

Test Report

Product	ComTac headset
Name and address of the applicant	3M Svenska AB Box 2341 331 02 Värnamo, Sweden
Name and address of the manufacturer	3M Svenska AB Box 2341 331 02 Värnamo, Sweden
Model	MT14H419A (ComTac IX)
Rating	3.0 V _{DC} (2x 1.5V cells)
Trademark	3M Peltor
Additional information	915 MHz SRD transceiver
Tested according to	FCC Part 15.249 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz ISED RSS-210, Issue 11, Annex B10 Bands 902-928 MHz, 2400-2483.5 MHz and 5725-5875 MHz
Order number	PRJ0074312
Tested in period	2025-06-01 – 2025-12-05
Issue date	2026-03-26
Name and address of the testing laboratory	 Nemko Scandinavia AS Instituttveien 6 2007 Kjeller, Norway www.nemko.com CAB Number: FCC: NO0001 ISED: NO0470 ISED No: 2040D-1   An accredited technical test executed under the Norwegian accreditation scheme
Prepared by [Jan G Eriksen] Approved by [Frode Sveinsen]	
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Revision history

Revision	Date	Comment	Sign
A	2025-12-08	First edition	JGER
B	2026-03-26	Editorials	JGER

GENERAL REMARKS

This report applies only to the samples tested. It is the manufacturer's responsibility to ensure the additional production units of this product are manufactured with identical electrical and mechanical components. The manufacturer is solely responsible for any modifications to the product that could result in non-compliance with the relevant regulations.

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Opinions expressed within this report regarding general assessments and qualifications for PASS or FAIL to the standards limits and requirements are not part of the current accreditation. Neither are opinions expressed regarding model variants covered by the testing of this report.

CALIBRATION

All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Between calibrations all test set-ups are controlled and verified on a regular basis by periodic checks to ensure, with 95% confidence, that the instruments remain within the calibrated levels.

MEASUREMENT UNCERTAINTY

Measurement uncertainties are calculated or considered for all instruments and instrument set-ups used during these tests. Uncertainty figures are found in a separate clause in this report.

CONTENTS

1	INFORMATION	4
1.1	Test Item	4
1.2	Normal test conditions	5
1.3	Test Engineers	5
1.4	Antenna Requirement	5
1.5	Worst-Case Configuration and Mode	5
1.6	Comments	5
2	TEST REPORT SUMMARY	6
2.1	General	6
2.2	Test Summary	6
3	TEST RESULTS	7
3.1	Occupied Bandwidth (99% BW) and Emission Bandwidth	7
3.2	Field Strength of Fundamental	8
3.3	Restricted Bands of operation	9
3.4	Radiated Emission, 30 – 1000 MHz	10
3.5	Radiated Emissions, 1-10 GHz	12
4	Measurement Uncertainty	14
5	LIST OF TEST EQUIPMENT	15
6	BLOCK DIAGRAM	16
6.1	Power Line Conducted Emissions	16
6.2	Test Site Radiated Emission	17

1 INFORMATION

1.1 Test Item

Product	ComTac Headset
Manufacturer	3M Svenska AB
Model	MT14H419A (ComTac IX)
FCC ID	Y9ZMT14H419
ISED ID	4406A-MT14H419
HVIN	MT14H419
Serial number	Conducted sample: 1000000000011 Radiated sample: 1000000000026
Hardware version	K501A
Software version	501-st-application-1.0.0 For tests K501-st-application-0.0.0.148 software with test modes was used.
Frequency Range	915.5 MHz
Tunable Bands	None
Number of Channels	1
Operating Modes	TX 915 MHz, modulated
Type of Modulation	GFSK
User Frequency Adjustment	None
Type of Power Supply	Primary Batteries (2x 1.5V)
Antenna Connector	Internal PCB antenna
Number of Antennas	1
Diversity or Smart Antennas	None
Desktop Charger	N/A

Description of Test Item

The tested item is a communications radio.

1.2 Normal test conditions

Temperature	20 - 24 °C
Relative humidity	20 - 50 %
Normal test voltage	3.0 V _{DC}

The values are the limit registered during the test period.

1.3 Test Engineers

Jan G Eriksen

1.4 Antenna Requirement

Is the antenna detachable?	☐ Yes	☒ No
If detachable, is the antenna connector non-standard?	☐ Yes	☐ No
Type of antenna connector: N/A		

Ref. FCC §15.203

1.5 Worst-Case Configuration and Mode

Radiated Emissions and Power Line Conducted Emissions were performed with the EUT set to transmit at the channel pre-programmed by customer.

