	99959452	55	298AB801	447601D4	105	298AB608	812DBF0E	155	298AB508	BCD3C204
6	298AB903	03ECB16C	56	298AAB05	44E63A76	106	298AA501	81E385D8	156	298AB805	BEB808D6
7	298AA603	061AF75E	57	298AA806	4614FF84	107	298AAF01	8309E04E	157	298AAC08	C02374D2
8	298AAA01	0786A29C	58	298AB908	47204A78	108	298AA804	841841B0	158	298AB604	C0964E8A
9	298AA504	0791754C	59	298AB603	4728DC68	109	298AB306	846A15BC	159	298AA907	C1BC582C
10	298AB906	07FA8CD0	60	298AAC07	47FBC9F8	110	298AB602	84DADA48	160	298AA802	C21B93DC
11	298AA808	0831AD5A	61	298AB806	4B36AFCC	111	298AA503	85ACCD7A	161	298AA401	CA0B0102
12	298AAD04	0883BCC4	62	298AB203	4B79CC9C	112	298AAF08	8636003C	162	298AA906	CA93934A
13	298AB604	0996D68A	63	298AAE02	4D4358EA	113	298AB007	8856A48E	163	298AAD05	CAC4F474
14	298AAC01	0A4790E0	64	298AAA05	4E3F0190	114	298AB802	88CD2DA0	164	298AB605	CBE4D0AA
15	298AA803	0AA12C02	65	298AAD07	4F0763D2	115	298AB407	8A6512C6	165	298AB905	CC97C5CE
16	298AA506	0B5ABCEE	66	298AB404	4F10242C	116	298AB801	8C9D84FE	166	298AB003	CCA47B1C
17	298AA606	0C3700B4	67	298AA408	501FEDE0	117	298AAD06	8CE62C22	167	298AA607	CCA69D0C
18	298AAE07	0E578C1C	68	298AB607	50C0CCEA	118	298AA507	8D3F5CC0	168	298AA602	CCCA392C
19	298AAA02	0F0E6F32	69	298AAD04	518444C4	119	298AB308	8D95F49C	169	298AB803	CD24496C
20	298AAA01	0FBEE38A	70	298AAC08	522484D0	120	298AB506	8D9ch68F06	170	298AAD07	CED053D0
21	298AB603	1060746A	71	298AAF03	52578CDC	121	298AB006	996A1032	171	298AAB04	D0D7F992
22	298AAD08	11289B82	72	298AAE06	557D2EAA	122	298AB503	99A5BB24	172	298AB607	D117DCEC
23	298AB507	1159949E	73	298AB505	557FABE2	123	298AB806	9A69BCD2	173	298AB708	D23255BC
24	298AB804	119B7538	74	298AB707	57EC66C6	124	298AAE04	9A87DBCA	174	298AB404	D613992C
25	298AAF06	12210BAE	75	298AA706	589F94FA	125	298AAE05	9C82C93A	175	298AB302	D6D7F5EE
26	298AB608	132ECF0A	76	298AA801	58F4F806	126	298AB408	9E216250	176	298AB807	D7B556C4
27	298AB401	13DB3590	77	298AA602	5966EEEC	127	298AA508	A105148E	177	298AAC05	D811BC46
28	298AAC02	14904BBA	78	298AB904	5A9BFD38	128	298AAB08	A191151E	178	298AB706	DDA5E7CE
29	298AAA03	169633C8	79	298AB308	5B232DA4	129	298AAD08	A329AB7E	179	298AB002	DDD7F6C0
30	298AAF08	1837103A	80	298AAB03	5C89B0B0	130	298AB904	A39F9440	180	298AB501	DDEBD266
31	298AB802	191C23F4	81	298AA608	659F0998	131	298AAF06	A4B03BB0	181	298AB807	DECOE09E
32	298AA906	19C6A050	82	298AA606	6640EF78	132	298AB803	A59AC2EA	182	298AAC04	E001296E
33	298AA702	1D89C058	83	298AA601	66648B9A	133	298AAE01	A6A12378	183	298AAF02	E184AA94
34	298AB907	1E4818EA	84	298AA707	679C1A24	134	298AA807	A7235270	184	298AAE04	E38863CA
35	298AAC03	1ED8FE92	85	298AA905	6AC55698	135	298AB408	AC284C52	185	298AA708	E4296F4C
36	298AAA02	1F5EE90A	86	298AAA07	6D9F1494	136	298AA703	AC4F3D80	186	298AA505	E4AEC51C
37	298AB606	20E202CC	87	298AA807	6E598BFA	137	298AA601	ACB2E67A	187	298AA805	E506A49A
38	298AA803	2309EEC6	88	298AA705	6E8177D2	138	298AB902	AD5D6DA0	188	298AA903	E5593CAA
39	298AAA05	2585BCF2	89	298AB307	6FC69DB0	139	298AB304	AD9105D6	189	298AA707	E7450A22
40	298AAD05	261D9C72	90	298AB605	70CC28AC	140	298AA901	AEE02FBE	190	298AAE06	E7EC5EAC
41	298AB202	3246226A	91	298AAF01	70D1C04E	141	298AB207	B0085562	191	298AAC03	E8109694
42	298AA608	330C429E	92	298AAE02	71D3A0E8	142	298AB905	B14B4104	192	298AAB02	E87B6FCC
43	298AA603	332FE6C0	93	298AAB01	742D26EA	143	298AA604	B2CEF7D0	193	298AB704	E918E1E2
44	298AAC05	334A6444	94	298AA703	7586D582	144	298AB908	B5391C68	194	298AA706	EB0ECCFA
45	298AB506	336C9840	95	298AB008	772328EC	145	298AB401	B58C0AD0	195	298AB301	EB7B6DFA
46	298AAF05	33FD5168	96	298AB504	7792B782	146	298AA908	B8A5250C	196	298AA902	EE3077C8
47	298AAA07	34B54E1E	97	298AA908	77C933BC	147	298AA607	B8CB0126	197	298AB001	EEEEB6A64
48	298AA704	3B14AAA8	98	298AA506	78CB84EC	148	298AAE01	B8F94378	198	298AAC02	F00003BA
49	298AB403	3B53D4A2	99	298AB701	7A4564FE	149	298AAB06	B9348358	199	298AA704	F21422AA
50	298AAA08	3C3D0AB4	100	298AB903	7AA76AB2	150	298AB004	BBB1077A	200	298AAE03	F3E59E5A

