Test Report

As per

FCC Part 96 SAS requirements (CBRS Test Plan)

Add value.
Inspire trust.

on the

KRD 901 254 Air 3268 B48 (3550-3700MHz)

FCC ID(s): TA8AKRD901254

Issued by:
TÜV SÜD Canada Inc.
1280 Teron Rd,
Ottawa, ON K2K 2C1
Canada

Testing produced for

Ericcson Canada

See Appendix A for full client & EUT details.

Steve McFarlane.
Test Personnel

Scott Drysdale
Report Reviewer

Testing Laboratory
Certificate #2955.19

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Report Scope

This report addresses the EMC verification testing and test results of the **Ericsson Remote Radio Air 3268 B48 KRD 901 254 (3550-3700 MHz)** herein referred to as EUT (Equipment Under Test). The EUT was tested for compliance against the following standards:

FCC Part 96 SAS requirements (CBRS Test Plan)

The objective of this report is to demonstrate the compliance of the product while in NR Tx mode. The NR PSD test data was gathered using a 20 MHz NR signal.
Please refer to report # TR- 7169012035-CBRS-004 for other Tx configurations.

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

For a more detailed list of the standards and the revision used, see the "Applicable Standards, Specifications and Methods" section of this report.

This report does not imply product endorsement by any government, accreditation agency, or TÜV SÜD Canada Inc.

Opinions or interpretations expressed in this report, if any, are outside the scope of TÜV SÜD Canada Inc accreditations. Any opinions expressed do not necessarily reflect the opinions of TÜV SÜD Canada Inc, unless otherwise stated.

Summary

The results contained in this report relate only to the item(s) tested.

Equipment Under Test (EUT)	**Ericsson Remote Radio Air 3268 B48 KRD 901 254 (3550-3700MHz)**
EUT passed all tests performed	Yes
Tests conducted by	Steve McFarlane

For testing dates, see 'Testing Environmental Conditions and Dates'.

Test Results Summary

Notes, Justifications, or Deviations

The following notes, justifications for tests not performed or deviations from the above listed specifications apply:

NOTE: Testing for PSD only as per customer request.

A later revision of the standard may have been substituted in place of the previous dated referenced revision. The year of the specification used is listed under applicable standards. Using the later revision accomplishes the goal of ensuring compliance to the intent of the previous specification, while allowing the laboratory to incorporate the extensions and clarifications made available by a later revision.

Test results were obtained using the KRD 901 254/31model, the client attests the test results are representative or worst case of all models as listed in appendix A

The following justifications apply:

Logs are kept on file.

Applicable Standards, Specifications and Methods

ANSI C63.4:2014	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
CFR47 FCC Part 96	Code of Federal Regulations – Citizens Broadband Radio Service
WINNF-TS-0122 Version V1.0.2 25 November 2020	Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT) Working Document
ISO/IEC 17025:2017	General requirements for the competence of testing and calibration laboratories

Document Revision Status

TR-7169012176A-CBRS-000: Feb 17, 2023. First Draft.

TR-7169012176A-CBRS-001: Feb 22, 2023.Minor revisions as per customer request. Reviewed and signed.

Definitions and Acronyms

The following definitions and acronyms are applicable in this report.
See also ANSI C63.14.

AE – Auxiliary Equipment. A digital accessory that feeds data into or receives data from another device (host) that in turn, controls its operation.

AM – Amplitude Modulation

Class A device – A device that is marketed for use in a commercial, industrial or business environment. A 'Class A' device should not be marketed for use by the general public and the instructions for use accompanying the product shall contain the following text:

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

Class B device – A device that is marketed for use in a residential environment and may also be used in a commercial, business or industrial environments.

EMC – Electro-Magnetic Compatibility. The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

EMI – Electro-Magnetic Immunity. The ability to maintain a specified performance when the equipment is subjected to disturbance (unwanted) signals of specified levels.

Enclosure Port – Physical boundary of equipment through which electromagnetic fields may radiate or impinge.