1.6 Comments

All measurements were done with the EUT powered from fresh batteries.

All ports were populated during spurious emission measurements.

2 TEST REPORT SUMMARY

2.1 General

The tests were conducted on a sample of the equipment for demonstrating compliance with one or more of the following standards:

Standard	Description
FCC CFR 47 Part 15.249	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz
ISED RSS-210, Issue 11	Licence-Exempt Radio Apparatus: Category I Equipment
ISED RSS-GEN Issue 5	General Requirements for Compliance of Radio Apparatus

The following standards and documents were used for one or more measurements:

Standard	Description
ANSI C63.4-2014	Unintentional Radiators
ANSI C63.10-2020 (FCC)	Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI C63.10-2020 (ISED Canada) +cor.1-2023 +ANSI C63.10a-2024 +Errata to C63.10a-2024	Procedures for Compliance Testing of Unlicensed Wireless Devices +Corrigendum 1 +Amendment 1 +Errata to Amendment 1

All measurements are traceable to national standards.

A description of the test facility is on file with FCC and ISED Canada.

☒ New Submission	☒ Production Unit
☐ Class II Permissive Change	☐ Pre-production Unit
DXX Equipment Code	☐ Family Listing

2.2 Test Summary

Name of test	FCC Part 15 reference	RSS-210 Issue 11, RSS-GEN Issue 5 reference	ANSI C63.10-2020 Reference	Result
Supply Voltage Variations	15.31(e)	6.11 (RSS-GEN)	5.13	N/A
Number of Frequencies	15.31(m)	6.9 (RSS-GEN)	N/A	Pass
Antenna Requirement	15.203	6.8 (RSS-GEN)	5.8	Pass
Power Line Conducted Emission	15.107(a) 15.207(a)	7.2 / 8.8 (RSS-GEN)	6.2	N/A
Occupied Bandwidth (99% BW)	15.215(c)	6.7 (RSS-GEN)	6.9.3	Pass
Field Strength of Fundamental	15.249(a)(c)(e)	B.10(a) (RSS-210)	6.6	Pass
Radiated Emissions	15.249(a)(c)(d)(e) 15.209(a)	B.10(a)(b) (RSS-210) 7.3 (RSS-GEN) 8.9 (RSS-GEN)	6.3, 6.5, 6.6 6.10	Pass

3 TEST RESULTS

3.1 Occupied Bandwidth (99% BW) and Emission Bandwidth

FCC Part 15.215 (c)

ISED Canada RSS-GEN Issue 5, Clause 6.7

Measurement procedure: ANSI C63.10-2020 Clause 6.9.3

Test Results: Complies

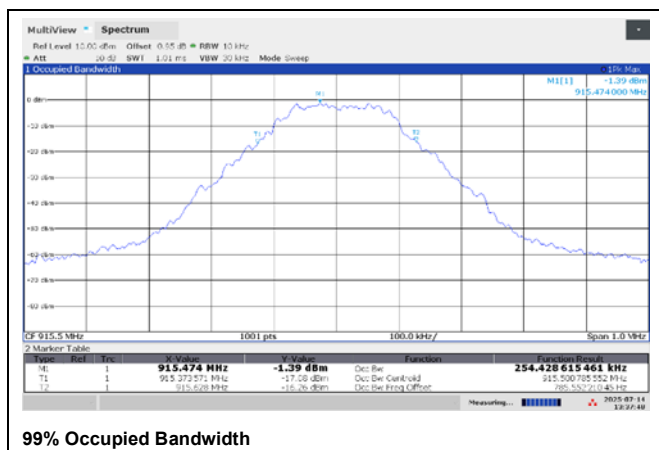
Measurement Data:

Carrier Frequency	Occupied Bandwidth (99% BW)
915 MHz	254.428 kHz

See attached plots.

Requirements:

No limit specified for 99% BW, reported for information only.



