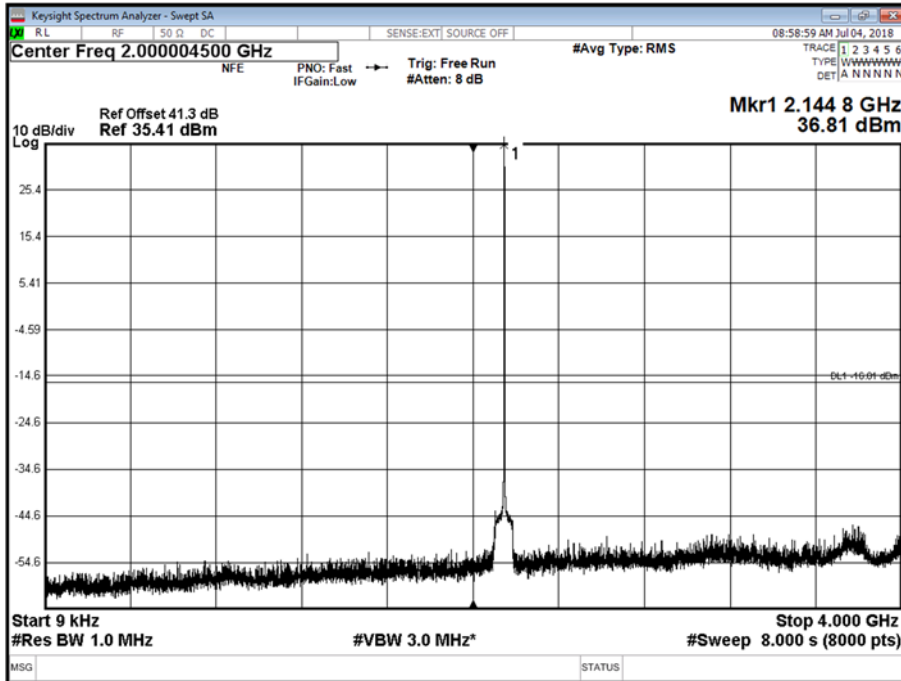


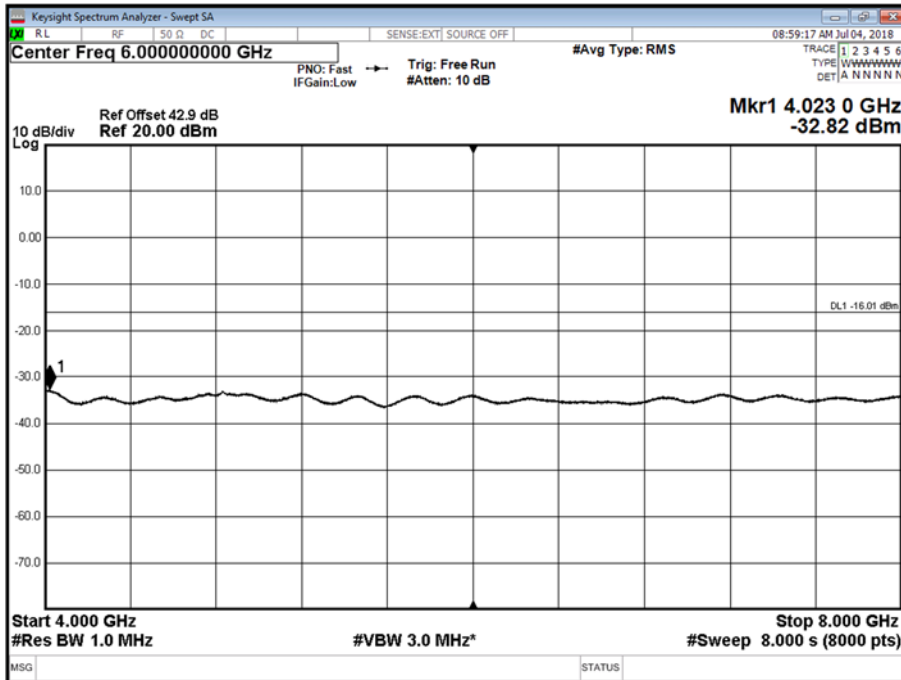


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



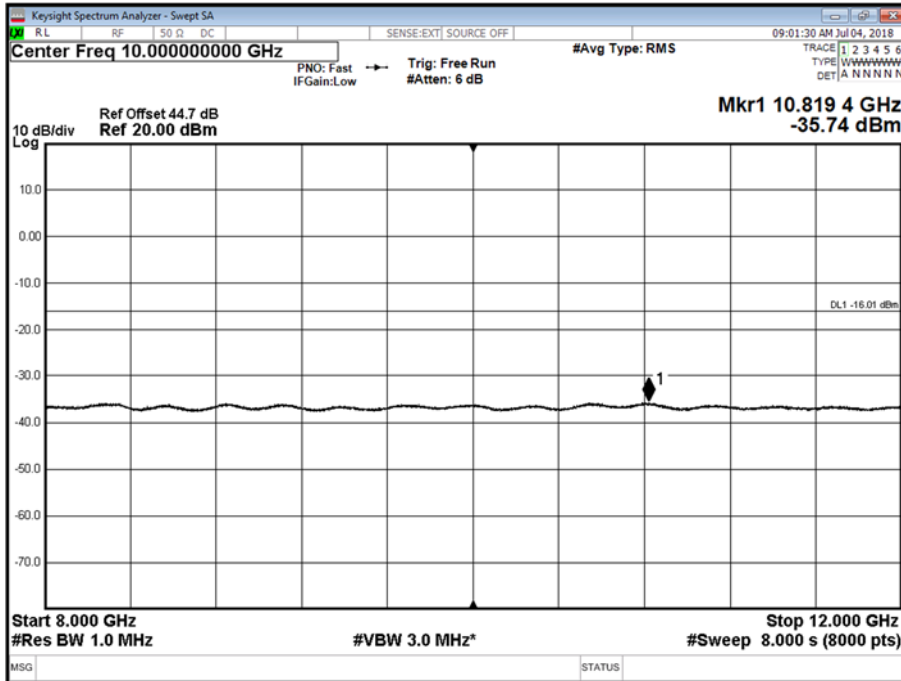
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 2 - Range 4000 to 8000 MHz



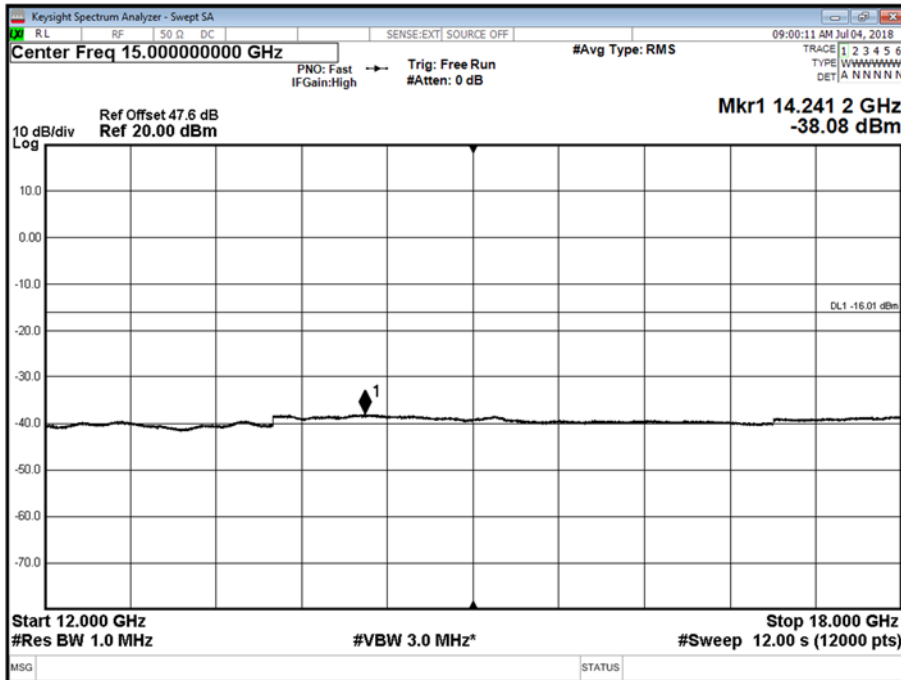


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 3 - Range 8000 to 12000 MHz



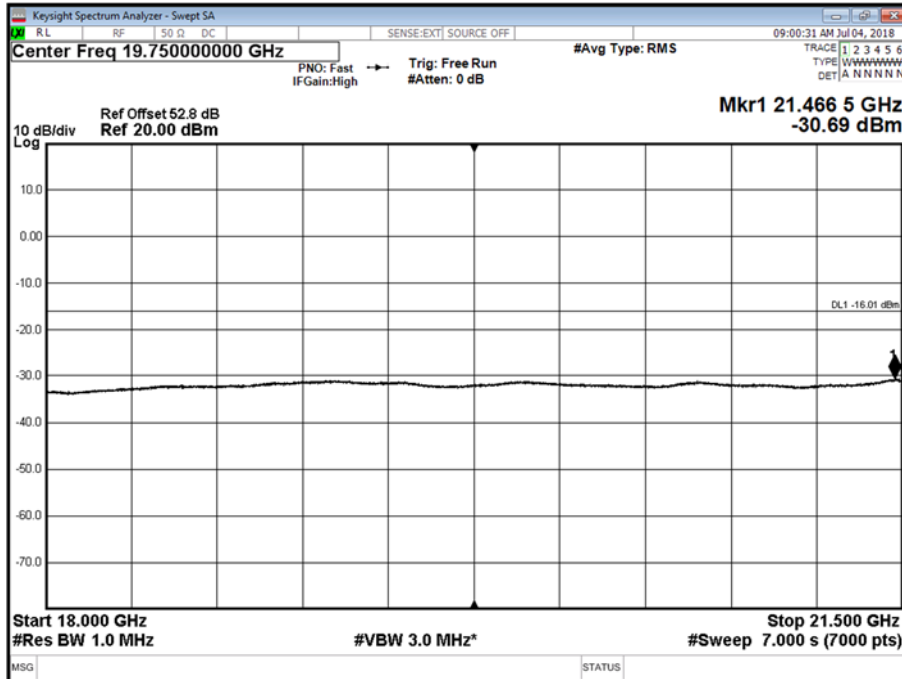
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 4 - Range 12000 to 18000 MHz



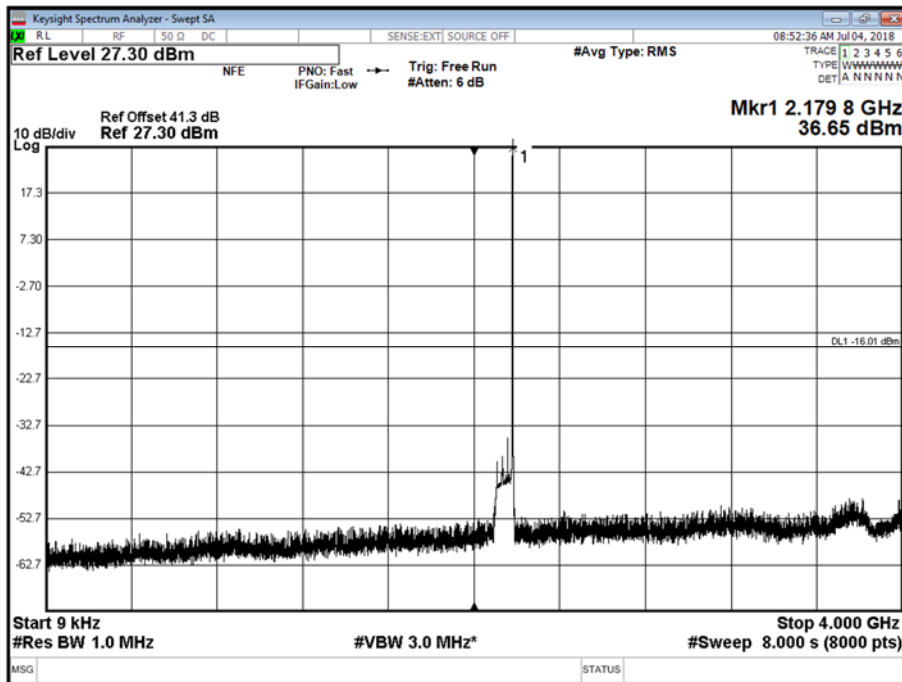


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 5 - Range 18000 to 20000 MHz



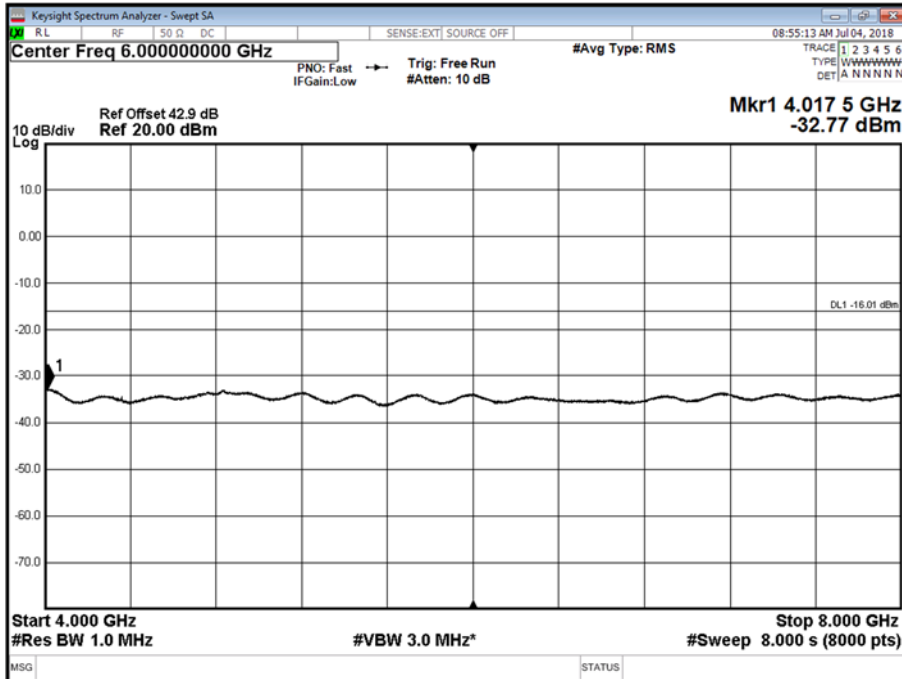
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



