

Product Qualification Report



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Project	4394		
Product	nRF51822-CFAC	Build code(s) : A10	
Title	Product Qualification Report : nRF51822-CFAC A10		
<p>Data sheet :</p> <p>http://www.nordicsemi.com/eng/Products/Bluetooth-Smart-Bluetooth-low-energy/nRF51822</p>			

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1. Document Control

1.1. Revision History

Rev	Rev. Date	Document Status	Responsible
1.0	15 th of June 2016	First version	Ola BOSTROM

1.2. Modifications since Last Revision

N.A.

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2. Qualification Tests and Results

Test	Test identification	Referencing standard	Test Conditions	Units			Qualification level ¹ Die/Package	Comment
				Lots	S.S.	Total		
Accelerated Environment Stress Tests								
1	MSL preconditioning	JESD22-A113	Level: MSL1 @ 260°C 3*reflow	3	25	75	B/B	PASS
2	Unbiased HAST	JESD22-A118	Temp: 130 °C Humidity: 85% RH Duration: 96 hours	3	25	75	B/B	PASS
3	TC	JESD22-A104	Temp: -65°C to +150°C Duration: 500 cycles	3	25	75	B/B	PASS
4	HTS	JESD22-A103	Temp: 150°C Duration: 500 hours	3	25	75	B/B	PASS
Package Assembly Integrity Tests								
5	EV - External Visual	Supplier Specification		3	10	30	X/A	PASS
6	PD - Physical Dimensions	Supplier Specification		3	10	30	X/A	PASS
7	BS - Ball Shear	Supplier Specification		1	10	10	X/A	PASS
Accelerated Lifetime Simulation Tests								
8	HTOL	JESD22-A108, JESD85	Temp: 125°C Duration: 1000 hours	3	77	231	B/X	PASS FIT (60% CL) : 51
9	NVM Endurance	JESD22-A117	20k p/e cycles T=-40°C, 25°C,125C	3x3	77	693	D/X	PASS
10	NVM High Temperature Data Retention	JESD22-A117	Temperature=150C Duration : 1000h	1	77	77	D/X	PASS
			Temperature=125C Duration : 500h	3	77	231	B/X	PASS
Electrical Verification Tests								
11	ESD Sensitivity Testing	JS-001	HBM	3	4x3	36	A/B	PASS 2000V
		JESD22-C101	CDM	3	3	9	A/B	PASS 500V
12	LU	JESD78	High pass : 100mA Class: II (+75°C)	1	6	6	A/B	PASS
13	ED	JESD86	All combinations of Vmin,typ,max AND Tmin, typ,max	3	10	30	A/B	PASS
Die Fabrication Reliability Tests								
14	HCI, EM, TDDB, SM, NBTI	Supplier Specification					D/X	Supplier Quarterly Reliability Monitoring
Compliance tests								

¹ Qualification Level Coding :

Test Vehicle	Level
Current version of die/package	A
Previous version of die/package	B
Variant of die/package, same technology	C
Similar and relevant die/package/technology	D
Not relevant	X

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Test	Test identification	Referencing standard	Test Conditions	Units			Qualification level ¹ Die/Package	Comment
				Lots	S.S.	Total		
15	HSR – Hazardous Substance Analysis	Nordic Specification	RoHS, “Halogen free”	1	50 grams		B/A	PASS
16	Tele regulatory standards	ETSI					A/B	PASS
		FCC					A/B	PASS

Table 1 : Qualification results.

3. Conclusion

The nRF51822-CFAC A10 has passed all qualification tests and is released to production.