3.2 Field Strength of Fundamental

FCC 15.249 (a)(c)(e)

Ised Canada RSS-210 Issue 11, B.10(a)

Test Results: Complies

Measurement Data:

Maximum Field Strength @ 3m, Max Power, 915.5 MHz	
Measured Field Strength, Quasi-Peak	89.3 dB μ V/m
Limit	94 dB μ V/m

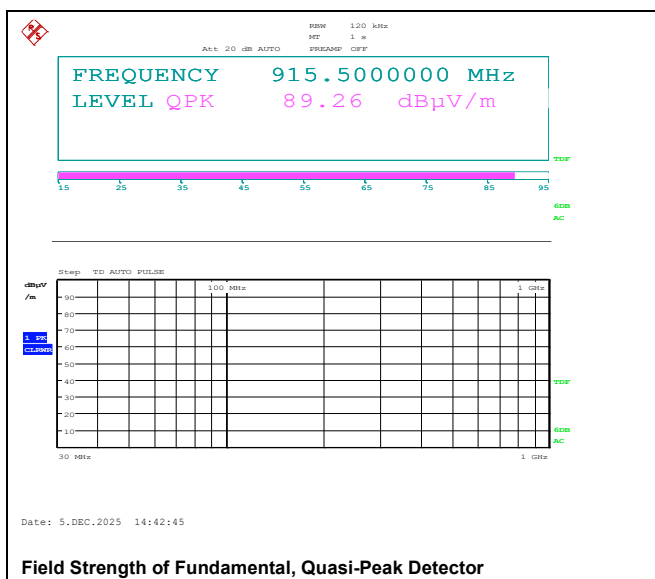
Field Strength was measured with the device in PTT-mode and transmitting normal traffic with pulsed and modulated carrier.

See attached plots.

Requirements:

The field strength of fundamental, measured at 3m, shall not exceed 50 mV/m (94 dB μ V/m).

The field strength limits shall be measured using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using a CISPR quasi-peak detector.



3.3 Restricted Bands of operation

Restricted Bands of operation for FCC and ISSED are defined in FCC Part 15.205 and ISSED RSS-GEN, Issue 5 clause 8.10.

Generally, no fundamentals are allowed in the restricted bands and all emissions must comply with the limits in FCC 15.209 or RSS-GEN, Issue 5, clause 8.9.

FCC (MHz)	ISSED Canada (MHz)	FCC (GHz)	ISSED Canada (GHz)
0.090-0.110		0.96-1.24 1.3-1.427	0.96-1.427
0.495-0.505		1.435-1.6265	
2.1735-2.1905		1.6455-1.6465	
	3.020-3.026	1.660-1.710	
4.125-4.128		1.7188-1.7222	
4.17725-4.17775		2.2-2.3	
4.20725-4.20775		2.31-2.39	
	5.677-5.683	2.4835-2.5	
6.215-6.218		2.69-2.9	2.655-2.9
6.26775-6.26825		3.26-3.267	
6.31175-6.31225		3.332-3.339	
8.291-8.294		3.3458-3.358	
8.362-8.366		3.6-4.4	3.5-4.4
8.37625-8.38675		4.5-5.15	
8.41425-8.41475		5.35-5.46	
12.29-12.293		7.25-7.75	
12.51975-12.52025		8.025-8.5	
12.57675-12.57725		9.0-9.2	
13.36-13.41		9.3-9.5	
16.42-16.423		10.6-12.7	
16.69475-16.69525		13.25-13.4	
16.80425-16.80475		14.47-14.5	
25.5-25.67		15.35-16.2	
37.5-38.25		17.7-21.4	
73-74.6		22.01-23.12	
74.8-75.2		23.6-24.0	
108-121.94 123-138	108-138	31.2-31.8	
149.9-150.05		36.43-36.5	
156.52475-156.52525		Above 38.6	
156.7-156.9			
162.0125-167.17			
167.72-173.2			
240-285			
322-335.4			
399.9-410			
608-614			

Frequencies in **Bold** text are specific for FCC or ISSED, all other frequencies are common.

3.4 Radiated Emission, 30 – 1000 MHz

FCC Part 15.209(a) / 15.249(a)

ISED Canada RSS-210 issue 11, B.10 (a)(b)

ISED Canada RSS-GEN Issue 5, Clause 7.3 / 8.9

Measurement procedure: ANSI C63.10-2020 Clause 6.5

Test Results: Complies

Measurement Data:

Detector: Peak (found frequencies were measured with Quasi-Peak Detector)

Measuring distance: 3 m

Test performed with continuous modulated wave.

