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		Component Title: INTEGRATED CIRCUITS, MONOLITHIC, CMOS AND HBT ON SiGe:C, 1.6 TO 12 GHz FREQUENCY SYNTHESIZER WITH INTEGRATED SIGMA DELTA MODULATOR FRACTIONAL-N PLL Executive Member: German Space Agency at DLR Date: 11/07/2025				Appl. No. (Rev.1) 377
Components (including series and families) submitted for Qualification Approval						1
ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
ESCC9202/08501R	01		NOV1G14	ESCC920208501R		
Component Manufacturer IMST GmbH, Carl-Friedrich-Gauss-Str. 2-4, 47475 Kamp-Lintfort, Germany		Location of Manufacturing Plant SERMA TECHNOLOGIES, Pessac, France for assembly and packaging IMST GmbH, Kamp-Lintfort for electrical verification and Burn-In		ESCC Specification used for Qualification Generic: ESCC 9000 Issue 11 Detail/s: 9202/085 Issue 1		
Qualification Report Reference and date: 8000/6160550/NOVELO TR 101, Version 1.1 Date: 10/12/2021			5	PID used for manufacturing Qualification Lot Ref No: 8000/6160550/NOVELO RD 000 Issue: Version 1.0 Date: 12/11/2020		
PID changes since start of qualification None ☐ Minor* ☒ Major* ☐ (* Details not published, provided in confidential annex 2.)			7	Current PID Verified by Burak Gökgöz, German Space Agency at DLR Name of Executive Representative Ref No: 8000/6160550/NOVELO RD 000 Issue: Version 1.1 Date: 12/11/2020		
Current Manufacturing facilities surveyed by: Thomas Schulze (Name of Executive Responsible) Supplier visit at SERMA Microelectronics on 04.12.2019, Thomas Schulze, Report F006 ESCC Audit at IMST on 28.04.2022, Burak Gökgöz, Report No. IMST-AUD-DLR-NOV-2022						9
Report Reference Satisfactory: Yes ☒ No ☐ Explain						
Quality and Reliability Data Evaluation testing performed Yes ☒ No ☐ Report Ref. No.: 8000/6160550/NOVELO TR 001; Version 1.2; 63.1504.017.66NOT, issue C, Mounting Capability Test of Novelo Package, dated 12.03.2025 Equivalent Data: Certification:				Failure analysis, DPA, NCCS available Yes ☒ No ☐ (supply data) NCCS No. NC1DIMS201 , 31/01/2022 Ref Nos. and purpose: QA0004886, Rev. 0, 13/07/2021 ESA DPA Report		
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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 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC qualification status to be given to the component(s) listed herein.

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Date: 01/09/2025

Billzack gällgörs

Digital signiert von Burak Goekgoez
DN: C=DE, S=Nordrhein-Westfalen, L=Koeln, O=Deutsches
Zentrum fuer Luft- und Raumfahrt e.V. (DLR), SN=Goekgoez, G=
Burak, CN=Burak Goekgoez
Grund: Ich bin der Verfasser dieses Dokuments
Ort: Bonn
Datum: 2025.09.01 15:57:06+02'00'

Burak Gökgöz

(Signature of the Executive Coordinator)

Continuation of Boxes above: (Only non-confidential comments)

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Non compliance to ESCC requirements:				
13				
No.:	Specification	Paragraph	Non compliance	
Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:				
14				
Executive Manager Disposition				
15				
Application Approval: Yes ☒ No ☐				
Action / Remarks:				
Date: 30 September 2025				
 A. Zadeh - Head of the Avionics and EEE Division				

ANNEX 1: LIST OF TESTS DONE TO SUPPORT QUALIFICATION

Tests conducted in compliance with:

- ESCC 9000 generic specification; Chart F4 (for ESCC/QPL parts);
-

Tests vehicle identification/description:

ESCC9202/08501R	Date Code 2101

Detail Specification reference: 9202/085, Issue 1, July 2021

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 2002	2101	15	0	
	Vibration	☒	MIL-STD-883, Test Method 2007	2101	15	0	
	Constant Acceleration	☒	MIL-STD-883, Test Method 2001	2101	15	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2101	15	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2101	15	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2101	15	0	
	Thermal Shock	☒	MIL-STD-883. Test Method 1011	2101	15	0	
	Moisture Resistance	☒	MIL-STD-883, Test Method 1004	2101	15	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2101	15	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2101	15	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2101	15	0	

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Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Endurance Subgroup	Operating Life	☒	MIL-STD-883, Test Method 1005	2101	15	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2101	15	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2101	15	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2101	15	0	
Assembly Capability Subgroup	Permanence of Marking	☐	ESCC Basic Specification No. 24800				n/a parts are laser marked
	Terminal Strength	☒	MIL-STD-883, Test Method 2004	2101	5	0	
	Internal Visual Inspection	☒	ESCC Basic Specification No. 20400	2101	5	0	
	Bond Strength	☒	MIL-STD-883 Test Method 2011	2101	5	0	
	Die Shear or Substrate Attach Strength	☒	MIL-STD-883 Test Method 2019 or 2027	2101	5	0	
Additional Tests		☐					
		☐					
		☐					

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NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION APPROVAL ENTRIES Form Heading shall indicate:— the title of the component as given in its detail specification or the name of the series or family; — the entering date; — the serial number and the suffix of the form. Box 1 shall provide details given in table; in particular there shall be listed - the variants or range of variants; the range of components by using the ESCC code for values tolerances, etc.; the designation given in detail specification as 'based on'; ---under Test Vehicle enter either a cross or the specific characteristic capable to identify the component tested; — under component similar enter a cross. Box 2 and 3 Manufacturer's name and location of plant where the components were manufactured and tested. Box 4 Generic and detail specifications used during qualification program. Box 5 Reference to test report(s) submitted in support of application. Box 6 Enter details to identify the PID that was applicable at the time the qualification lot was manufactured. Box 7 If the PID was evolved after qualification lot manufacture, adequate details of such evolution shall be provided together with reasons for changes. Major changes shall be clearly marked. Box 8 The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence. Box 9 This box can be completed only after a physical visit to the plant to confirm that the practices, procedures, materials, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded. Box 10 Details entered shall be sufficient to evidence that an evaluation program according to ESCC Basic Specification No. 22600 has been performed and that the results thereof are summarized in the survey and test reports. If the evaluation program has not been carried out according to established ESCC documents, the applicant Executive Representative shall provide alternative data and declare its assessed degree of satisfactory compliance with the ESCC basic requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis and Non conformance (NCCS) issued during the Evaluation and/or Qualification Phase. Box 11 Enter the name of the Executive Coordinator and the signature. Box 12 To be used when there is a need to expand any of the boxes from 1 through 10. Identify box affected and reference the Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several Boxes have to be expanded. Box 13 Fill table as requested. Box 14 Fill in any additional tasks required to achieve full compliance. Box 15 All Executive recommendations on the application itself, special conditions or restrictions, modifications of the QPL or ESCC QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the ESA Representative. Box 16 Fill in Table as requested. Box 17 Confidential details of PID changes shall be provided. Box 18 State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 18 each nonconformance shall be sequentially numbered. If relevant state 'None' Box 19 Any additional action deemed necessary by the Executive Representative to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the nonconformance. Box 20 Additional Comments		