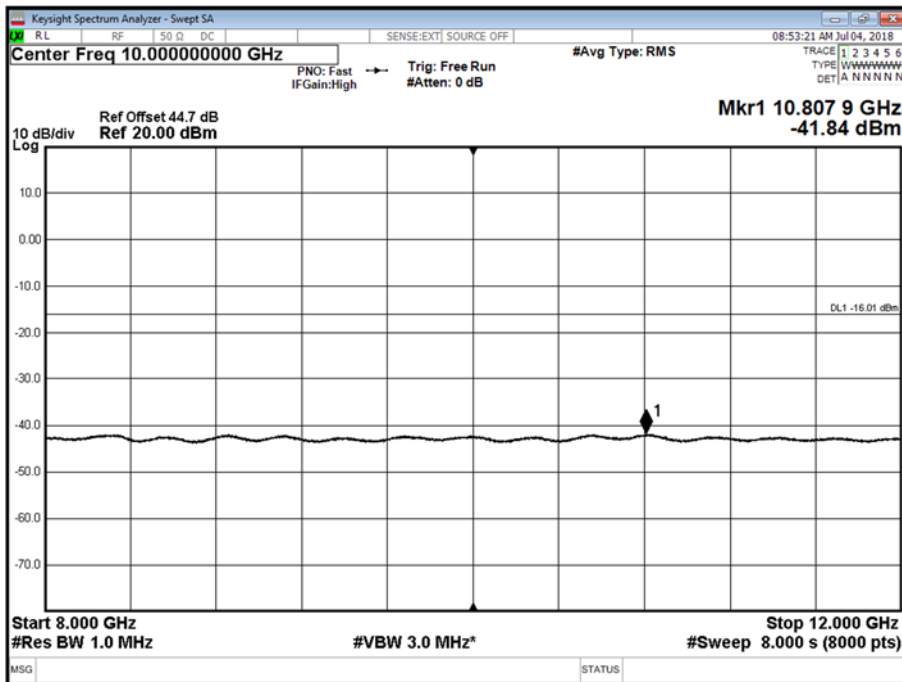


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 2 - Range 4000 to 8000 MHz



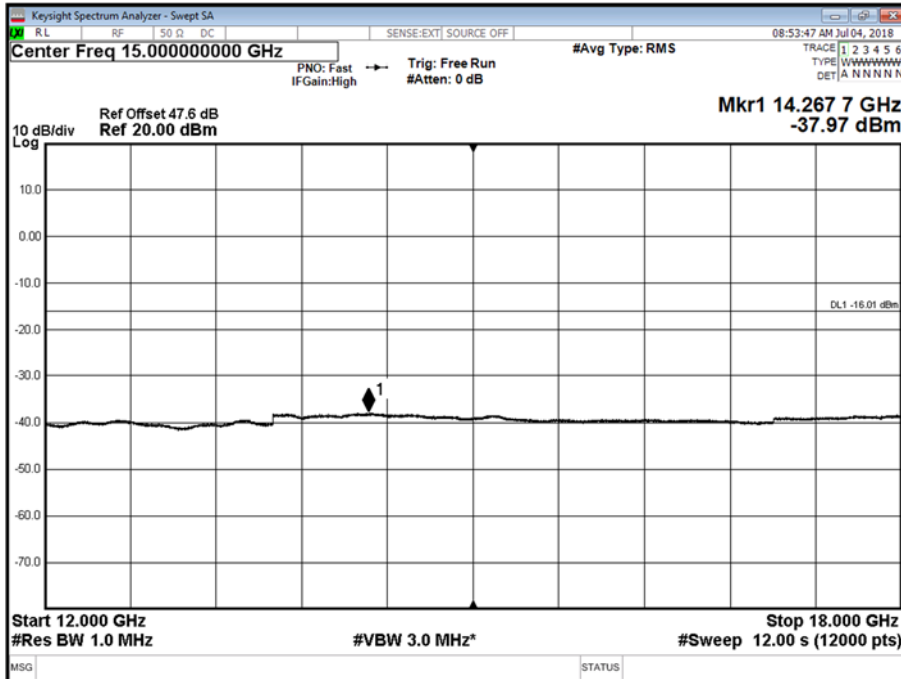
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 3 - Range 8000 to 12000 MHz



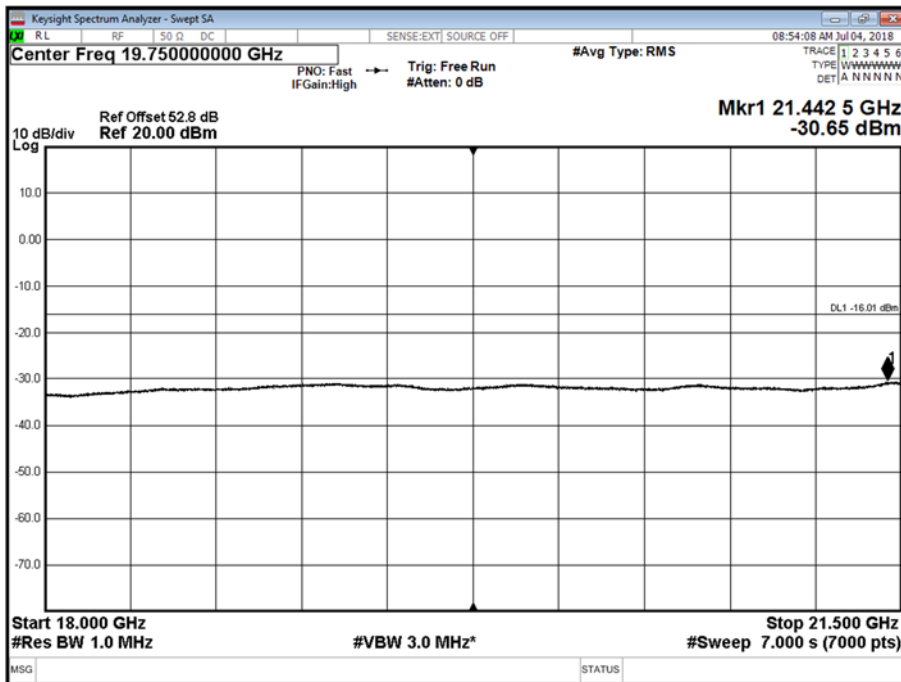


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 4 - Range 12000 to 18000 MHz



Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 5 - Range 18000 to 20000 MHz



Limit	-16dBm
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Product Service

2.5 RADIATED EMISSIONS

2.5.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1051
FCC CFR 47 Part 27, Clause 27.53 (h)
Industry Canada RSS-139, Clause 6.5

2.5.2 Date of Test and Modification State

25 July 2018 - Modification State

2.5.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.5.4 Environmental Conditions

Ambient Temperature	19.2°C
Relative Humidity	55.6%

2.5.5 Test Method

The test was applied in accordance with test method requirements of ANSI/TIA-603-C-2004.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within the chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarizations.

The Applicant declared that the highest internally generated frequency would be up to 2200MHz and so the upper limit for measurement was calculated at 10 times this, which is 22GHz.

Emissions identified within the range 30MHz – 22GHz were then formally measured using a Peak detector as the worst case.

In the frequency Range 30MHz – 1GHz, the measurement was performed with a resolution bandwidth of 100kHz.

In the frequency Range 1GHz – 22GHz, the measurement was performed with a resolution bandwidth of 1MHz.

The measurements were performed at a 3m distance unless otherwise stated.

2.5.6 Test Results

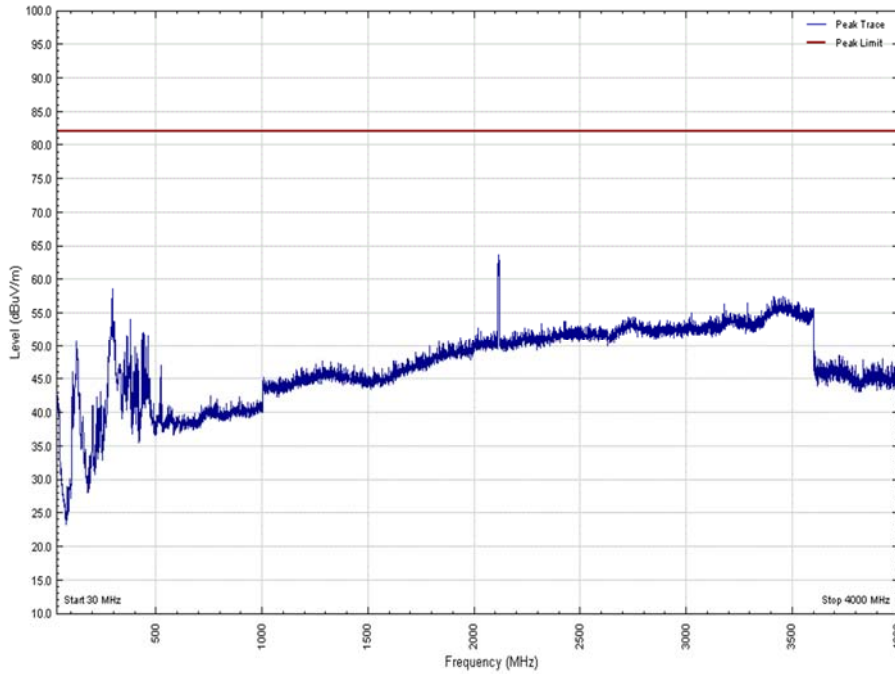
Configuration A

Maximum Output Power 37 dBm

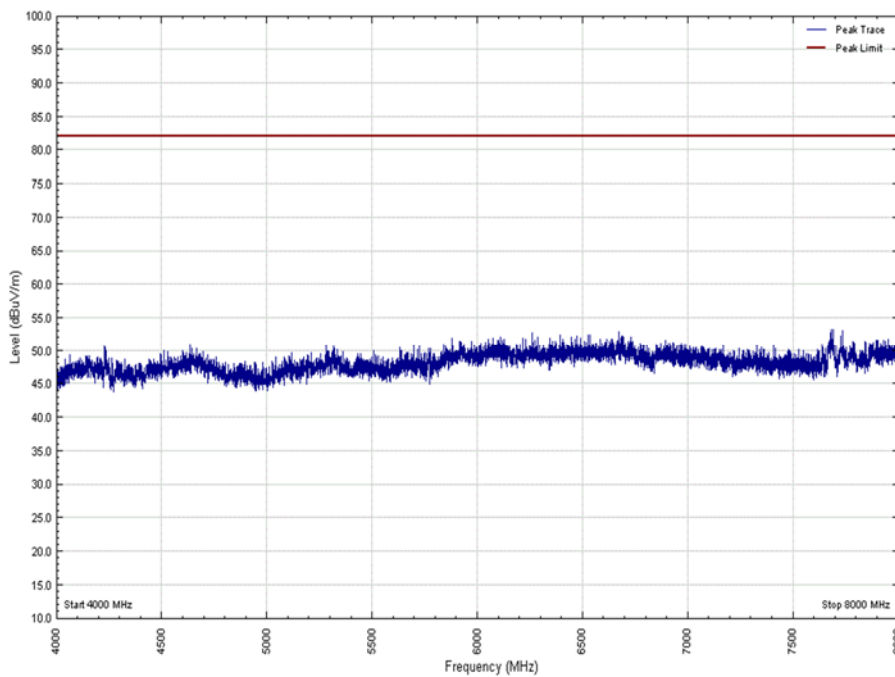


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



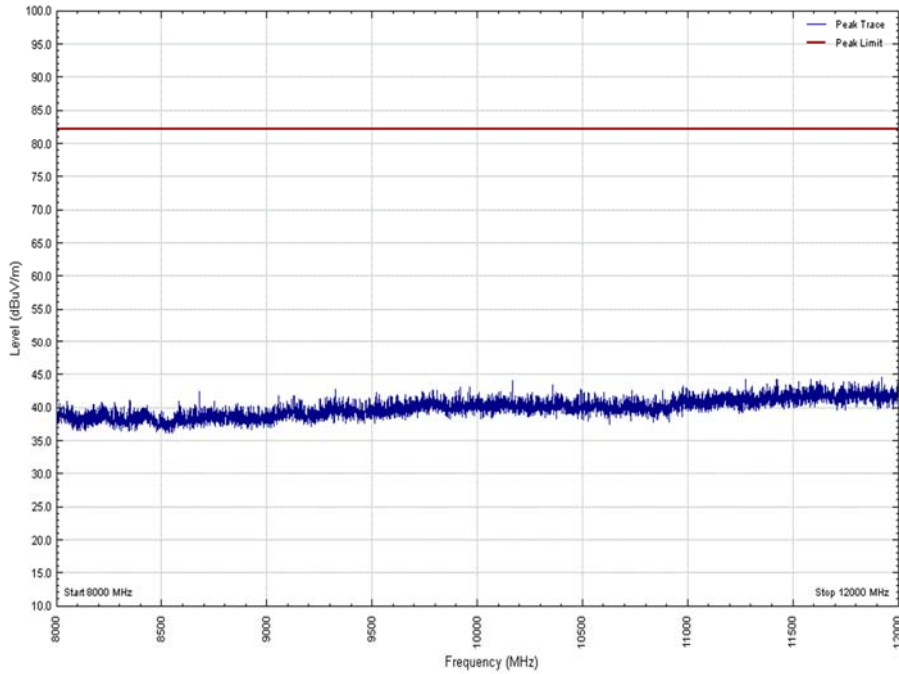
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



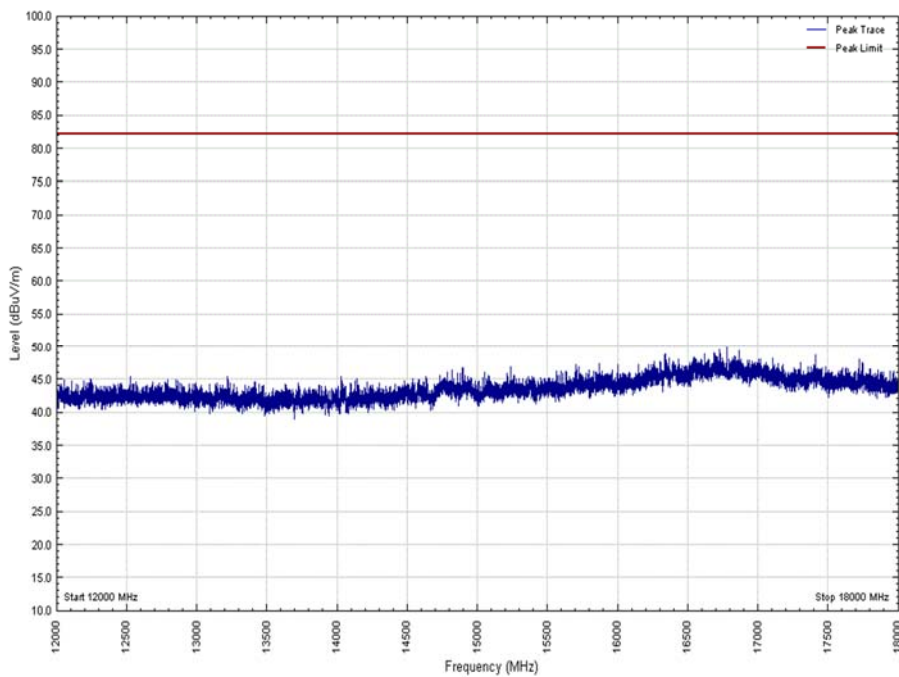


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000
to 12000 MHz - Horizontal



