



Date: June 28, 2023

Federal Communications Commission
Office of Engineering and Technology Laboratory Division
7435 Oakland Mills
Rd. Columbia MD
21046

Attn: Office of Engineering and Technology

HAC-Attestation - FCC ID: BCG-E8427A, BCG-E8428A, BCG-E8429A, BCG-E8430A
BCG-E8431A, BCG-E8432A, BCG-E8433A, BCG-E8434A
BCG-E8435A, BCG-E8436A, BCG-E8437A, BCG-E8438A
BCG-E8439A, BCG-E8440A, BCG-E8441A, BCG-E8442A

To whom it may concern:

APPLE, INC. hereby declares that the MIF values detailed below are based on worst case operating modes for all air interfaces for which the HAC rating is provided based on the current methodology for determining MIF values.

SPEAG test files

UID	Communication System Name	MIF (dB)
10021-DAC	GSM-FDD (TDMA, GMSK)	3.63
10011-CAC	UMTS-FDD (WCDMA)	-27.23
10170-CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16QAM)	-9.76
10182-CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16QAM)	-9.76
10176-CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16QAM)	-9.76
10173-CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16QAM)	-1.44
10235-CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16QAM)	-1.44
10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	-2.02
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	0.12
10069-CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps)	-3.15
10671-AAC	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	-5.58
10866-AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	-16.69
10898-AAB	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	-16.68
10903-AAB	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	-16.68
10929-AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	-15.06



10930-AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	-15.06
10931-AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	-15.06
10934-AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	-15.07

Sincerely,

A handwritten signature in blue ink that reads "Abhishek Rala".

Abhishek Rala
Global Certification Manager
Apple Inc.