Table 2-1: Chip ID of Devices Affected by HWF001 (Continued)

No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1	No.	CHIPID0	CHIPID1
201	298AB402	2797851A	213	298AB907	5E89D09C	225	298AA402	941723FE	237	298AAC07	C832D9FA
202	298AA404	280F61F4	214	298AB602	604A9248	226	298AA501	943BA5D8	238	298AA907	C8C7EA06
203	298AAC04	2901B16C	215	2B290B08	6085662E	227	298AB303	951F8680	239	298AB208	C93BF794
204	298AB306	2A202EF8	216	298AA801	610D38F2	228	298AAF07	952C0DF4	240	298AA705	C9DA27D0
205	298AAE03	2AAE065A	217	298AB302	6374A3AC	229	298AB206	96D4B330	241	298AB702	F48BE3F4
206	298AAA06	2D2D8188	218	298AB705	637F60D8	230	298AB501	979D7F86	242	298AB906	F56FF75C
207	298AAB07	2D62CC3A	219	298AB808	6433F5BA	231	298AAD01	C22015B6	243	298AB505	F5F7ED86
208	298AAA03	2EFEF68C	220	298AB204	648D6ECE	232	298AB601	C26CD828	244	298AB407	F6BB2788
209	298AB502	2F3C1906	221	298AB606	8E72D2CA	233	298AAF04	C30A7722	245	298AA901	F707AAE8
210	298AB301	31A9C0DA	222	298AAE07	8E8E9C1E	234	298AB304	C6CA6952	246	298AAC01	F80F70E0
211	298AAA06	5DDF0F12	223	298AA701	8EC45330	235	298AB503	C6DAB286	247	298AB305	F8754C24
212	298AA902	5DE17174	224	298AAF05	8F360168	236	298AA808	C72FA5F8	248	298AA702	F9198058

2.1.3 Operational Impact

The functionality of the EVB on faulty assemblies is ONLY affected when a user tries to perform conductive RF performance tests with the board. It will not affect the functionality nor the performance of the board in general use.

2.1.4 Workarounds

If your EVB's Chip ID is one listed in Table 2-1 on page 8, and you would like to perform conductive RF performance testing with the EVB, please contact your sales representative at Ambiq or you may rework the board simply by reverse the orientation of J5.

2.1.5 Fault Resolution Status

The hardware fault described in this report has been resolved, and all EVBs which have been and will be made available subsequent to this initial production run will not exhibit this assembly issue.

2.1.6 AmbiqSuite Software Workaround

No workaround is available or needed in AmbiqSuite.



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