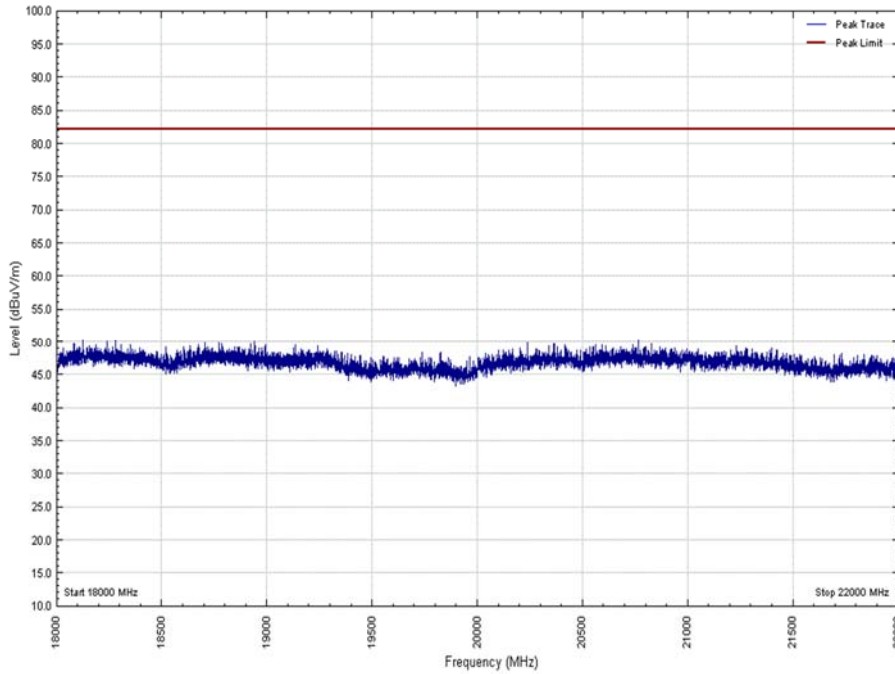
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000
to 18000 MHz - Horizontal



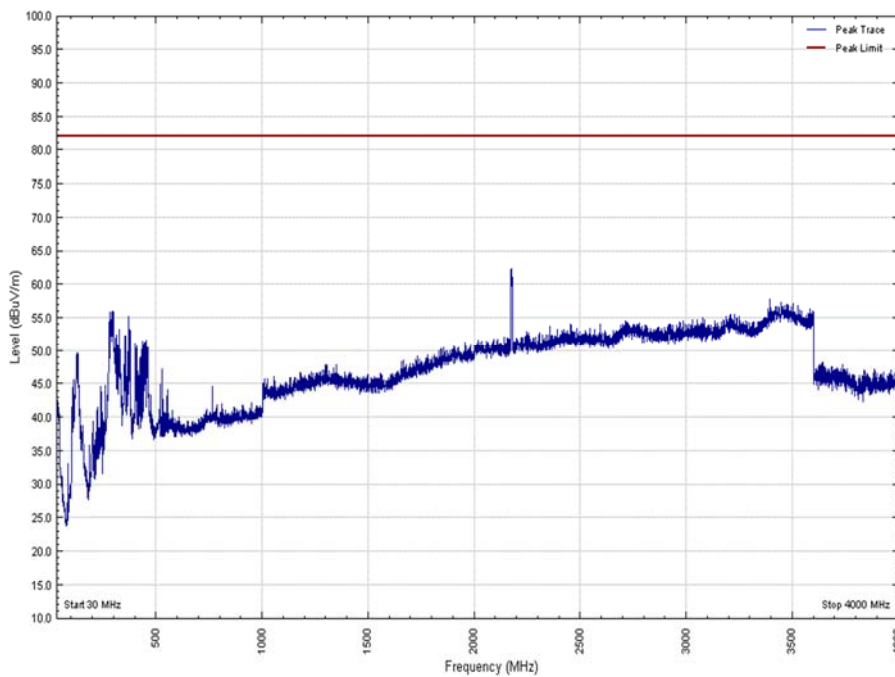


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



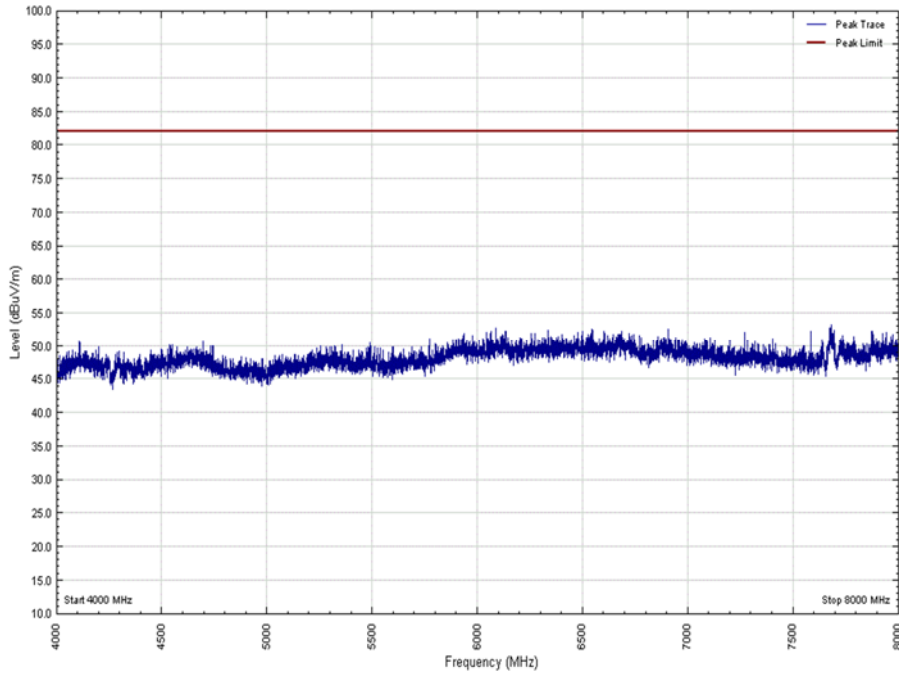
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



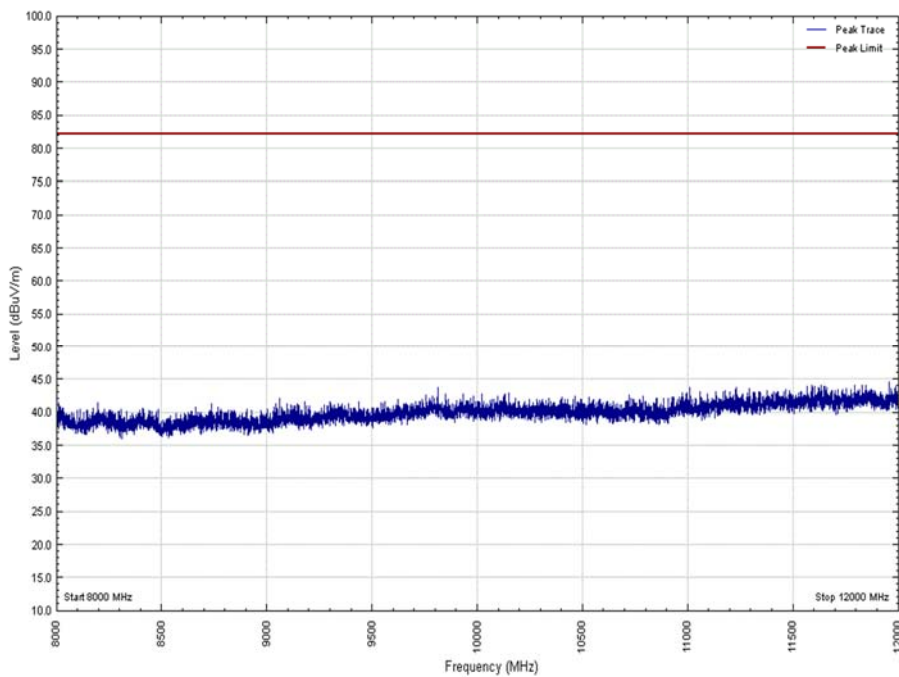


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



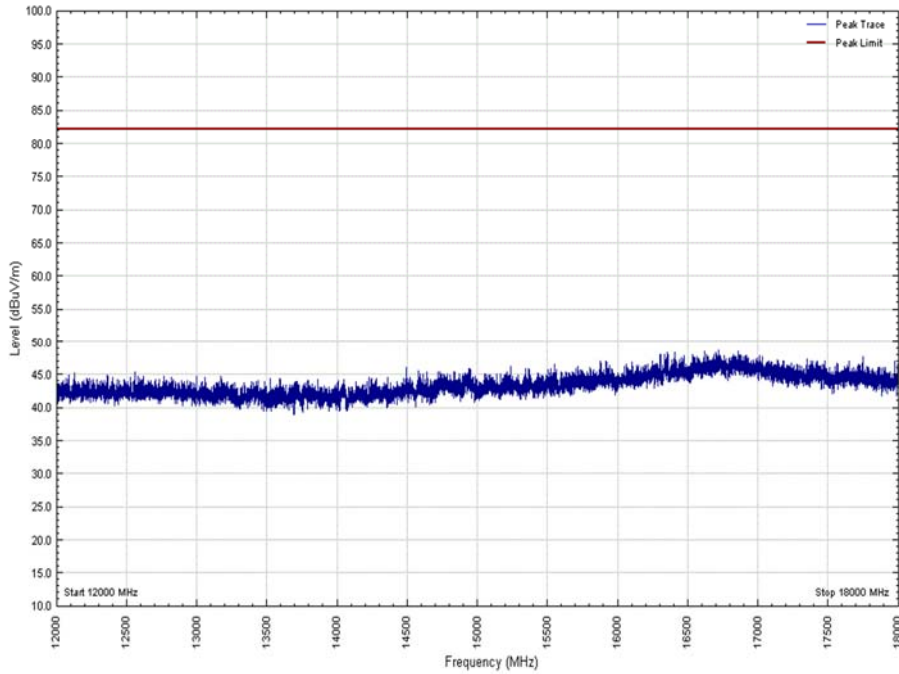
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Horizontal



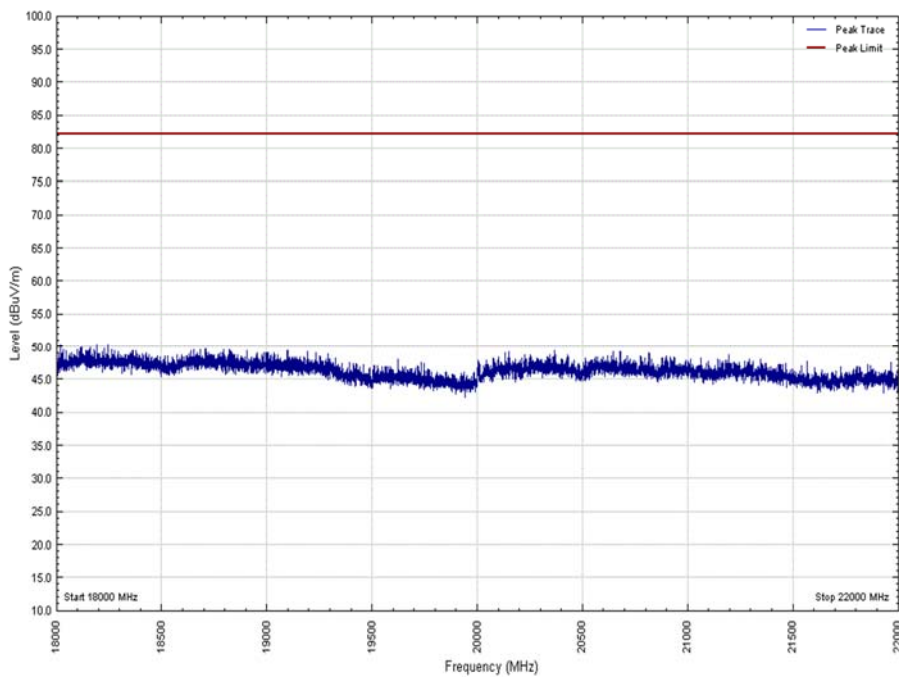


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Horizontal



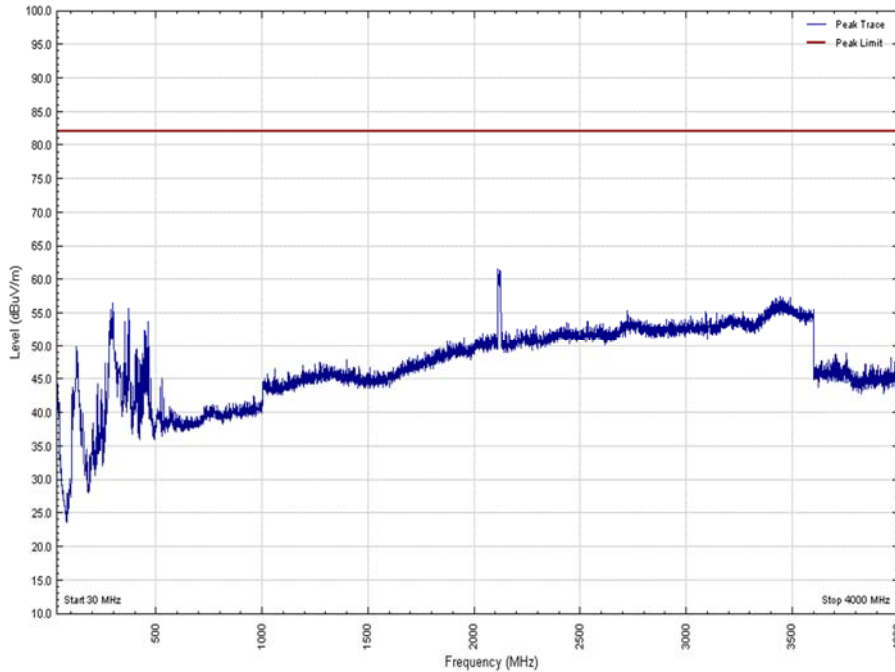
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



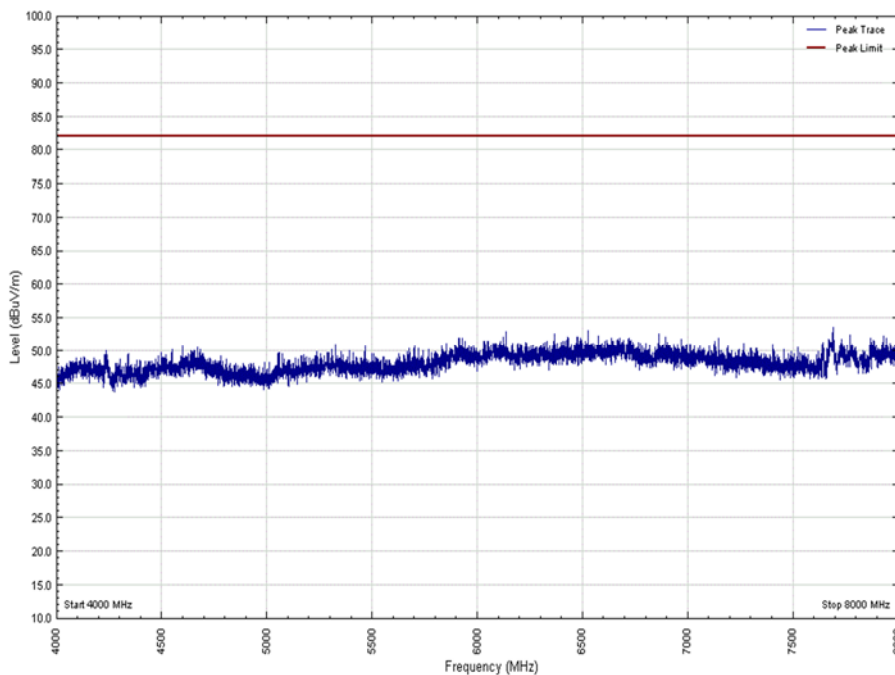


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



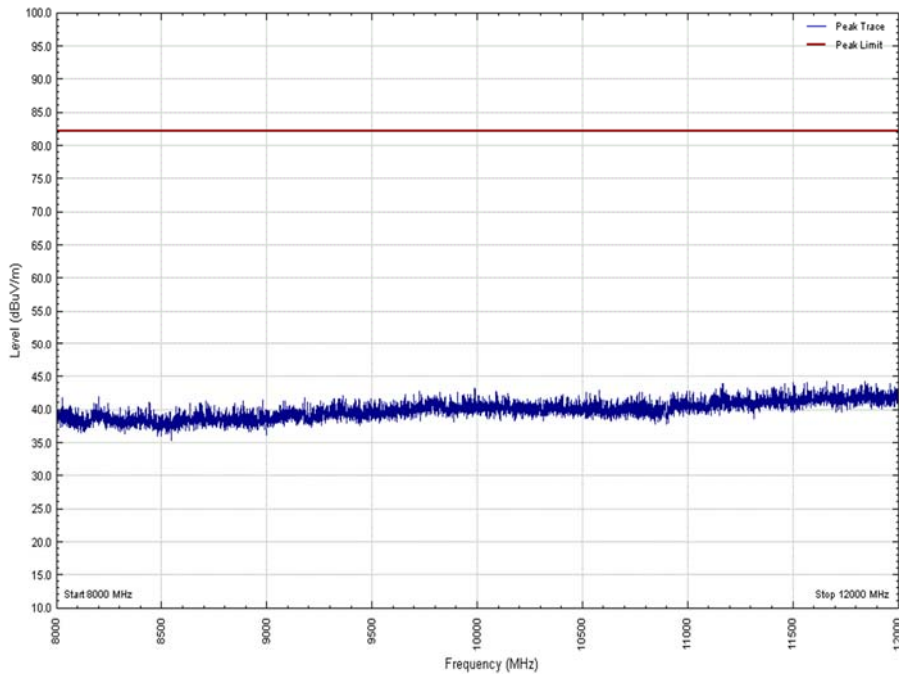
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