Measured Frequency (MHz)	Carrier Frequency (MHz)	Modulation	Measured Emission (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30 – 88	915.5	GFSK	< 30	40.0	> 10
88 – 216	915.5	GFSK	< 30	43.5	> 13.5
216 – 960	915.5	GFSK	< 35	46.0	> 11
960 – 1000	915.5	GFSK	< 40	54.0	> 14

See attached plots

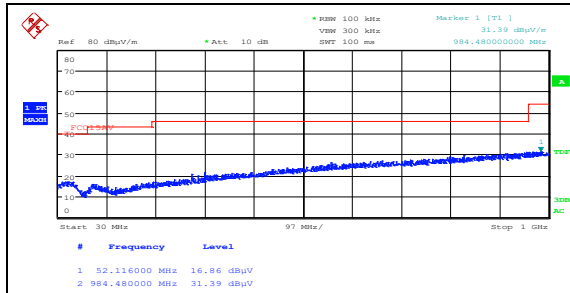
Requirements/Limit

The field strength of harmonic emissions, measured at 3 m, shall not exceed 0.5 mV/m (54 dB μ V/m).

The field strength limits shall be measured using an average detector.

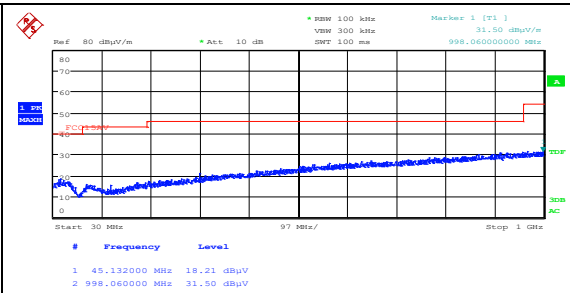
Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen or §15.209, whichever is less stringent.

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10	
Frequency	Radiated emission limit @3 meters	
30 – 88 MHz	100 μ V/m	40.0 dB μ V/m
88 – 216 MHz	150 μ V/m	43.5 dB μ V/m
216 – 960 MHz	200 μ V/m	46.0 dB μ V/m
960 – 1000 MHz	500 μ V/m	54.0 dB μ V/m
	Limits above are with Quasi Peak Detector	



Date: 15.JUL.2025 08:06:38

Radiated Emissions 30 - 1000 MHz, 915.5 MHz, GFSK, HP



Date: 15.JUL.2025 07:59:24

VP

3.5 Radiated Emissions, 1-10 GHz

FCC Part 15.209(a) / 15.249(a)

ISED Canada RSS-210 issue 11, B.10 (a)(b)

ISED Canada RSS-GEN Issue 5, Clause 7.3 / 8.9

Measurement procedure: ANSI C63.10-2020 Clause 6.6

Test Results: Complies

Measurement Data:

Measuring distance: 3m (1 – 10 GHz)
Test performed with continuous modulated wave.

RBW=1 MHz

Carrier Frequency (MHz)	Measured Frequency (GHz)	Mode	Measured Emissions (dBμV/m)		Limit (dBμV/m)		Margin (dB)	
			Peak	Average	Pk	Av	Pk	Av
915.5	1-10	GFSK	55.5	< 50	74	54	19.5	> 4

A High-Pass Filter was used for measurements from 1 GHz to 10 GHz

Antenna factor, amplifier-gain and cable loss are included in spectrum analyzer "Transducer factor".

See plots.

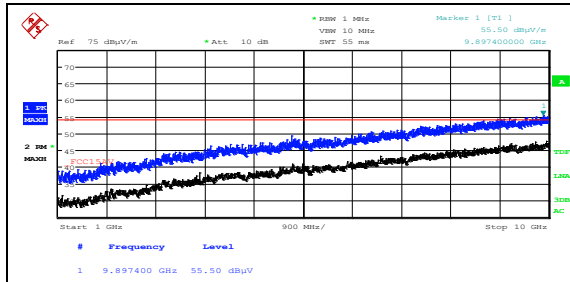
Requirements/Limit

The field strength of harmonic emissions, measured at 3 m, shall not exceed 0.5 mV/m (54 dBμV/m).

The field strength limits shall be measured using an average detector.

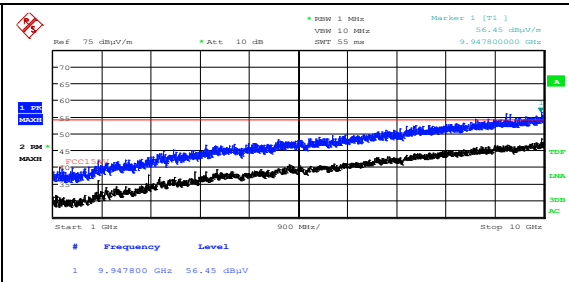
Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen or §15.209, whichever is less stringent.