EUT – Equipment Under Test. A device or system being evaluated for compliance that is representative of a product to be marketed.

LISN – Line Impedance Stabilization Network

NCR – No Calibration Required

NSA – Normalized Site Attenuation

RF – Radio Frequency

EMC Test Plan – An EMC test plan established prior to testing. See 'Appendix A – EUT & Client Provided Details'.

Testing Facility

Testing for EMC on the EUT was carried out at customer location as described in Appendix A.

Calibrations and Accreditations

TÜV SÜD Canada Inc is accredited to ISO/IEC 17025 by A2LA with Testing Certificate #2955.19. The laboratory's current scope of accreditation listing can be found as listed on the A2LA website. All measuring equipment is calibrated on an annual or bi-annual basis as listed for each respective test.

Testing Environmental Conditions and Dates

Following environmental conditions were recorded in the facility during time of testing

Date	Test	Initials	Temperature (ºC)	Humidity (%)	Pressure (kPa)
Feb 14, 2023	PSD	SM	20-23	40-55	96.106

Detailed Test Results Section

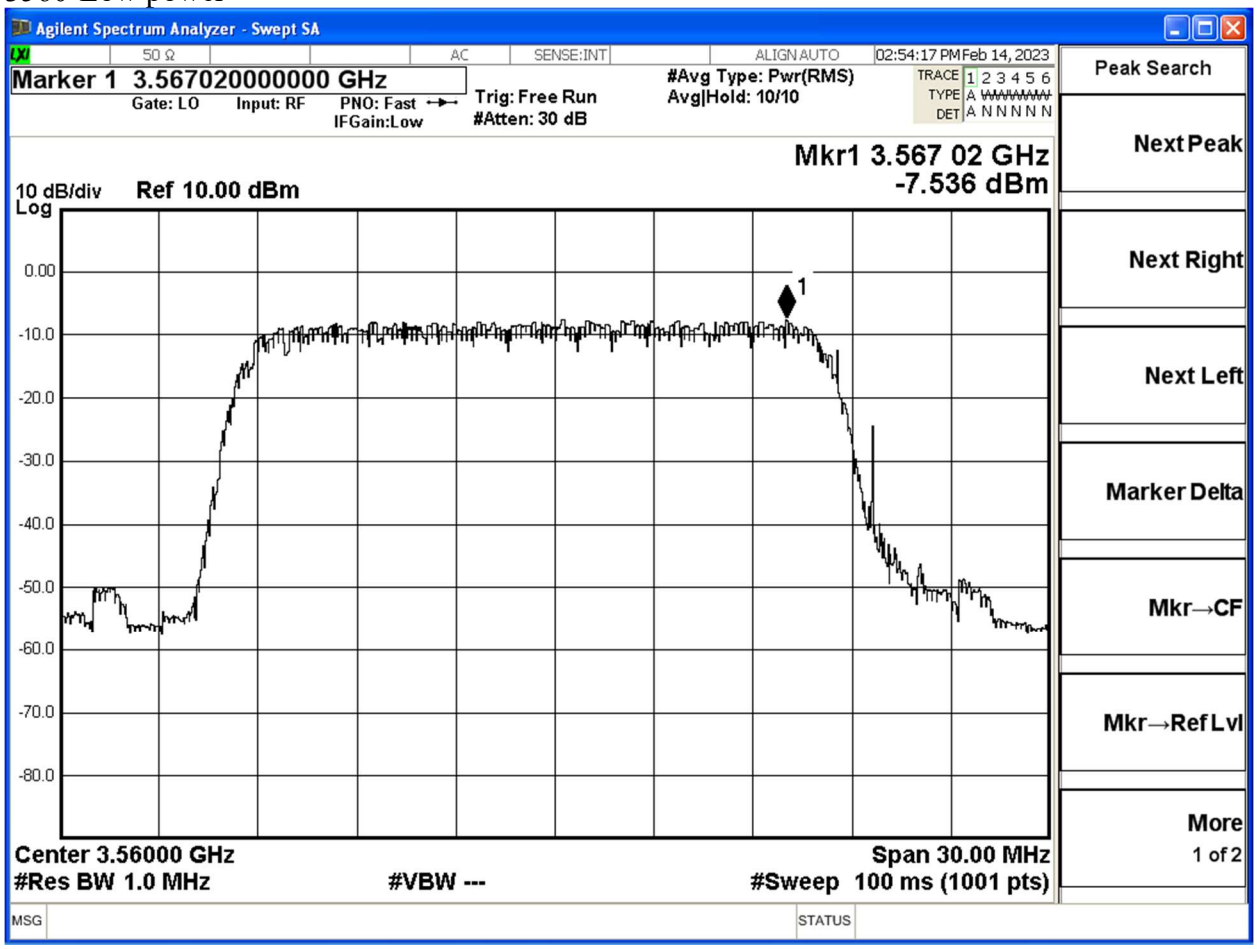
Confirm that the device transmits at a power level less than or equal to the maximum power level approved by the SAS.