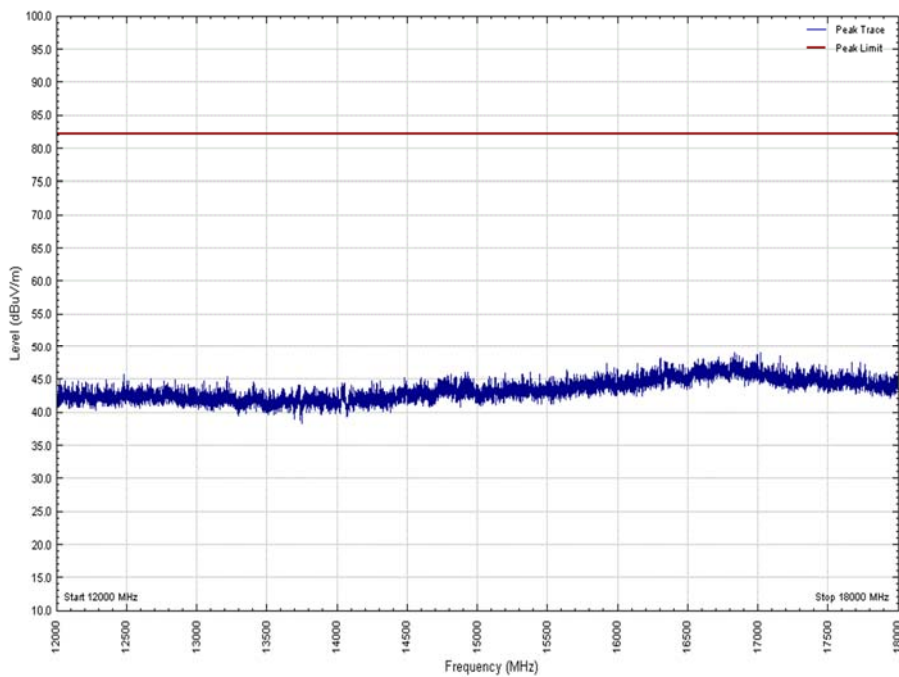


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000 to 12000 MHz - Horizontal



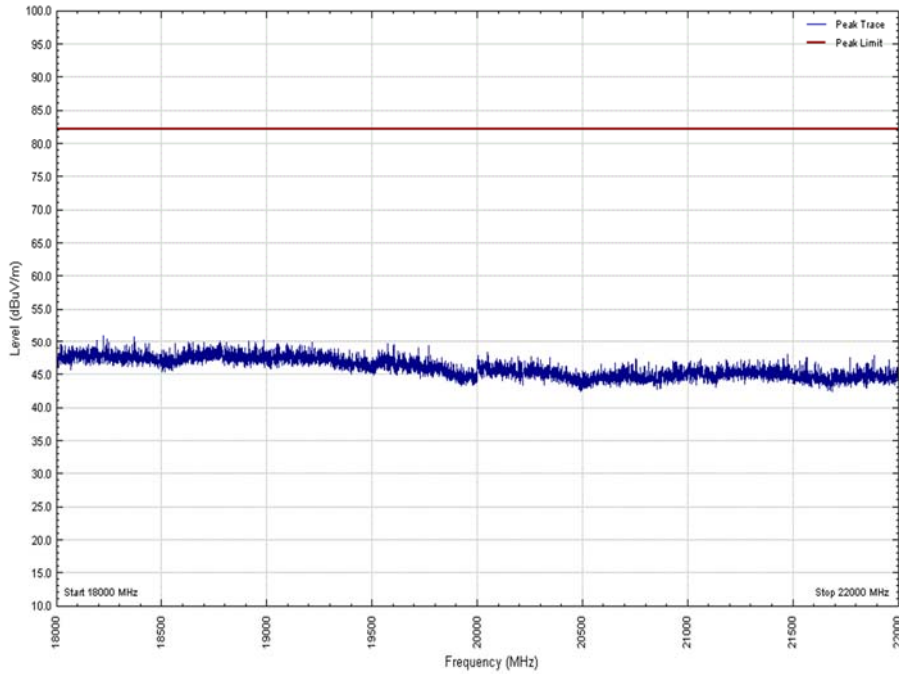
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000 to 18000 MHz - Horizontal



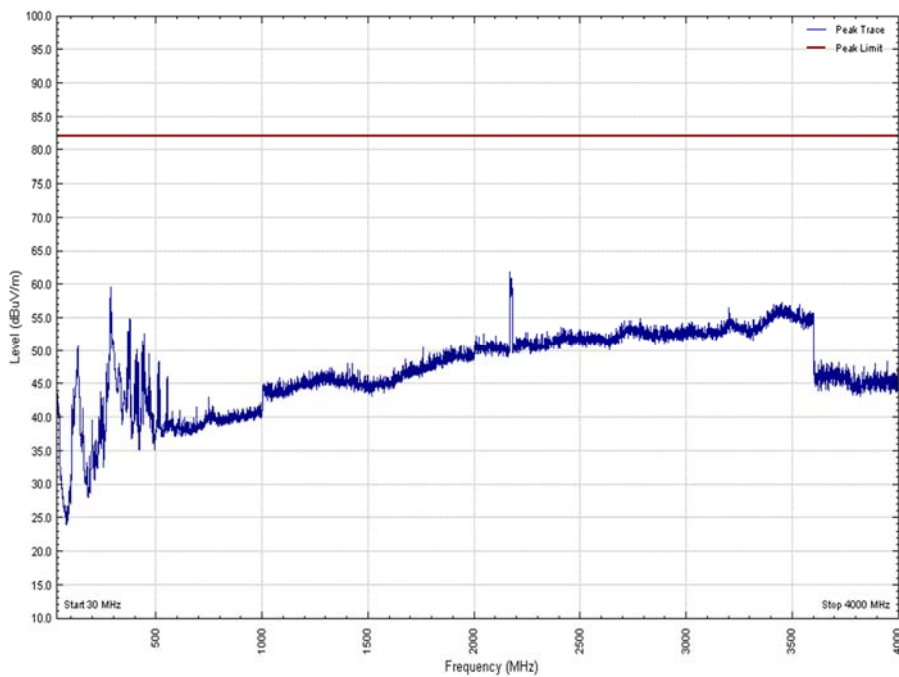


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



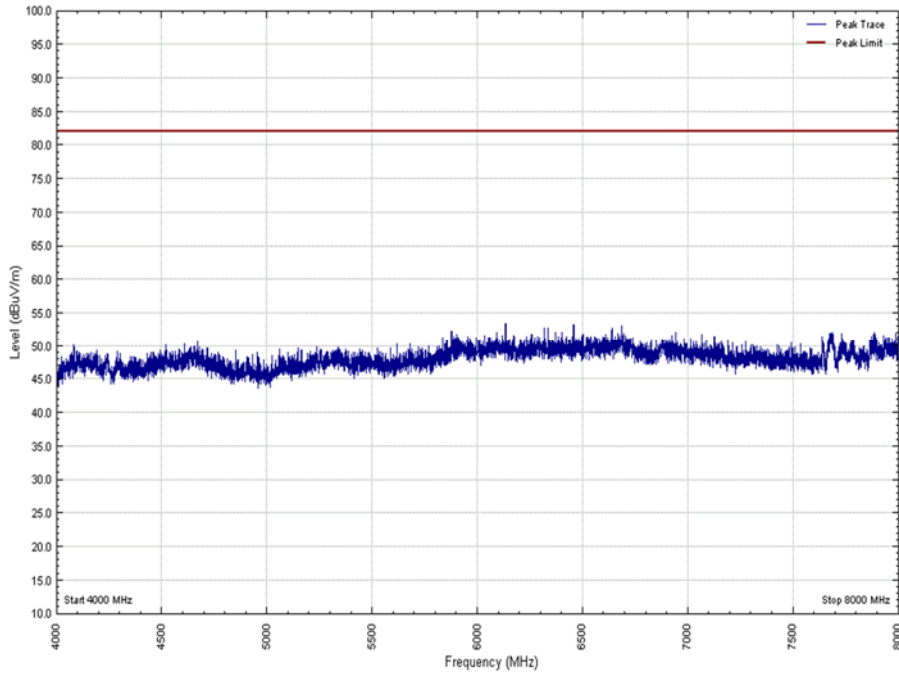
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



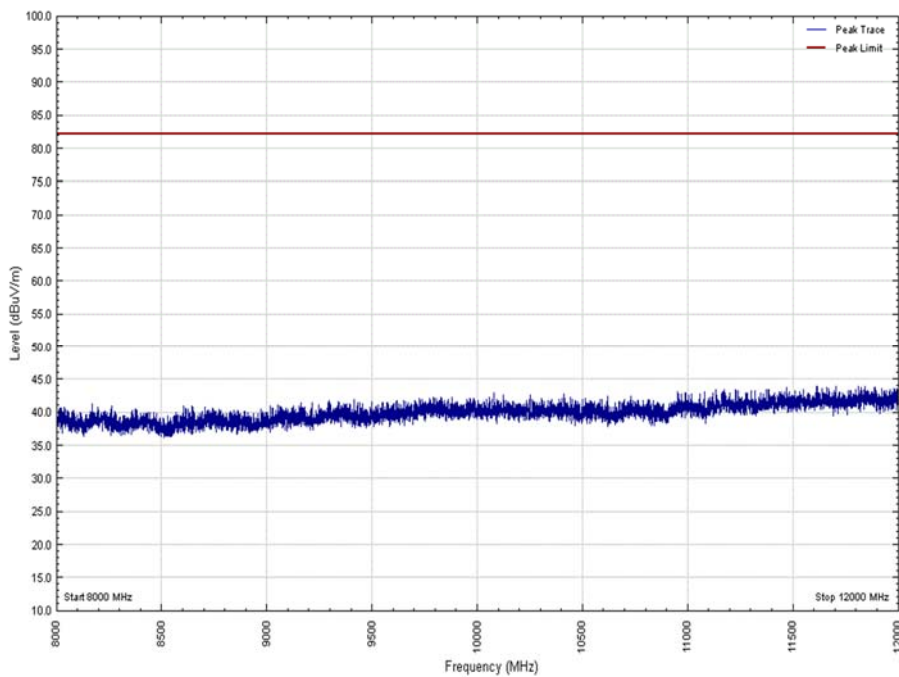


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



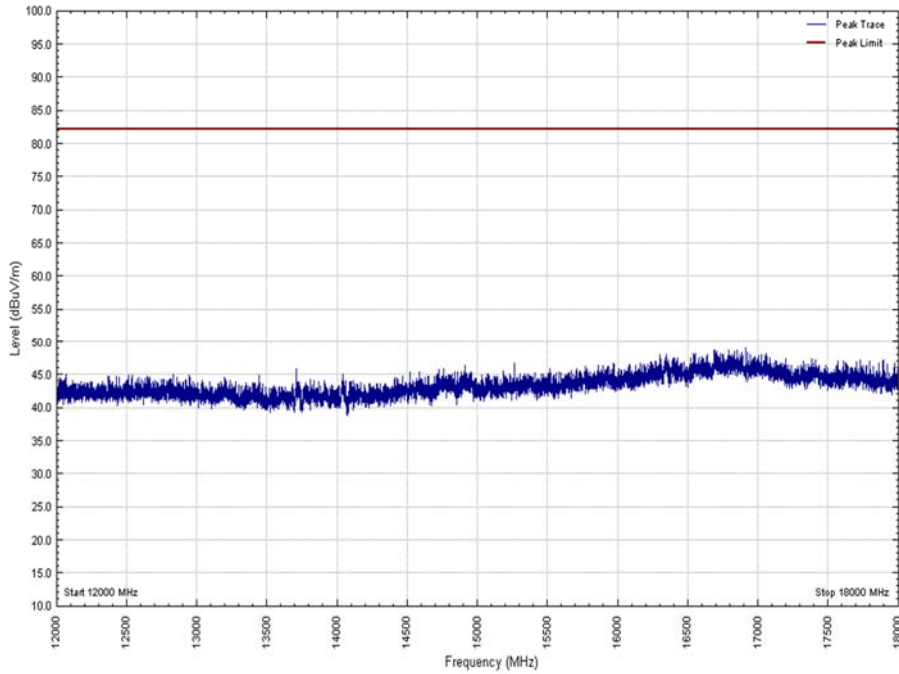
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Horizontal



