TCL通讯科技控股有限公司
TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED

March 23, 2022

Declaration – MIF for HAC RF Interference Evaluation

To Whom It May Concern,

This device, with **FCC ID: 2ACCJN065**, Hearing Aid Compatibility Requirement is going to be certified under **ANSI C63.19-2011 version per Part 20.19.**

The M rating was determined by measuring the maximum steady state average E-field values in dB (V/m) as documented in the HAC report and adding the MIF value in dB (V/m) using pre-determined values provided by Speag under the below table:

Typical MIF levels in ANSI C63.19-2011	
Transmission protocol	Modulation interference factor
GSM-FDD (TDMA, GMSK)	+3.63 dB
EDGE-FDD (TDMA, 8PSK, TN 0-1)	+1.23dB
EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	-0.52dB
EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	-1.82dB
UMTS-FDD(WCDMA, AMR)	-25.43dB
UMTS-FDD (HSPA)	-20.75dB
LTE-FDD (SC-FDMA, 1RB, 20MHz, QPSK)	-15.63 dB
LTE-FDD (SC-FDMA, 1RB, 20MHz, 16QAM)	-9.76 dB
LTE-FDD (SC-FDMA, 1RB, 20MHz, 64QAM)	-9.93 dB
LTE-TDD (SC-FDMA, 1RB, 20MHz, QPSK)	-1.62 dB
LTE-TDD (SC-FDMA, 1RB, 20MHz, 16QAM)	-1.44 dB
LTE-TDD (SC-FDMA, 1RB, 20MHz, 64QAM)	-1.54 dB
LTE-TDD(SC-FDMA,1RB,20MHz,QPSK,UL Subframe=2,3,4,7,8,9)	-3.41 dB
LTE-TDD(SC-FDMA,1RB,20MHz,16QAM,UL Subframe=2,3,4,7,8,9)	-3.17 dB
LTE-TDD(SC-FDMA,1RB,20MHz,64QAM,UL Subframe=2,3,4,7,8,9)	-3.31 dB
IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	-5.90 dB
IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	-5.17 dB

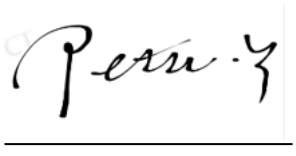
IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	-3.37 dB
IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	-2.02 dB
IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	-0.36dB
IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	-15.80 dB
IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	-5.82 dB
IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	-12.23dB
5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	−12.18dB
5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	−12.26dB
5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	−12.08dB
5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	−12.20dB
5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	−14.39dB
5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	−14.47dB
5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	−14.33dB
5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	−14.46dB
5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	−14.35dB
5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	−14.32dB
5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	−14.32dB
5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	−14.55dB
5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	−14.45dB
5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	−14.47dB
5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	−14.43dB
5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	−14.38dB
5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	−16.74dB
5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	−16.83dB
5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	−16.58dB
5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	−16.65dB
5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	−16.48dB

5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	−16.85dB
5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	−16.56dB
5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	−16.85dB
5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	−16.71dB
5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	−16.57dB
5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	−16.46dB
5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	−16.67dB
5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	−16.68dB
5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	−16.69dB
5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	−15.06dB
5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	−15.06dB
5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	−15.06dB
5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	−15.06dB

The Speag-reference documentation for supporting the pre-determined MIF value is Schmid &Partner Engineering AG, **UID SUMMARY (Communication Systems for C alibration, Issued Date 07/03/2018).**

We confirm that the Speag simulation provided represents all the air interface modes applicable for a HAC rating for this handset.

Yours Sincerely,



Peter Yang
Product Certification Manager
TCL Communication Ltd.