7.1.4.1.1	X	X	WINNF.PT.C.HBT	UUT RF Transmit Power Measurement	Power Spectral Density test case. Assume we use 1 carrier bandwidth (say, 5 or 10 MHz), one frequency (say middle channel in band) for test. Measure at max transmit power, and reduce in steps of 3 dB to minimum declared transmit power.	P

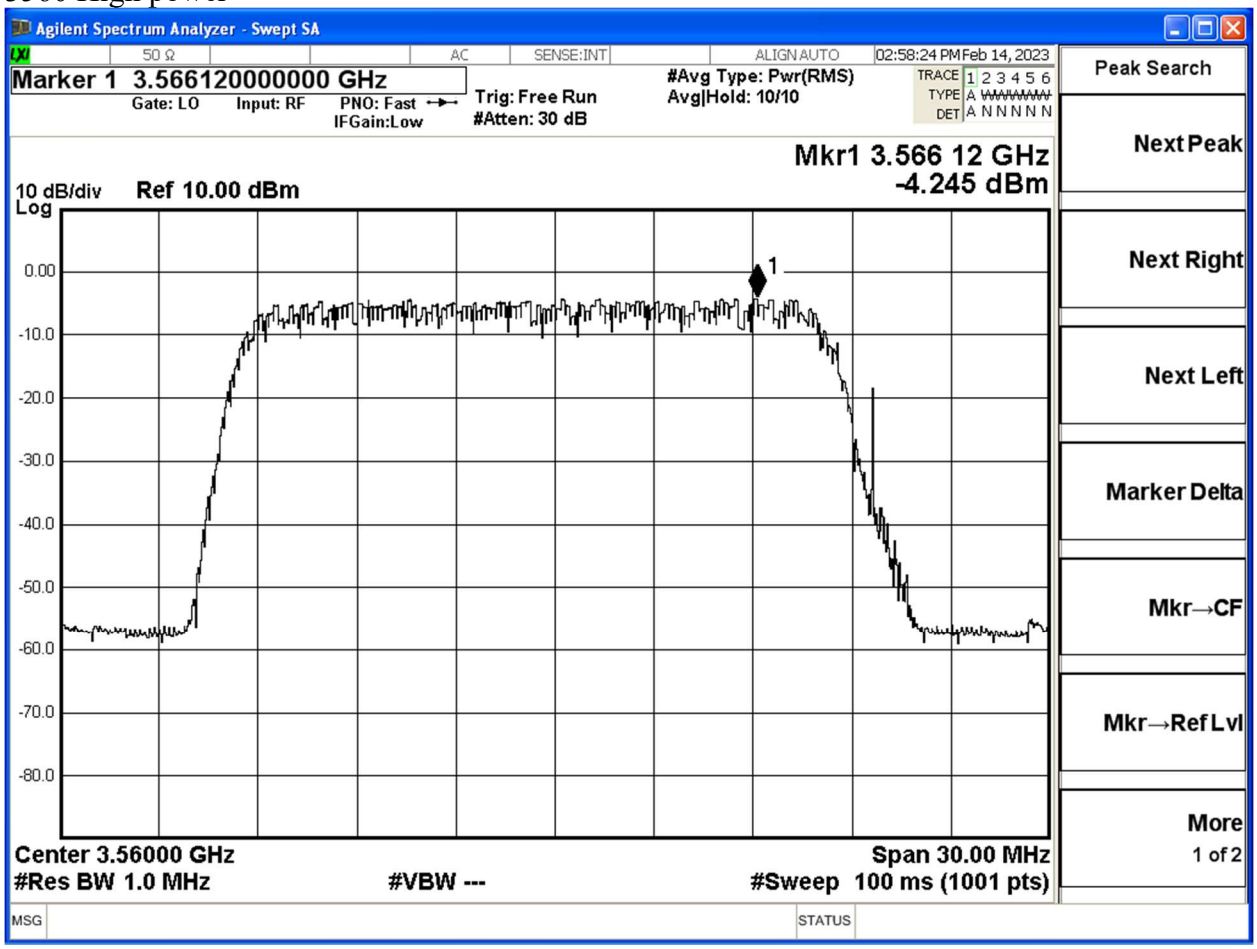
Test Table

		Raw	External	Conducted				EIRP 1 MHz	Margin
Freq	1MHz EIRP limit (target) dBm	1 MHz	Losses (dB)	dBm/MHz	Antenna gain dBi	Ports	Port gain (dB)	dBm/MHz	dB
3560	34	-7.53	14.29	6.76	11	32	15.05	32.81	1.19
3560	37	-4.24	14.29	10.05	11	32	15.05	36.10	0.90
3640	34	-7.95	14.36	6.41	11	32	15.05	32.46	1.54
3640	37	-4.94	14.36	9.42	11	32	15.05	35.47	1.53
3690	34	-7.54	14.42	6.88	11	32	15.05	32.93	1.07
3690	37	-4.67	14.42	9.75	11	32	15.05	35.80	1.20