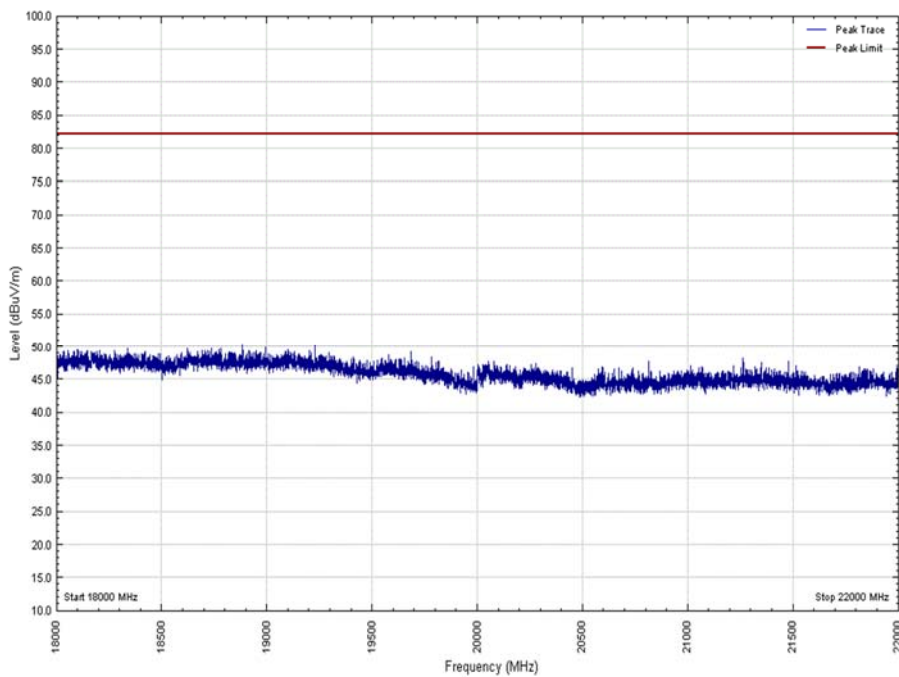


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Horizontal



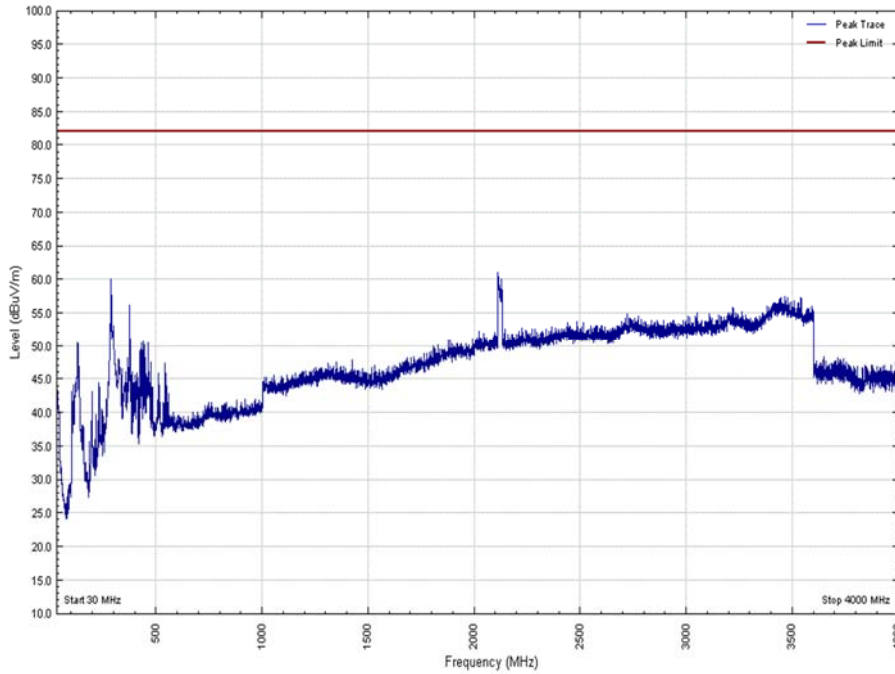
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



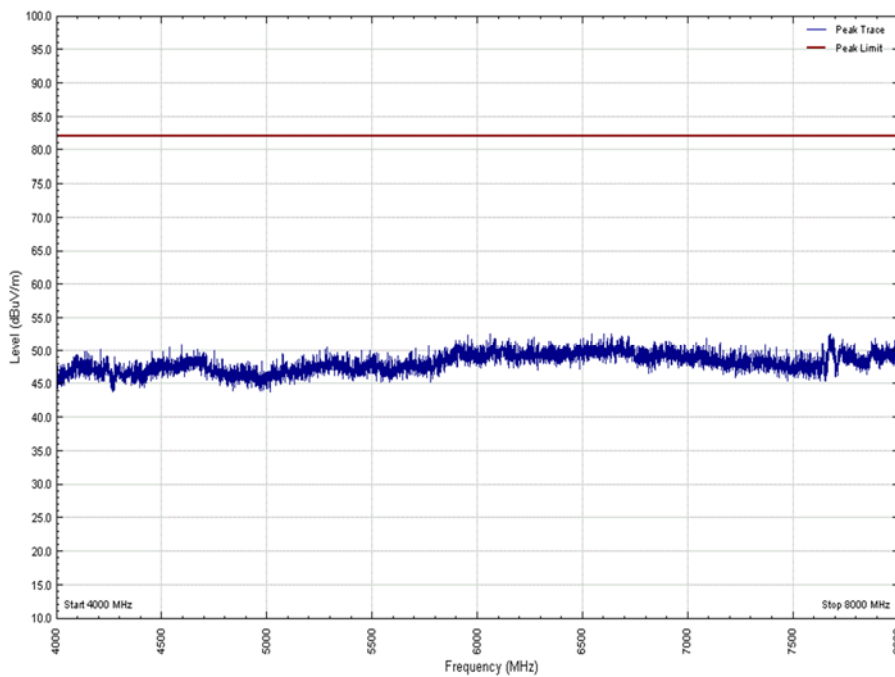


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



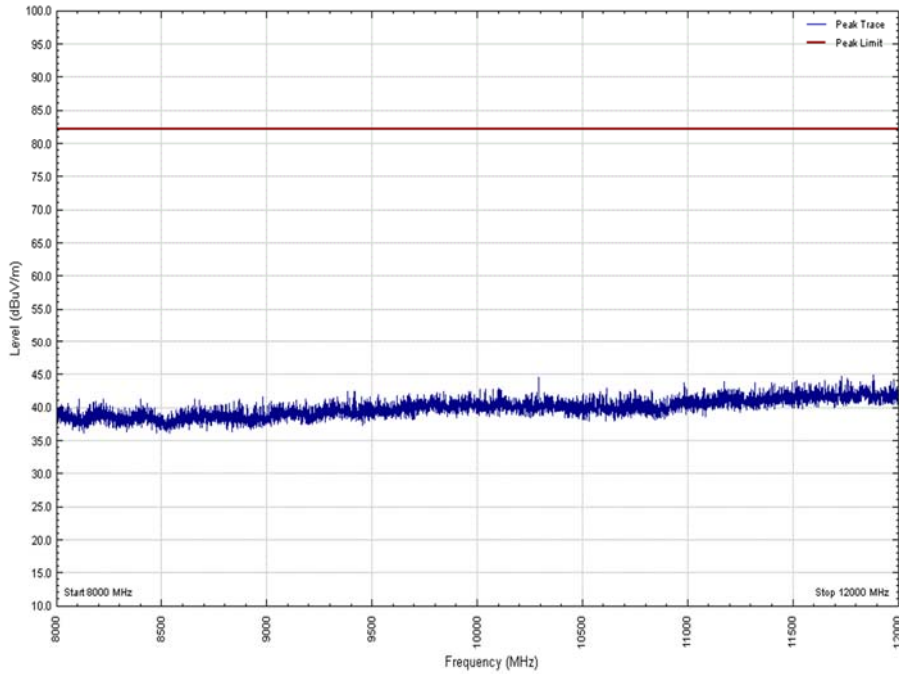
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



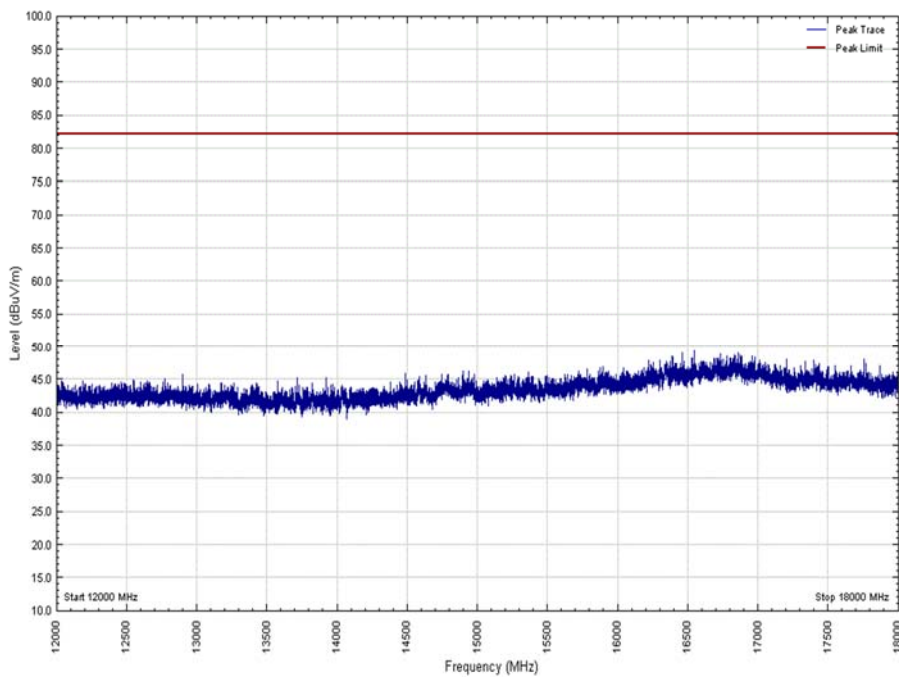


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000
to 12000 MHz - Horizontal



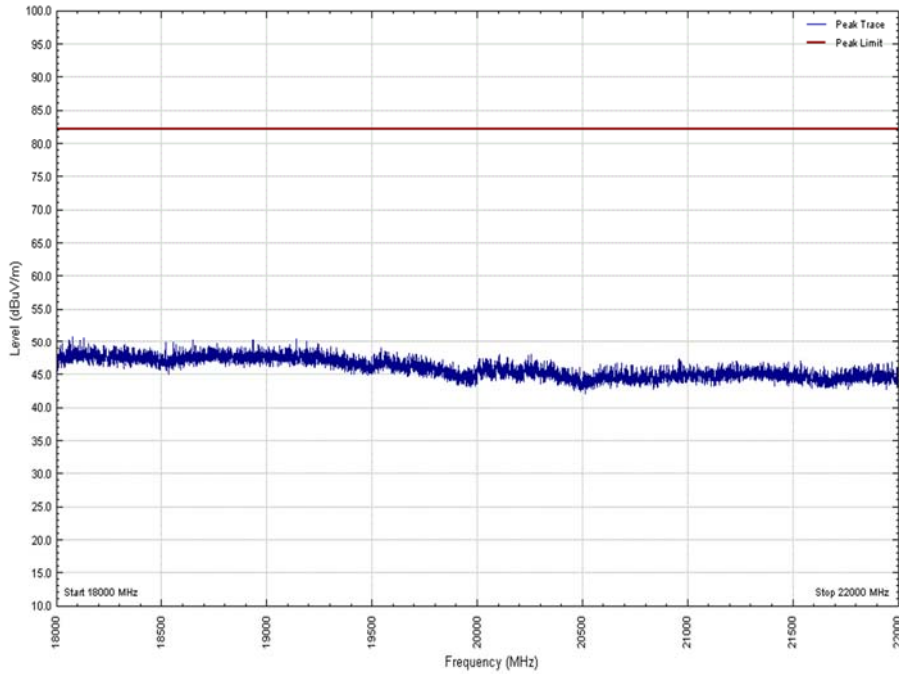
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000
to 18000 MHz - Horizontal



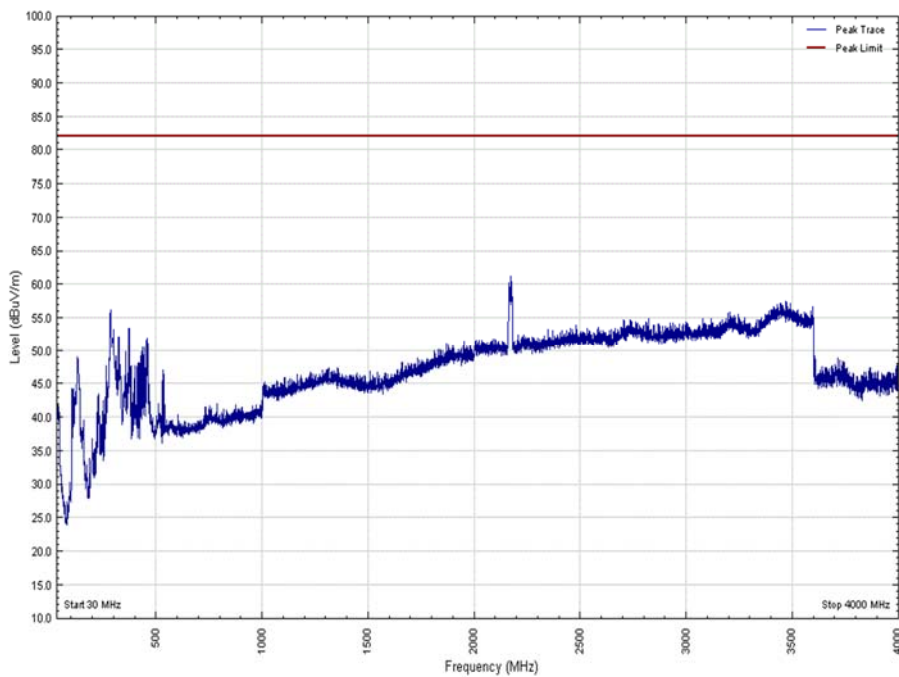


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



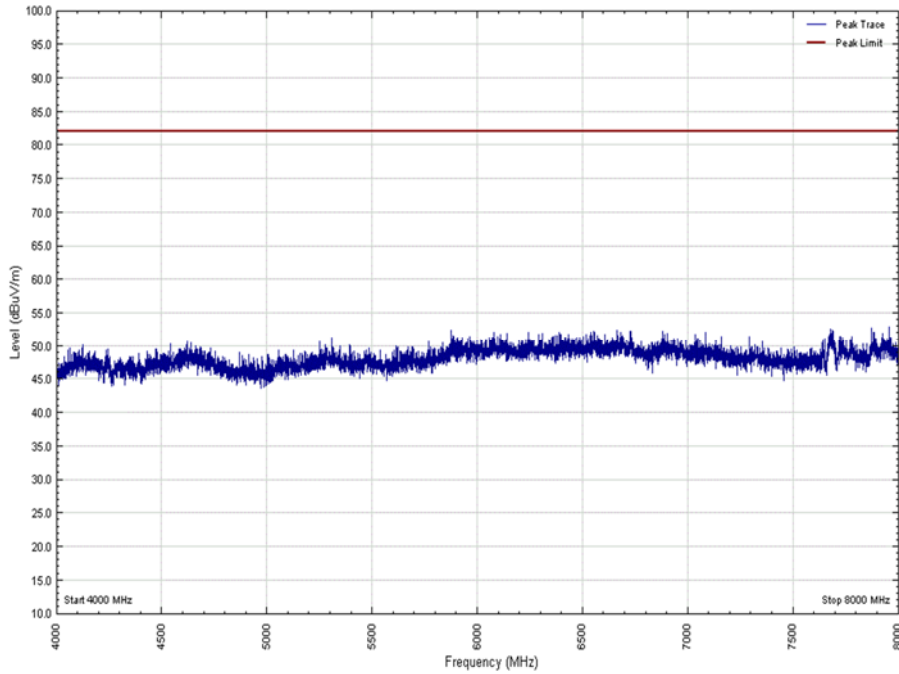
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Horizontal



