TIMCO Engineering Inc.

FCC Authorized Telecommunications
Certification Body (TCB)

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October 4, 2019

SUBJECT:: TIMCO-TCB/Request for additional info - NOKIA SOLUTIONS AND NETWORKS, OY - **FCC ID: 2AD8UAEWDAEWE01 - JOB #: 2351UC19 , KDB Tracking Number 267367**

Dear FCC Examiner

Thank you for your thorough review of the product filing for **FCC ID: 2AD8UAEWDAEWE01** TIMCO Job # **2351UC19 - KDB Tracking Number 267367.** The Responses to your request for additional information are attached to this letter and changes to all exhibits have been uploaded with this letter.

Should there be any questions or procedural issues please feel free to contact me or the filing engineer by email and/or phone.

Sincerely,

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Dear FCC Examiner
Thank you for your review of the filing application for **FCC ID: 2AD8UAEWDAEWE01**. Per your letter our responses are listed.

The cover letter and your customer's response was reviewed. Please note the following:

1- The method to subtract the realized gain of the EUT antenna from its measured radiated power to arrive at theoretical conducted power is only allowed for the band edge measurements. For devices subject to part 30, the band edge is defined as the frequency range removed from the edge of the block by 10% of the transmitted signal bandwidth. You are not allowed to extend this region by an arbitrary amount simply because the realized gain of the EUT antenna is simulated beyond its in-band range.

Nokia Response: Nokia respects that the FCC can and will declare this interpretation however it deems fit. However, the interpretation as stated above does not mirror the understanding of the mmWave Joint Technical group rewriting ANSI C63.26. I also do not believe it is in the FCC's overall interest to restrict OOBE measurements to 10% beyond the transmitted signal bandwidth from bands edge. I would be happy to discuss this by phone or in person at the OET Lab at the FCC's convenience. The ramifications are significant and beyond the discussion for this specific application.

2- It is stated in the response that " So even if one was to assume that an equivalent signal source was radiating from an isotropic radiator and discounted the 20 dB of EUT gain correction it would still result in 6 dB margin to the limit. " If that is in fact the case, please provide two separate plots, one that shows the radiated emission at the band edge (corrected by EUT antenna gain), and another plot that shows the radiated emission from the band edge down to 36 GHz (without subtracting the EUT antenna gain) that shows the device still meets the emission limit. The other plots showing the emission levels below 36 GHz appear to meet the OOB limit of -13 dBm/MHz, and no further action is required.

Nokia Response: The originally requested radiated emissions plot of the product was performed at 1m for the 35-37 GHz frequency range**.** This measurement is a standard radiated emissions measurement and it is not corrected for product gain. It was performed without a preamplifier and with a notch filter to reduce the transmit carriers effect on the analyzers front end. The formal measurements document a minimum 6.29 dB of margin to the limit. The data is attached.

3- Please note that KDB publication 842590 D01 provides test procedures to measure total radiated power (TRP) in cases where radiated emission (EIRP) power does not meet the OOB limit. It is recommended to explore that option as well.