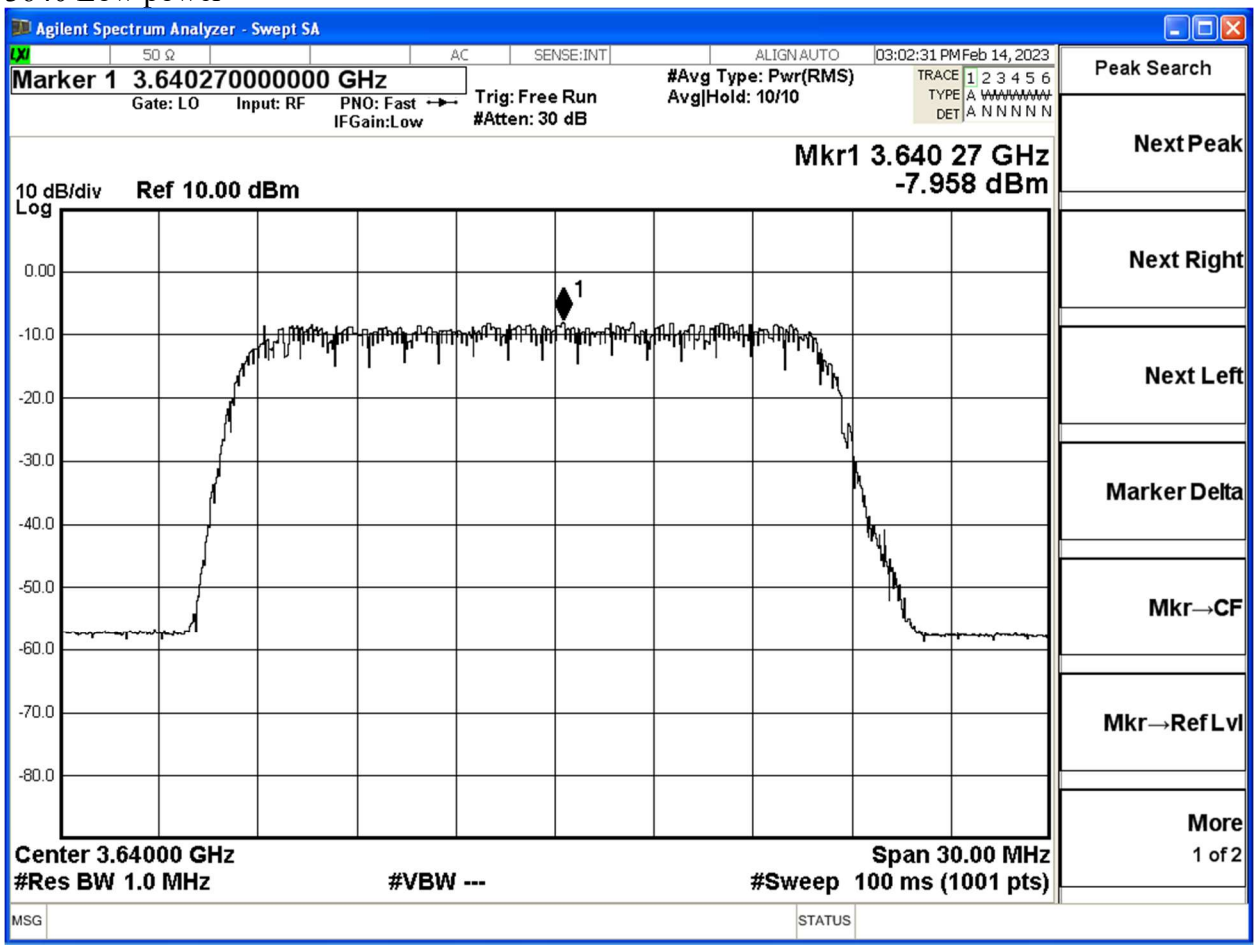
3560-Low power