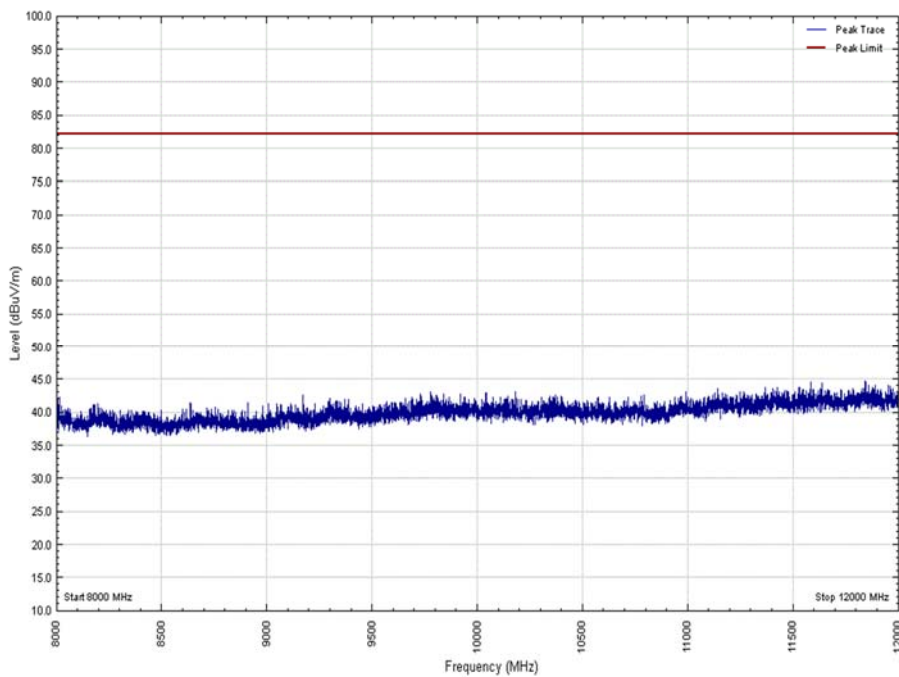


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Horizontal



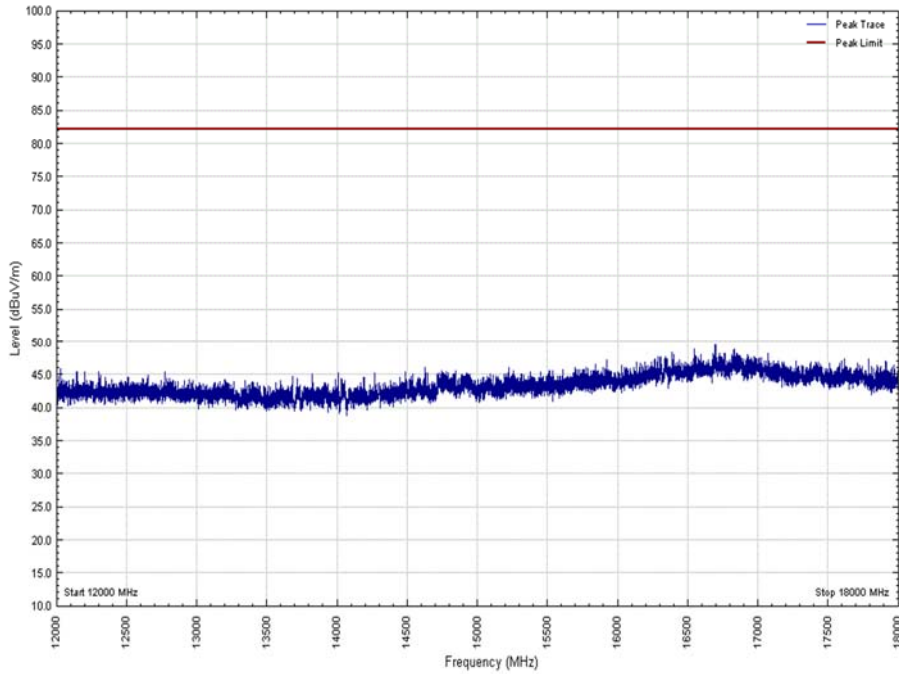
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Horizontal



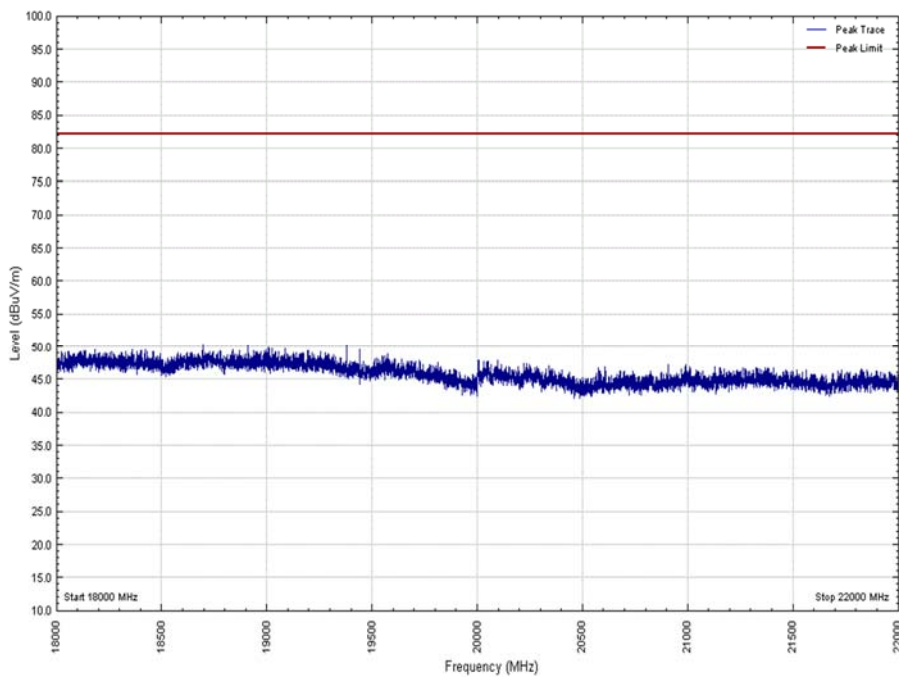


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Horizontal



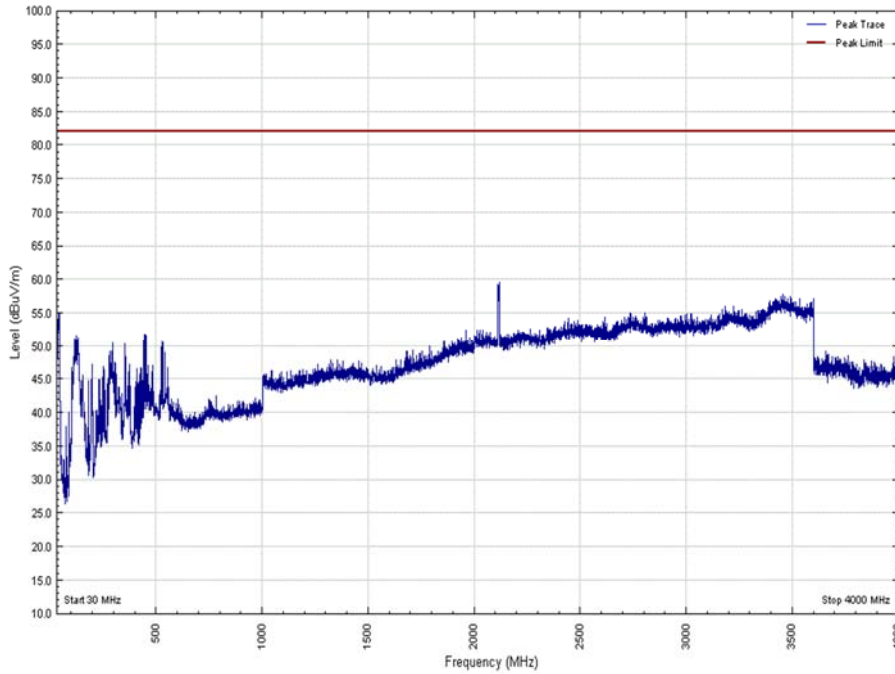
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Horizontal



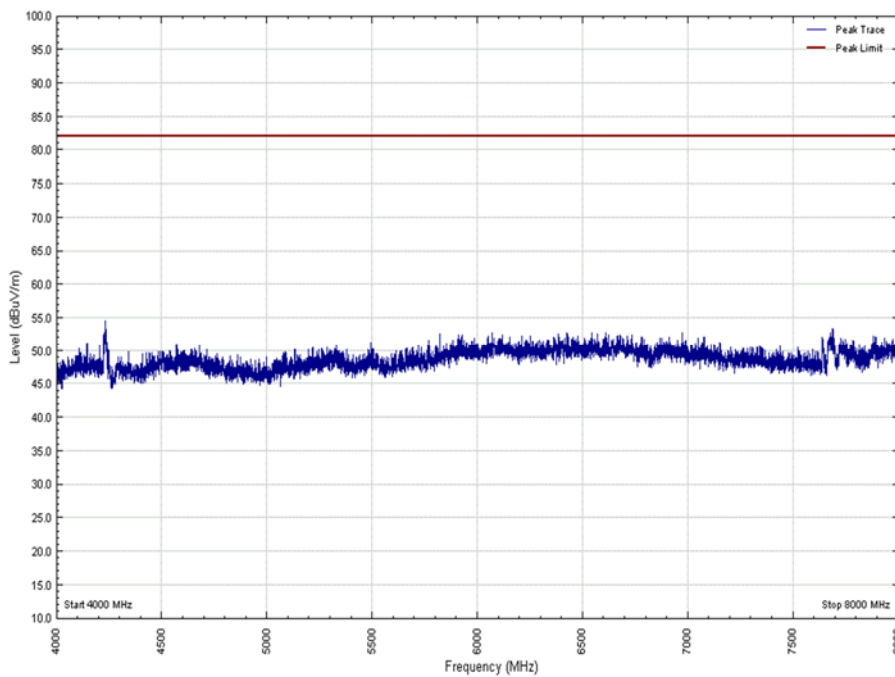


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



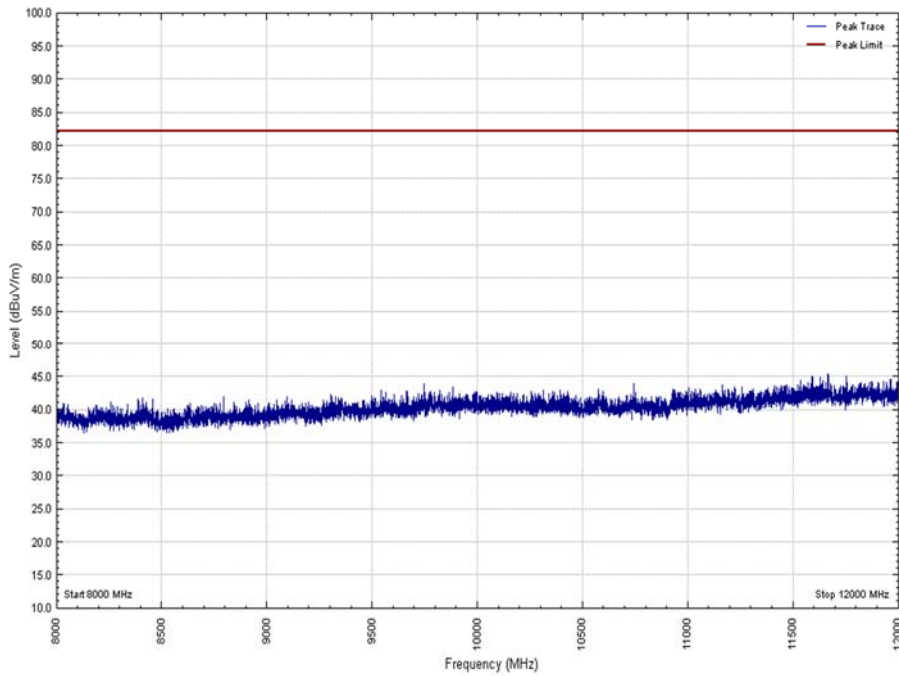
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



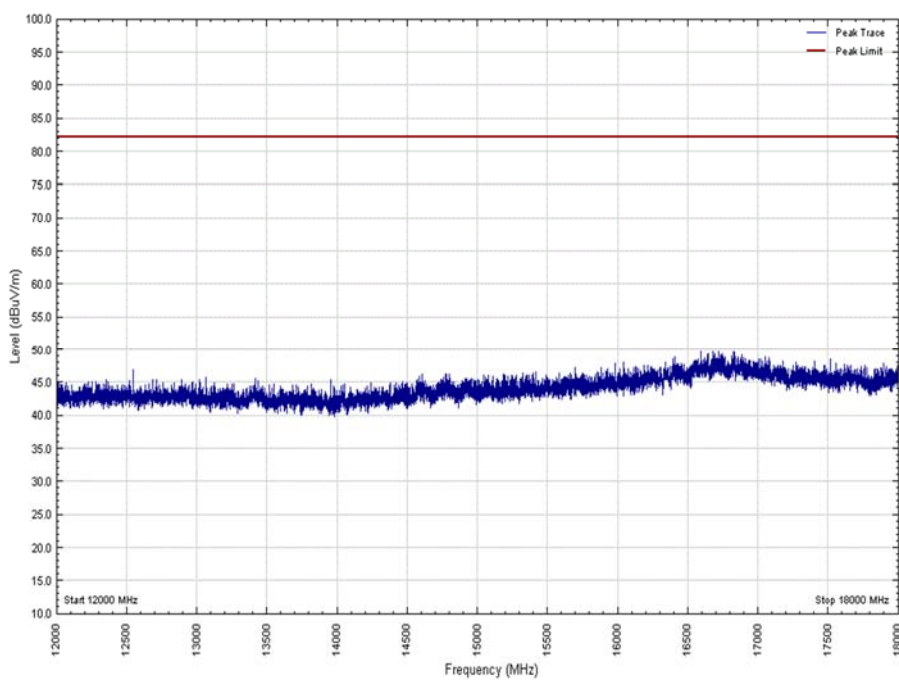


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000 to 12000 MHz - Vertical



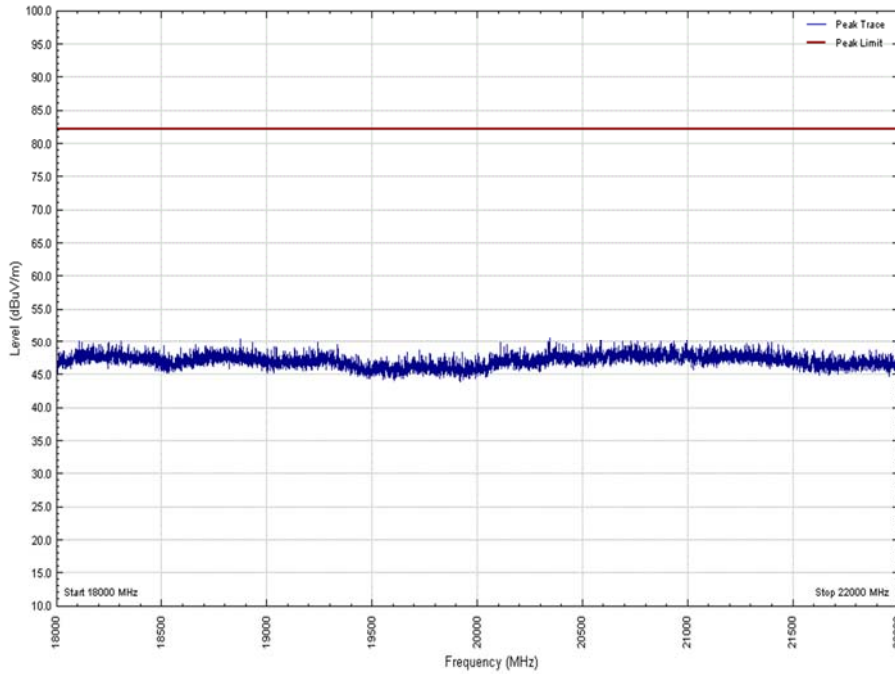
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000 to 18000 MHz - Vertical