Kind Regards
Steve

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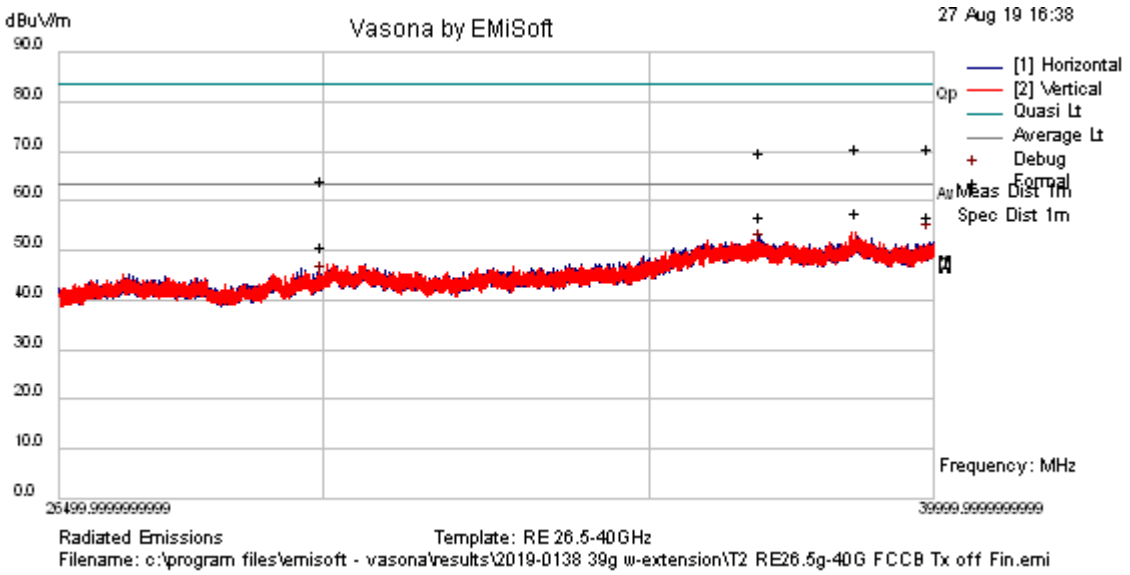
T2 Radiated Emissions 26.5G – 40 GHz FCC part 15 B Tx off Final



Results Title:	RE 26.5-40GHz
File Name:	c:\program files\emisoft - vasona\results\2019-0138 39g w-extension\T2 RE26.5g-40G FCCB Tx off Fin.emi
Test Laboratory:	AR8 MH 25C, 27% RH 1016mB
Test Engineer:	JY / MJS
Test Software:	Vasona by EMISoft, version 2.161
Equipment:	Nokia Wireless Group
EUT Details:	AEWD SN-YK191800017 AEWE-SN-YK192100004 Powered by -48Vdc, 6 amps.
Configuration:	Powered by -48VDC. Tested to FCC Class B, RE 26.5GHz - 40GHz, ESU IH69, Ant-E526. Internal attenuation 0 dB, RBW-30kHz, VBW-3MHz.,Formals RBW-1MHz, VBW-3MHz.
Date:	2019-08-27 16:38:30

FORMAL DATA

Freq. MHz	Raw dBµV	Cable dB	Factor dB	Level dBµV/m	Emission Type	Pol H/V	Ht. cm	Az. Deg.	Limit dBµV/m	Margin dB	Pass /Fail	Comments
38569.4	26.57	0	27.29	53.86	AvgMax	V	144	336	63.5	-9.64	Pass	
39923.1	25.83	0	27.31	53.15	AvgMax	H	205	44	63.5	-10.35	Pass	
36860.9	24.6	0	28.51	53.11	AvgMax	H	102	179	63.5	-10.39	Pass	
29996.4	24.03	0	22.84	46.86	AvgMax	V	155	146	63.5	-16.64	Pass	
39923.1	39.53	0	27.31	66.84	Peak	H	205	44	83.5	-16.66	Pass	
38569.4	39.52	0	27.29	66.81	Peak	V	144	336	83.5	-16.69	Pass	
36860.9	37.67	0	28.51	66.18	Peak	H	102	179	83.5	-17.32	Pass	
29996.4	37.71	0	22.84	60.55	Peak	V	155	146	83.5	-22.95	Pass	

PREVIEW DATA

Freq. MHz	Raw dBµV	Cable dB	Factor dB	Level dBµV/m	Emission Type	Pol H/V	Ht. cm	Az. Deg.	Limit dBµV/m	Margin dB	Pass /Fail	Comments
38569.4	26.42	0	27.29	53.72	Preview	V	200	315	63.5	-9.78	Pass	
39923.1	24.6	0	27.31	51.91	Preview	H	100	225	63.5	-11.59	Pass	
36860.9	21.52	0	28.51	50.03	Debug	H	105	317	63.5	-13.47	Pass	
29996.4	20.52	0	22.84	43.36	Debug	V	105	317	63.5	-20.14	Pass	

Note: Preview data was measured using a peak detector to identify frequencies of interest for formal measurement. Formal data consist of all frequencies in the preview list within 6 dB of specification limit or the top six frequencies. Failure in preview data does not necessarily constitute failure in formal data.