3560 High power



3640 Low power



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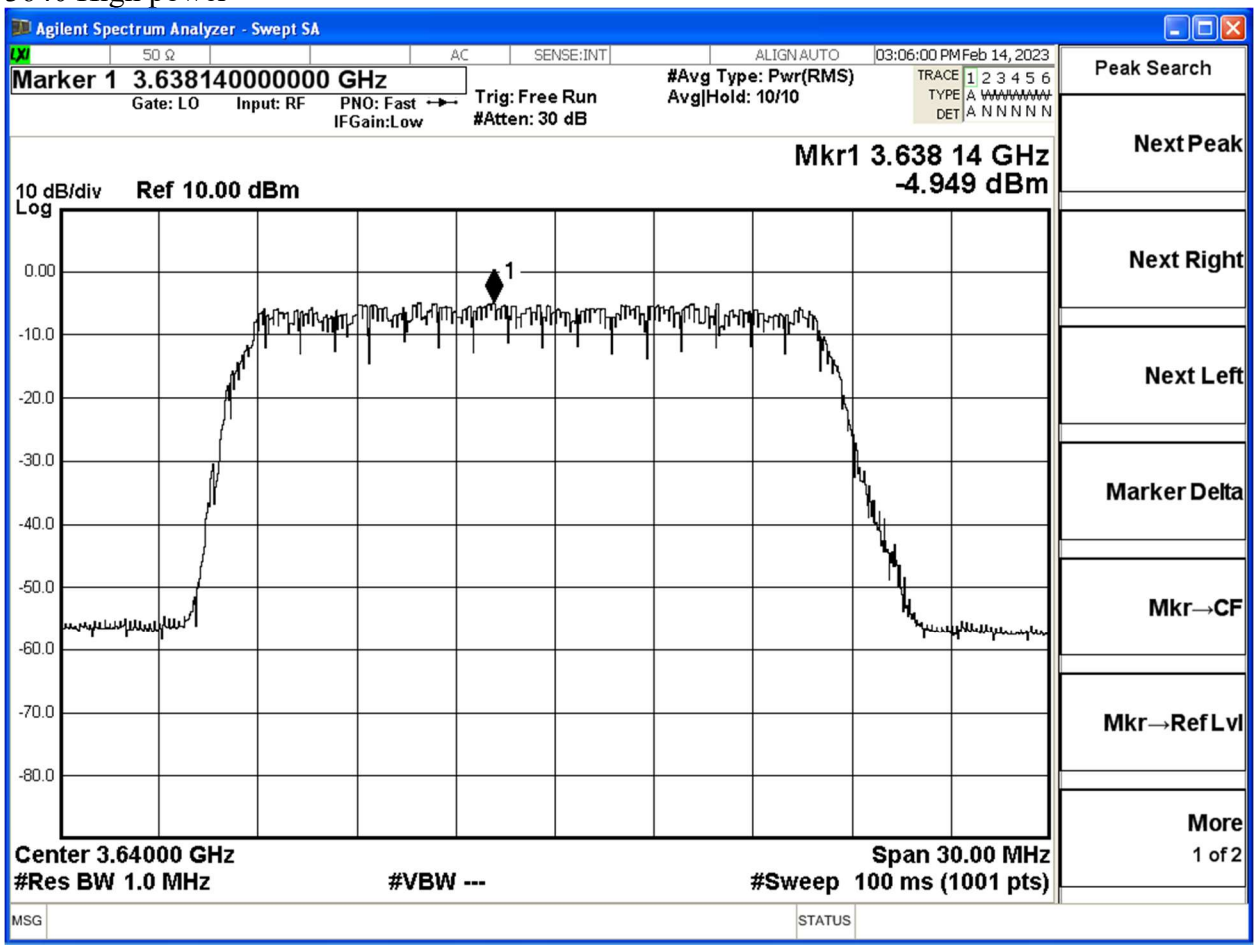