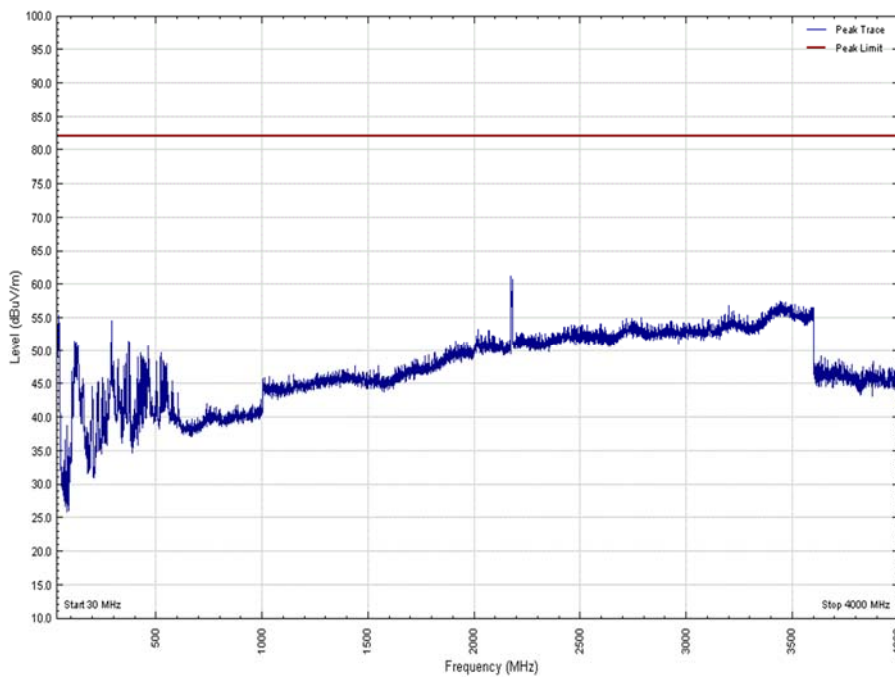


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



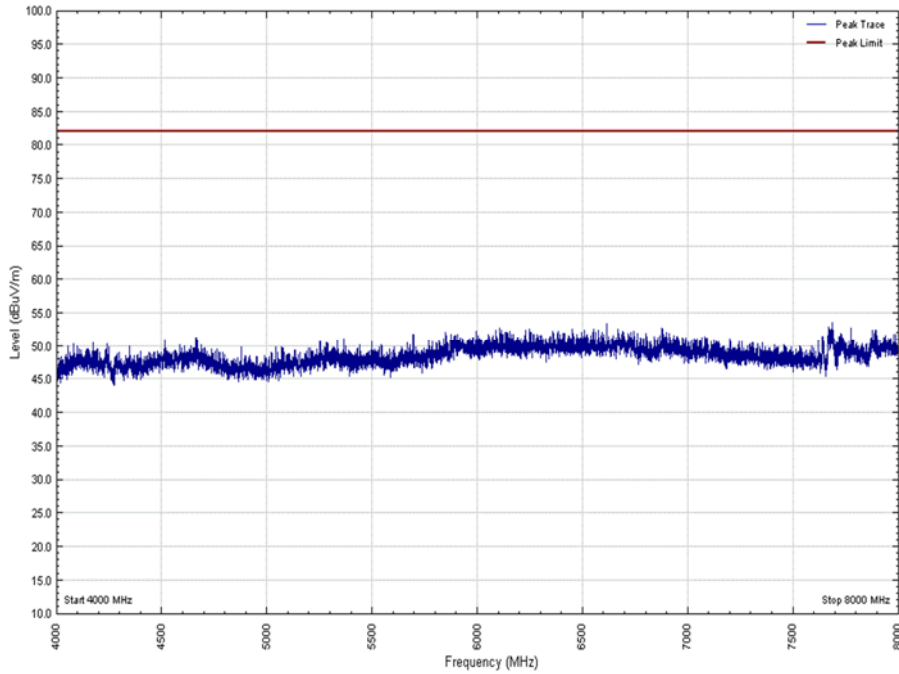
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



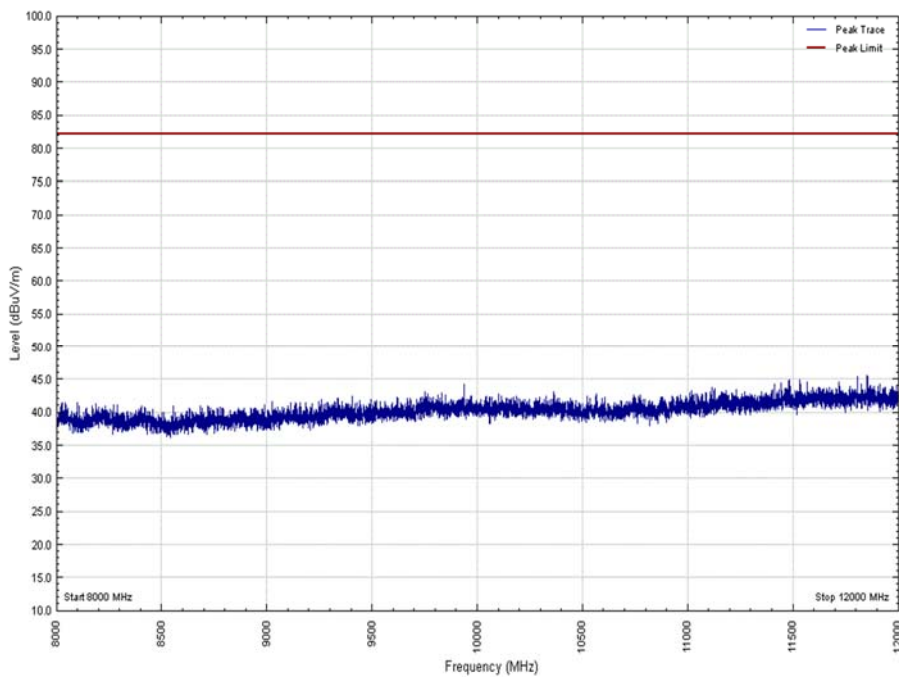


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



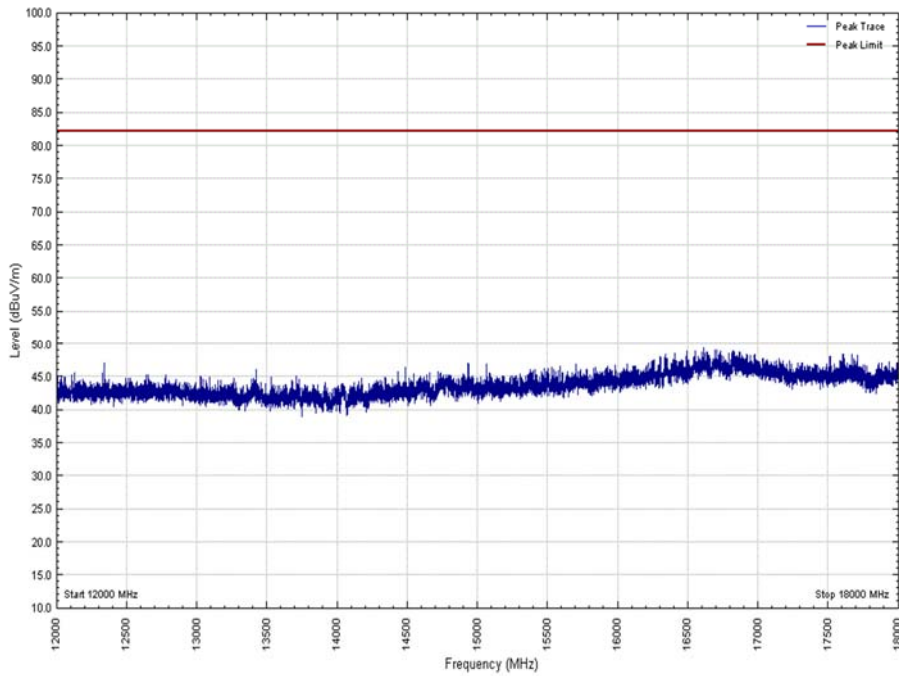
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Vertical



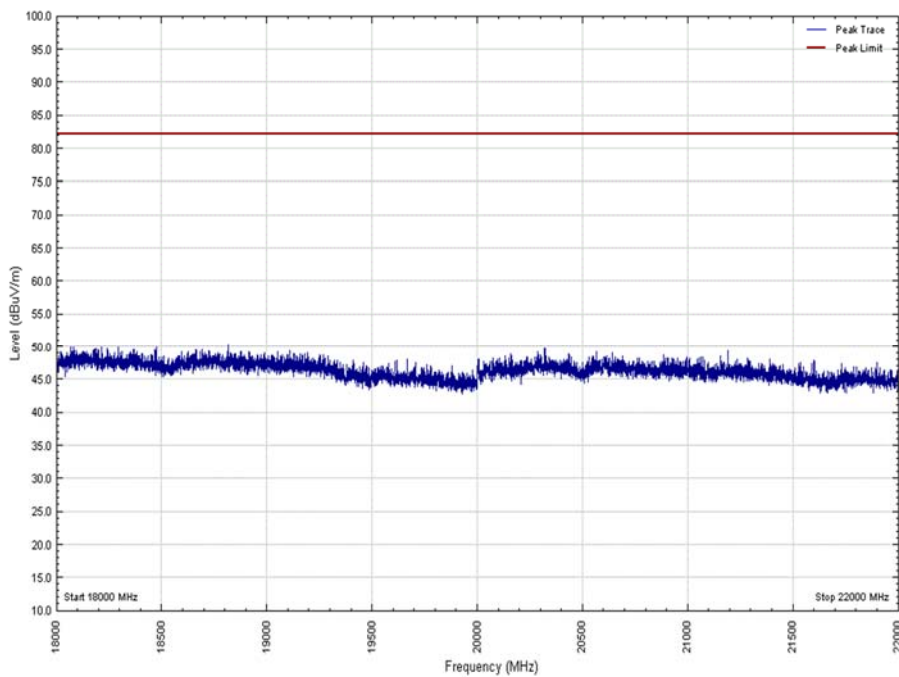


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Vertical



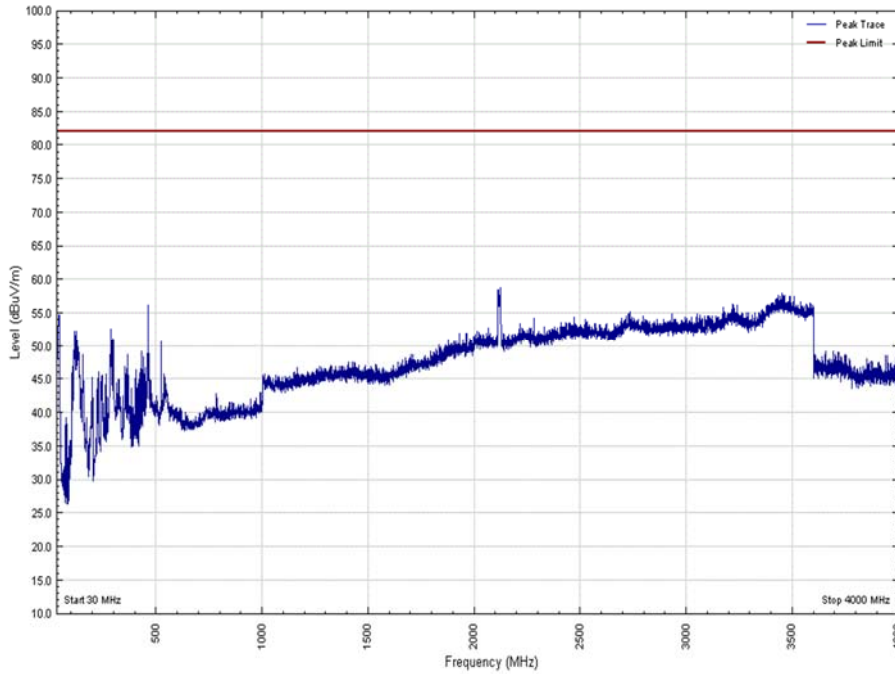
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:10.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



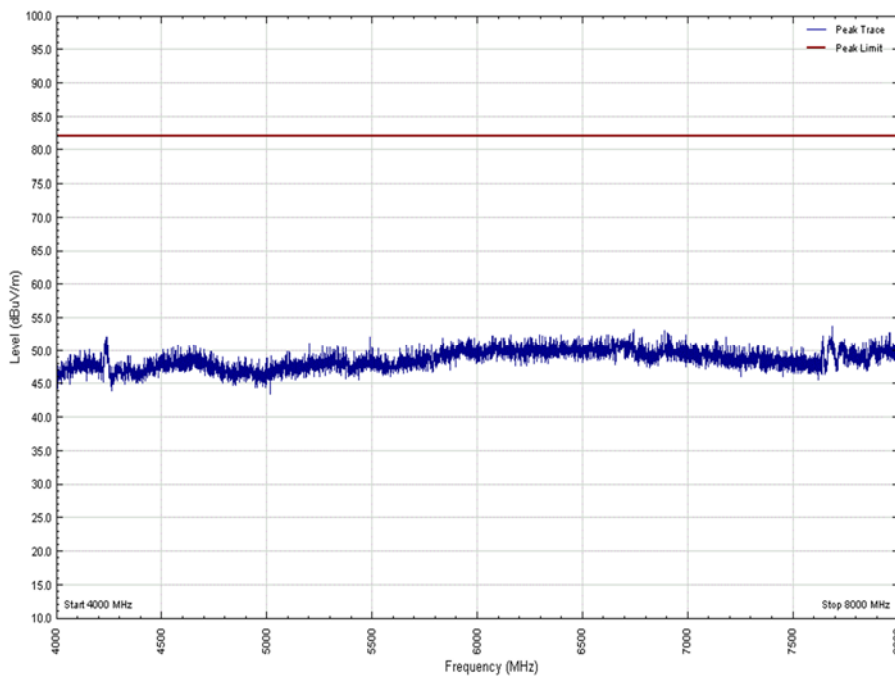


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



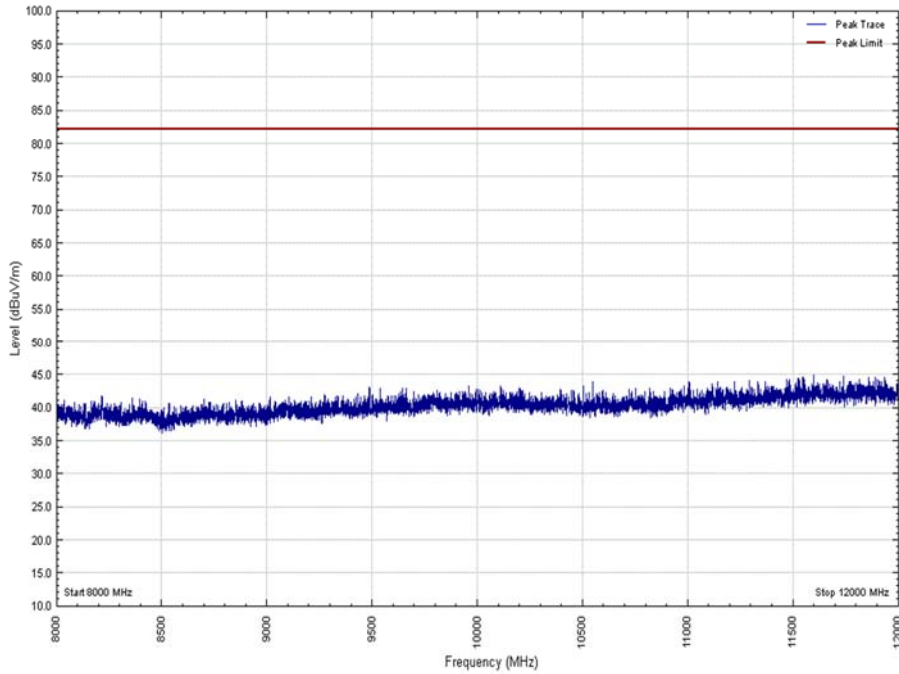
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