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED Canada	RSS-GEN Issue 5, clause 8.9 @ frequencies defined in clause 8.10	
	Radiated emission limit @3 meters	
Frequency (MHz)	Average Detector (dBμV/m)	Peak Detector (dBμV/m)
1 – 40 GHz	54.0	74.0



Date: 15.JUL.2025 08:41:46

Radiated Emissions 1 - 18 GHz, 915 MHz, GFSK, HP



Date: 15.JUL.2025 08:39:48

VP

4 Measurement Uncertainty

Measurement Uncertainty Values		
Test Item		Uncertainty
Output Power		±0.5 dB
Power Spectral Density		±0.5 dB
Out of Band Emissions, Conducted	< 3.6 GHz	±0.6 dB
	> 3.6 GHz	±0.9 dB
Spurious Emissions, Radiated	< 1 GHz	±2.5 dB
	> 1 GHz	±2.2 dB
Emission Bandwidth		±4 %
Power Line Conducted Emissions		+2.9 / -4.1 dB
Spectrum Mask Measurements	Frequency	±5 %
	Amplitude	±1.0 dB
Frequency Error		±0.6 ppm
Temperature Uncertainty		±1 °C

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2

5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

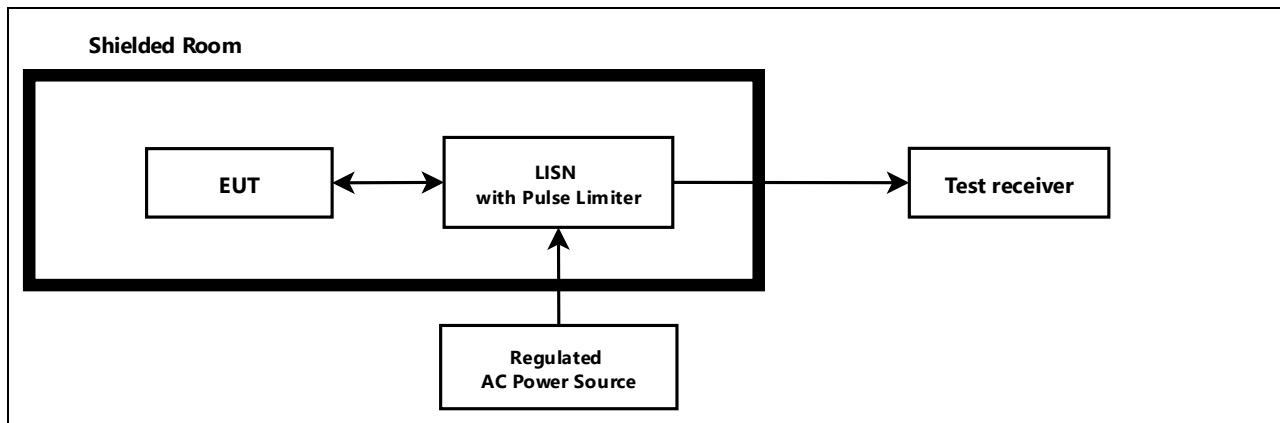
No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	FSW43	Spectrum Analyzer	Rohde & Schwarz	LR 1690	2025-02	2026-02
2	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2025-01	2026-01
3	6810.17B	Attenuator	Suhner	LR 1669	COU	
4	NO324415	Band Reject Filter (2.4 GHz)	Microwave Circuits	LR 1760	COU	
5	JB3	BiLog Antenna	Sunol	N-4525	2025-02	2027-02
6	310	Preamplifier	Sonoma Inst.	LR 1686	2025-01	2026-01
7	3117-PA	Horn Antenna +PreAmp	EMCO	LR 1717	2024-09	2026-09
8	6HC1000	HP FILTER	THRILITIC	LR 1770	COU	

The software listed below has been used for one or more tests.

No.	Manufacturer	Name	Version	Comment
1	Rohde & Schwarz	EMC32	10.50.40	EMC test software
2	Nemko	RSPlot	1.0.8.0	Screenshots from R&S Spectrum Analyzers

6 BLOCK DIAGRAM

6.1 Power Line Conducted Emissions



6.2 Test Site Radiated Emission

