

		APPLICATION FOR EXTENSION OF ESCC TECHNOLOGY FLOW APPROVAL		Page 1
Component Title:		Integrated Circuits, Silicon, Monolithic, CMOS, Cell-Based Array, based on Type ATC18RHA		Appl. No.
Executive Member:		CNES		Date: 18/07/2025 357C
Technology Flow submitted for Extension of Qualification Approval:				1
SUMMARY DESCRIPTION		TEST STRUCTURES		COMPONENTS PROPOSED FOR QUALIFICATION
ATC18RHA ASICs		See Annex 1		ATC18RHA ASICs AT697F AT7991
Component Manufacturer MICROCHIP TECHNOLOGY NANTES (ex-ATMEL NANTES)		Location of Manufacturing Plant(s) MCHP Nantes (design & test) UMC Taiwan (wafer fab) MMT Thailand (assembly) HCM La Rochelle (column mounting)	Date of original qualification approval: Date: 30/08/2021 Certificate Ref No. 357A	
ESCC Specifications used for Maintenance testing: Generic: 9000 Issue: 11 Detail(s): 9202/080 Issue: 5 9512/005 Issue: 1		Deviations to LVT testing and Detail Specification used: No ☒ Yes ☐ (supply details in Box 15) Deviation from current Specifications: No ☒ Yes ☐ (Supply details)	Qualification Extension Report reference and date: ATC18RHA ESCC QML - qualification maintenance request 2025-06 rev0	
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)				8
Customer	Component	LVT	Date code	Quantity Delivered
See Qualification Extension report				
PID changes since last maintenance of qualification None ☐ Minor* ☒ Major* ☐ *Provide details in box:		9	Current PID Verified by: CNES Name of Executive Representative Ref No: ATC18RHA PID 0032 – Rev G – 01/07/2025 Ref No: MMT PID FOR MCHP NANTES – 1G-QM-0105 – 04/02/2019 Ref No:	
19		10		
Current Manufacturing facilities surveyed by: ESA and CNES		on 16/10/2024		
(Name of Executive Representative)		(Date)		
Satisfactory: Yes ☒ No ☐ Explain				
Report Reference: DTN QE EC-2024.0014739 - CR-ESCC QML survey MCHP-16102024				

	APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL Component title: Integrated Circuits, Silicon, Monolithic, CMOS, Cell-Based Array, based on Type ATC18RHA Executive Member: CNES Date: 18/07/2025	Page 2 Appl. No. 357C
Failure Analysis, DPA, NCCS available: Yes ☐ No ☒ (Supply data) Ref. No's and purposes:		
The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; - that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence (except as stated in box 15;) - that the reports and data are available at the ESCC Executive and therefore applies on behalf of CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein. Date: 18/07/2025 Fontaine Lya Signature numérique de Fontaine Lya Date : 2025.07.18 16:21:57 +02'00' L. FONTAINE (Signature of the Executive Coordinator)		
Continuation of Boxes above: Box 1: An End-Of-Life of the ATC18RHA ASIC offer for new design has been announced by Microchip ADG in January 2021. • ADG Microchip has stopped the wafer manufacturing launch in December 2021. • ADG Microchip maintains Flight Models manufacturing from this wafer/die stock. As stated in QCI-39010-002, when no production on a package family, no monitoring is required and shall restart when production will restart. Nevertheless, in case of prolonged stoppage of one package family production, the TRB shall assess the need for additional verifications before restart. The AT697 and AT7991 products are not concerned by the discontinuation of wafer production, only ASICs are. For these 2 standard products, each batch of wafer is qualified by a life test. Box 7: ESCC QML qualification of UMC 8S wafer fab with MMT assembly based on: ATC18RHA ESCC QML - qualification maintenance request 2025-06 rev0 and associated reports: - ATC18RHA Process Identification Document - PID0032 revG		



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component title: Integrated Circuits, Silicon, Monolithic, CMOS, Cell-Based Array, based on Type ATC18RHA

Executive Member: CNES

Date: 18/07/2025

Page 3

Appl. No.

357C

Non compliance to ESCC requirements:

15

No.:	Specification	Paragraph	Non compliance

Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

16

None

Executive Manager Disposition

17

Application Approval: Yes ☒ No ☐

Action / Remarks:

Date: 30 September 2025

A. Zadeh: Head of the Avionics and EEE Division

	APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL Component Title: Integrated Circuits, Silicon, Monolithic, CMOS, Cell-Based Array, based on Type ATC18RHA Executive Member: CNES Date: 18/07/2025	Page 4 Appl. No. 357C																						
ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION		18																						
Tests conducted in compliance with: - ESCC 9000 generic specification; Chart F4 (for ESCC/QPL parts); - or PID-TFD ATC18RHA PID 0032 – Rev G (for ESCC/QML parts) Tests vehicle identification/description: <u>CQFP multi-decks family</u>																								
<table><thead><tr><th><u>DateCode</u></th><th><u>Package</u></th><th><u>Product</u></th><th><u>Lot</u></th><th><u>Comment</u></th></tr></thead><tbody><tr><td><u>DC2321 to DC2347</u></td><td><u>CQFP256</u></td><td><u>AT697</u></td><td><u>0P208A2AKU</u></td><td rowspan="4"><u>MIL-PRF-38535 (6-month period)</u></td></tr><tr><td><u>DC2348 to DC2422</u></td><td><u>CQFP256</u></td><td><u>AT697</u></td><td><u>0P208A2642</u></td></tr><tr><td><u>DC2422 to DC2448</u></td><td><u>CQFP032</u></td><td><u>ATmegaS64M1</u></td><td><u>A8B8ZA28BC</u></td></tr><tr><td><u>DC2438 to DC2512</u></td><td><u>CQFP064</u></td><td><u>SAMD21RT</u></td><td><u>QW4LJA28CH</u></td></tr></tbody></table>			<u>DateCode</u>	<u>Package</u>	<u>Product</u>	<u>Lot</u>	<u>Comment</u>	<u>DC2321 to DC2347</u>	<u>CQFP256</u>	<u>AT697</u>	<u>0P208A2AKU</u>	<u>MIL-PRF-38535 (6-month period)</u>	<u>DC2348 to DC2422</u>	<u>CQFP256</u>	<u>AT697</u>	<u>0P208A2642</u>	<u>DC2422 to DC2448</u>	<u>CQFP032</u>	<u>ATmegaS64M1</u>	<u>A8B8ZA28BC</u>	<u>DC2438 to DC2512</u>	<u>CQFP064</u>	<u>SAMD21RT</u>	<u>QW4LJA28CH</u>
<u>DateCode</u>	<u>Package</u>	<u>Product</u>	<u>Lot</u>	<u>Comment</u>																				
<u>DC2321 to DC2347</u>	<u>CQFP256</u>	<u>AT697</u>	<u>0P208A2AKU</u>	<u>MIL-PRF-38535 (6-month period)</u>																				
<u>DC2348 to DC2422</u>	<u>CQFP256</u>	<u>AT697</u>	<u>0P208A2642</u>																					
<u>DC2422 to DC2448</u>	<u>CQFP032</u>	<u>ATmegaS64M1</u>	<u>A8B8ZA28BC</u>																					
<u>DC2438 to DC2512</u>	<u>CQFP064</u>	<u>SAMD21RT</u>	<u>QW4LJA28CH</u>																					
Detail Specification reference: 9202/080																								

CQFP flat-substrate package family - ESCC periodicity of 2 years: Data from 2 lots presented over this 2 years period.

ADG Microchip periodicity of 26 weeks (environmental/mechanical sub-group) and each assembly lot (assembly capability sub-group).

Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental/Mechanical Subgroup	Mechanical Shock	☒	MIL-STD-883, Test Method 2002B	0P208A2AKU DC2321 (CQFP-256) QW4LJA28CH DC2438 (CQFP-64) Coverage → 2638	15	0	
	Vibration	☒	MIL-STD-883, Test Method 2007A		15	0	
	Constant Acceleration	☒	MIL-STD-883, Test Method 2001D		15	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014 A&C		15	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification		15	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500		15	0	MIL-STD-883, Test Method 2009
	Thermal Shock	☒	MIL-STD-883, Test Method 1011C		15	0	
	Temperature Cycling	☒	MIL-STD-883, Test Method 1010C		15	0	
	Moisture Resistance	☒	MIL-STD-883, Test Method 1004		15	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014 A&C		15	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification		15	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500		15	0	MIL-STD-883, Test Method 2009
Assembly Capability Subgroup	Terminal Strength (**)	☒	MIL-STD-883, Test Method 2004	0P208A2AKU DC2321 (CQFP-256) QW4LJA28CH DC2438 (CQFP-64) Coverage → 2638	3	0	
	Internal Visual Inspection (*)	☒	ESCC Basic Specification No. 20400		4	0	MIL-STD-883 Test Method 2010A
	Bond Strength (*)	☒	MIL-STD-883 Test Method 2011		4	0	(*) Done on each assembly lot (**) SubGrD2
	Substrate Attach Strength (*)	☒	MIL-STD-883 Test Method 2027		3	0	
	Permanence of Marking (*)	☒	MIL-STD-883 Test Method 2015		3	0	
	Solderability (*)	☒	MIL-STD-883 Test Method 2003		3	0	

Note:

CCGA multi-decks family: no manufacturing over the period

Endurance subgroup (Sub-Gr 2): no wafer manufacturing anymore