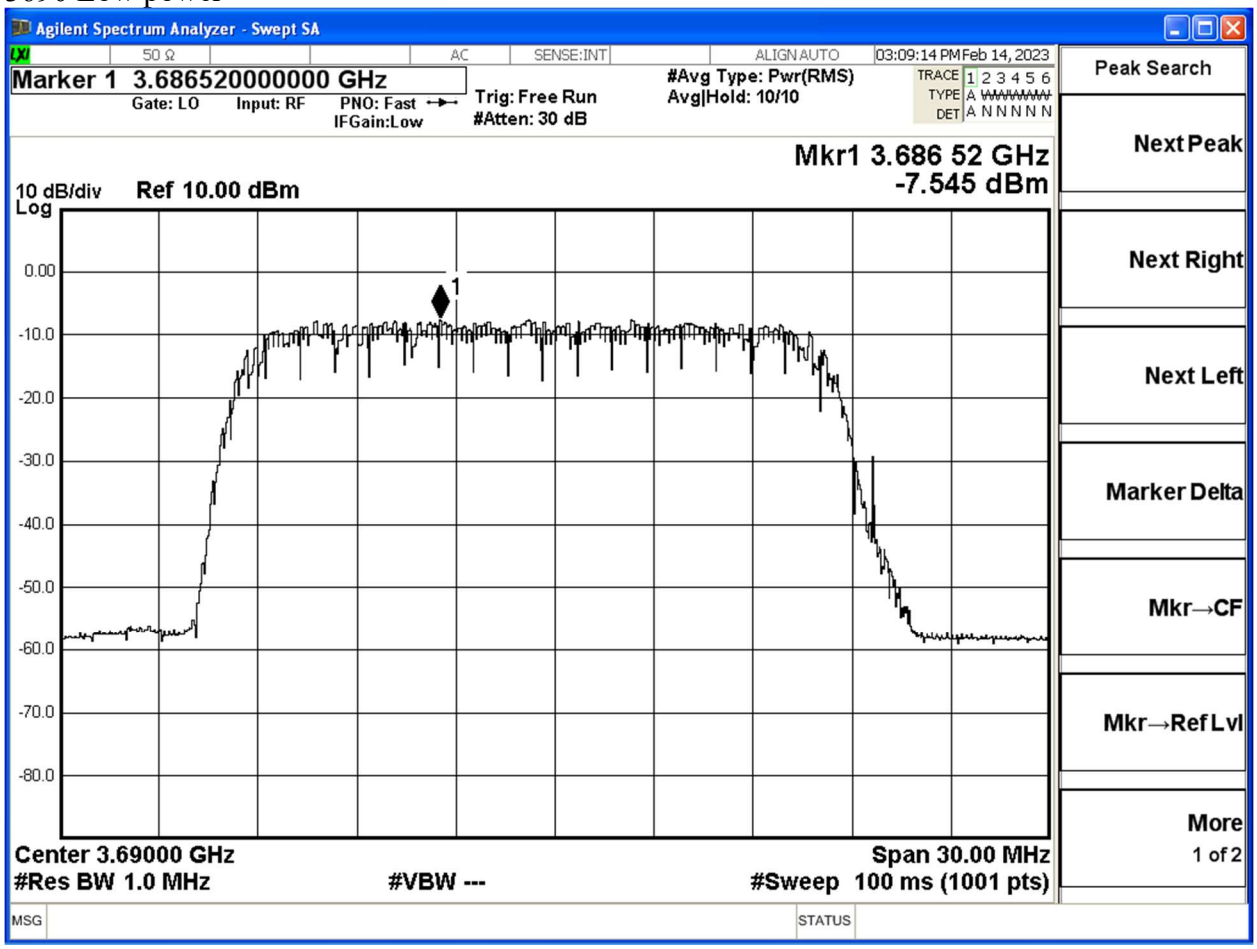
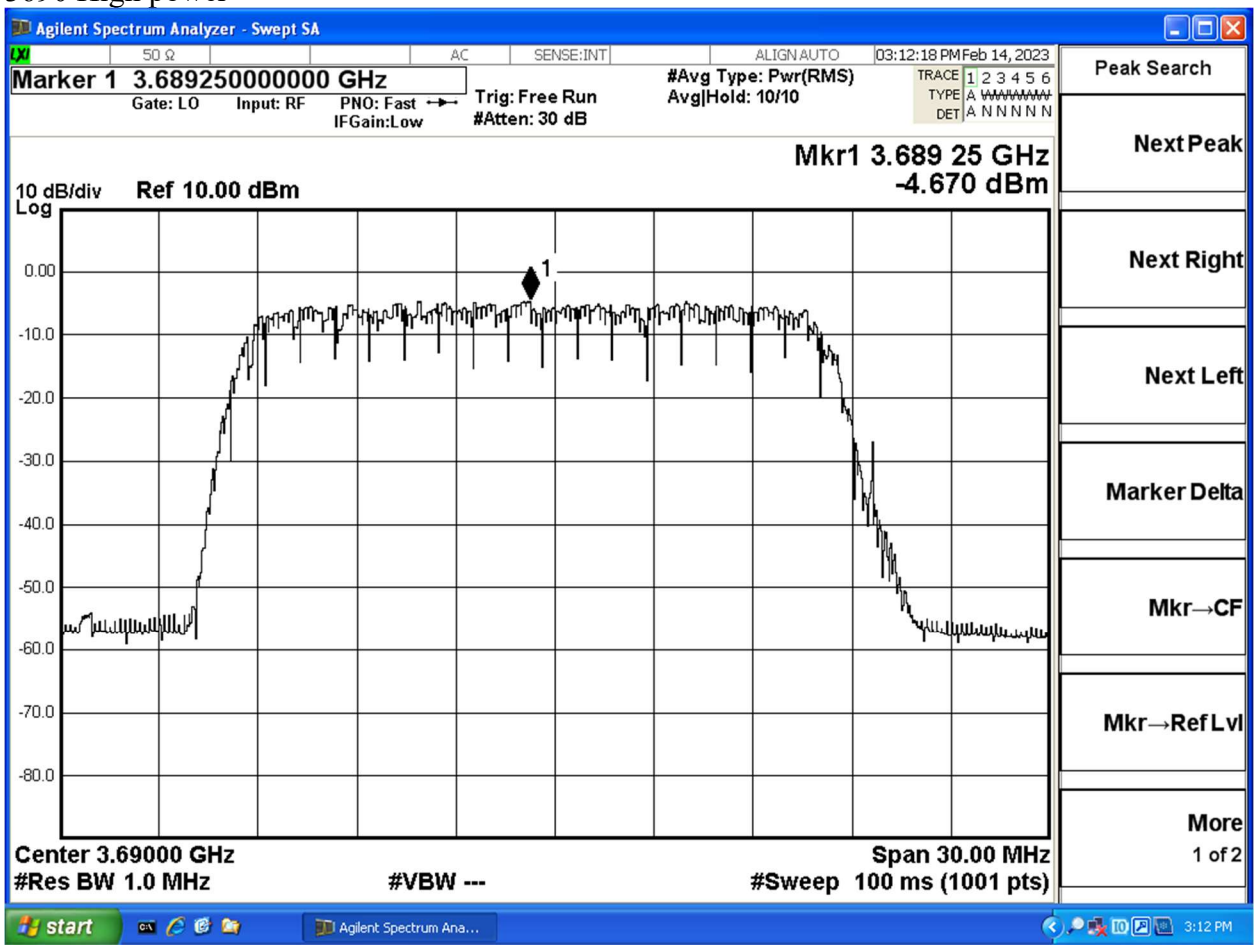


3690 Low power



3690 High power



Test Equipment

Instrument	Manufacturer	Type No.	Serial No	Calibration Period (months)	Calibration Due
Power Supply	Xantrex	XKW 60-50	E00109863	O/P Mon	-
Signal Analyzer	Agilent	MXA	SSG013930	24 months	2024-04-26
Attenuator	Pasternack	PE7004-10	N/S	O/P Mon	-
Switching Control Unit	Hewlett Packard	11713A	3748A060876	O/P Mon	-
RF Switch Unit	Burnsco	RARFSW 4x1	001	O/P Mon	-
Power Supply	Leader	730-3D	9801135	O/P Mon	-

Appendix A – EUT & Client Provided Details

General EUT Description

Manufacturer	Ericsson
Address	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden
Product Name	AIR 3268 B48
Product Number	KRD 901 254/1 (with antenna, security unlocked) KRD 901 254/11** (with antenna, security locked) KRD 901 254/3 (CAB/RDNB board for testing purpose, security unlocked) KRD 901 254/31* (CAB/RDNB board for testing purpose, security locked) Note*: Tested unit Note**: This will be the marketed, sold unit.
Serial Number(s)	E23E345115
Software Version	CXP9024418/22-R38A183 Domain Proxy Software Version ERICdomainproxyservice_CXP9035414 2.59.2
Hardware Version	R1B
Test Specification/Issue/Date	FCC CFR 47 Part 96: 2022

Technical Description

AIR 3268 B48 is a single-band TDD Antenna Integrated Radio unit with 32 transmitters and 32 receivers and 64 dual-polarized antenna elements supporting 3550-3700MHz. It has an enhanced Common Public Radio Interface (eCPRI) and 16/8 downlink/uplink layer multi-user MIMO supporting LTE and NR.

The Equipment Under Test (EUT) is shown in the photograph below. A full technical description
can be found in the Manufacturer's documentation.

EUT Configuration
Please see Appendix B for close up pictures of the unit as configured during testing
Cables and earthing when applicable were connected as per manufacturer's specification.

Appendix B – EUT, Peripherals, and Test Setup Photos

Test setup