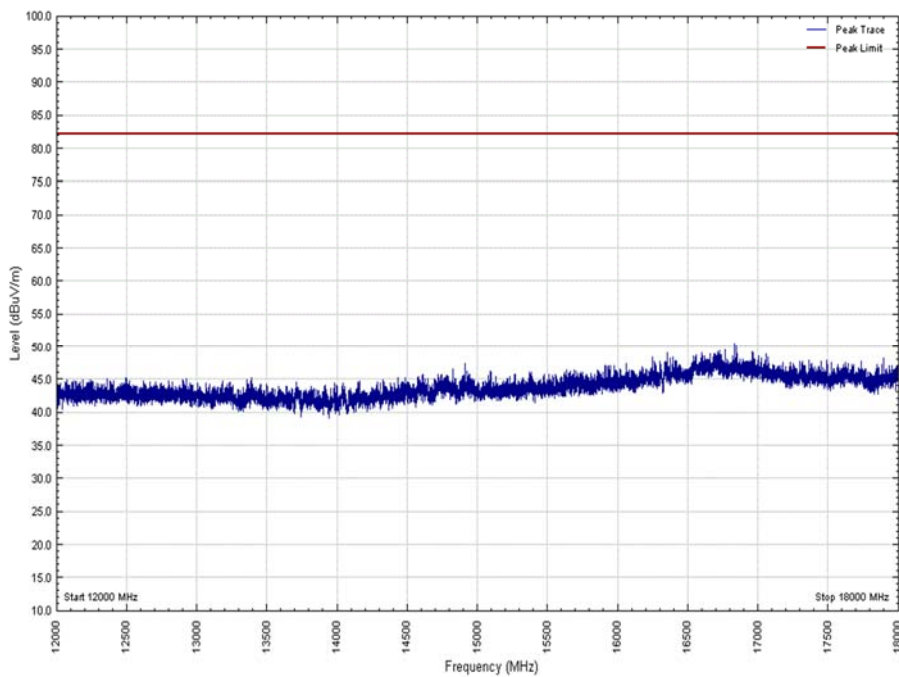


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000 to 12000 MHz - Vertical



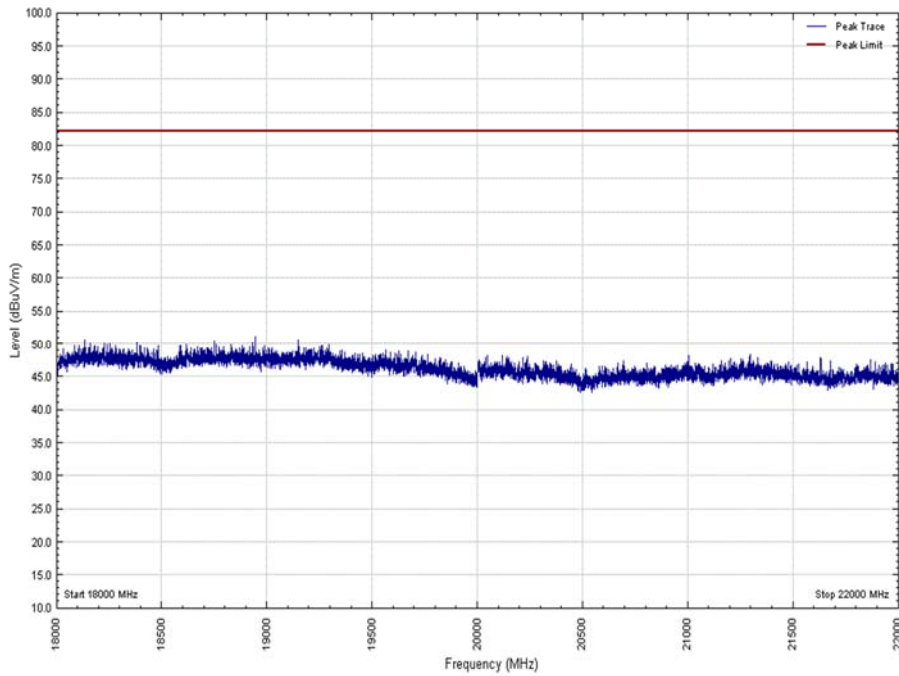
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000 to 18000 MHz - Vertical



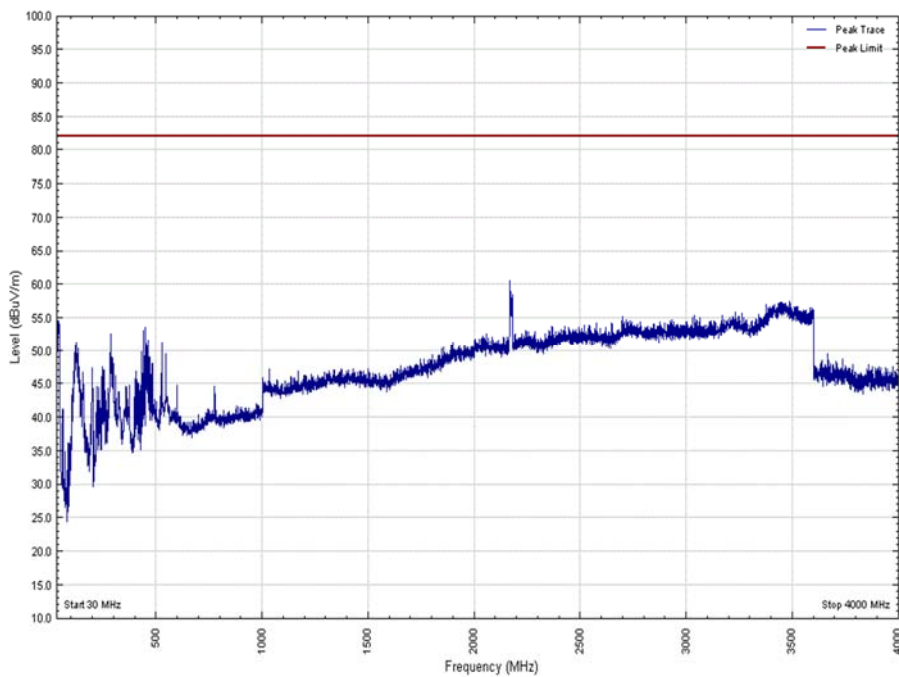


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



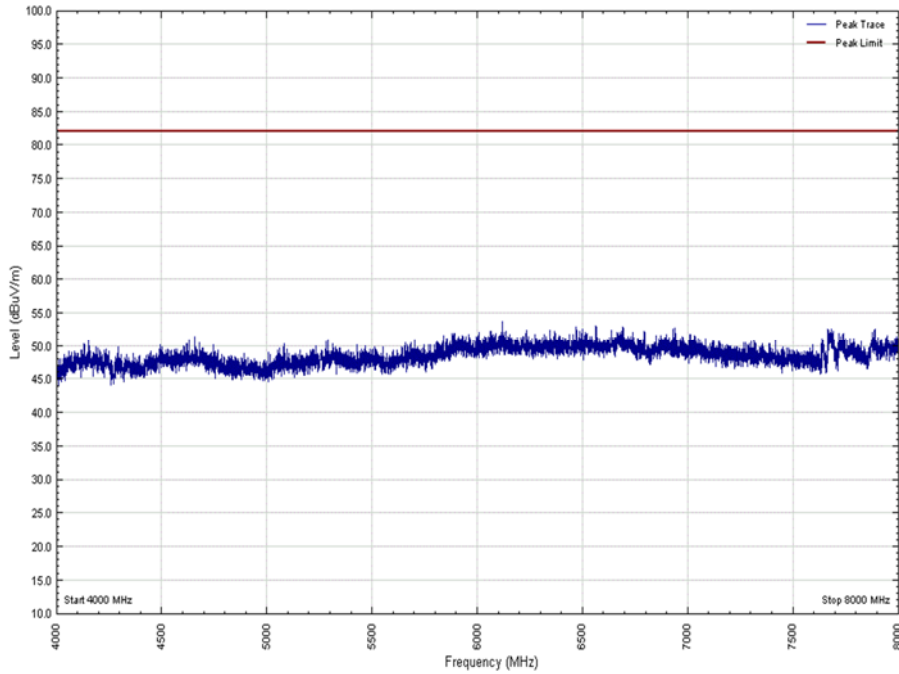
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



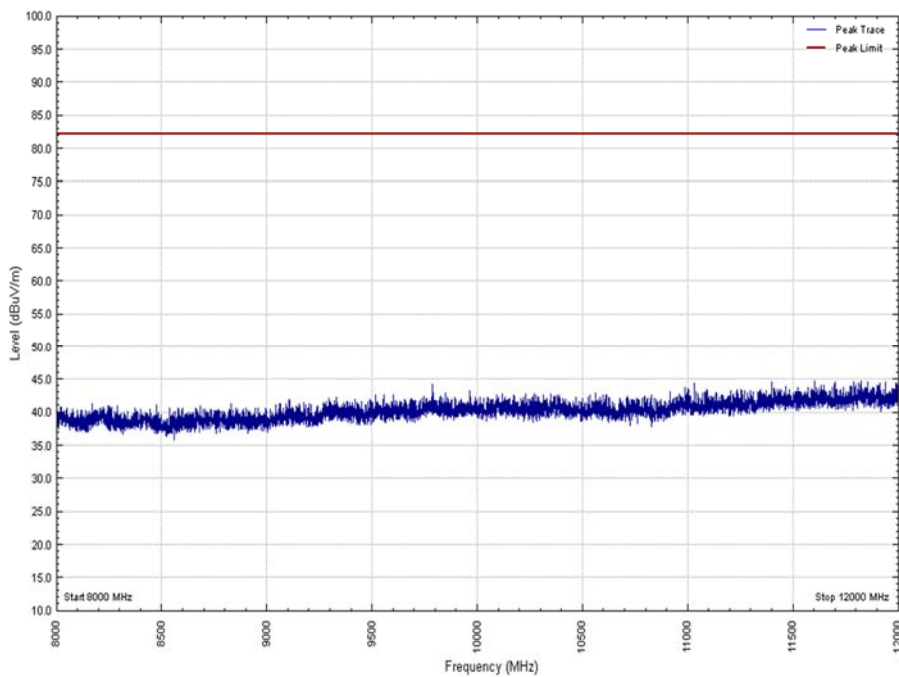


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



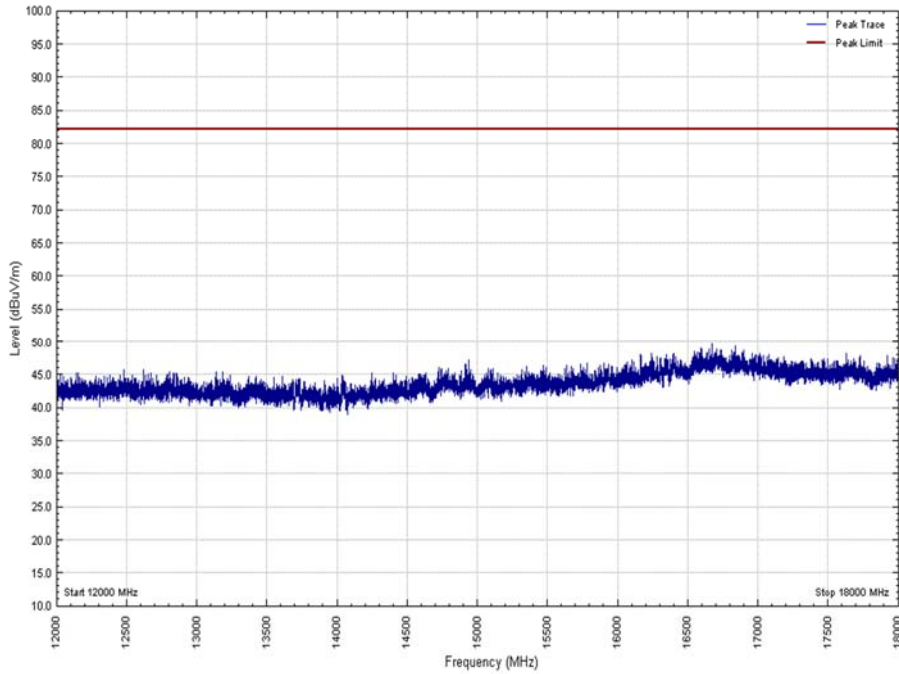
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Vertical



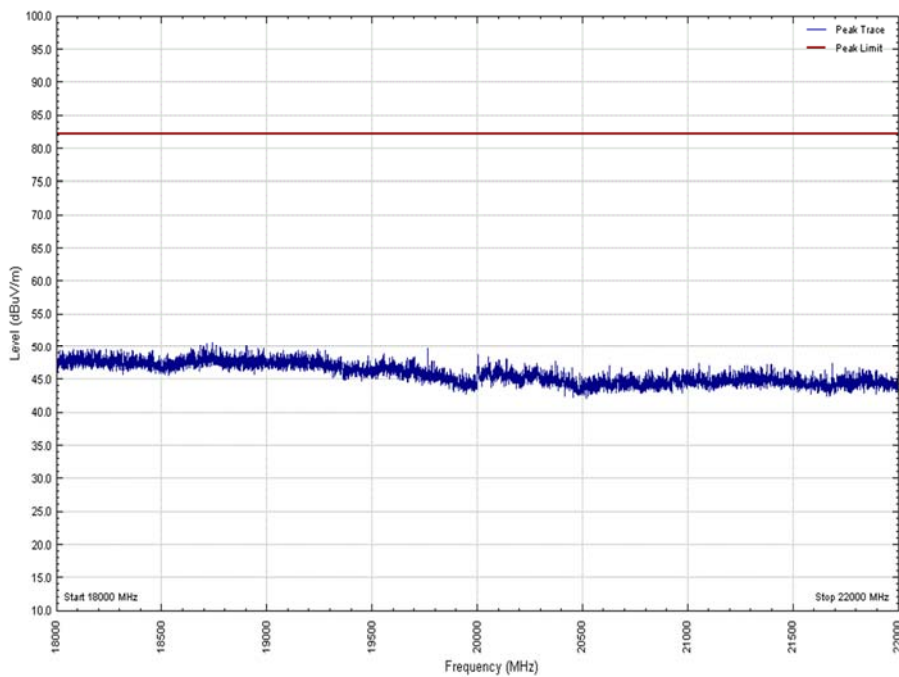


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Vertical



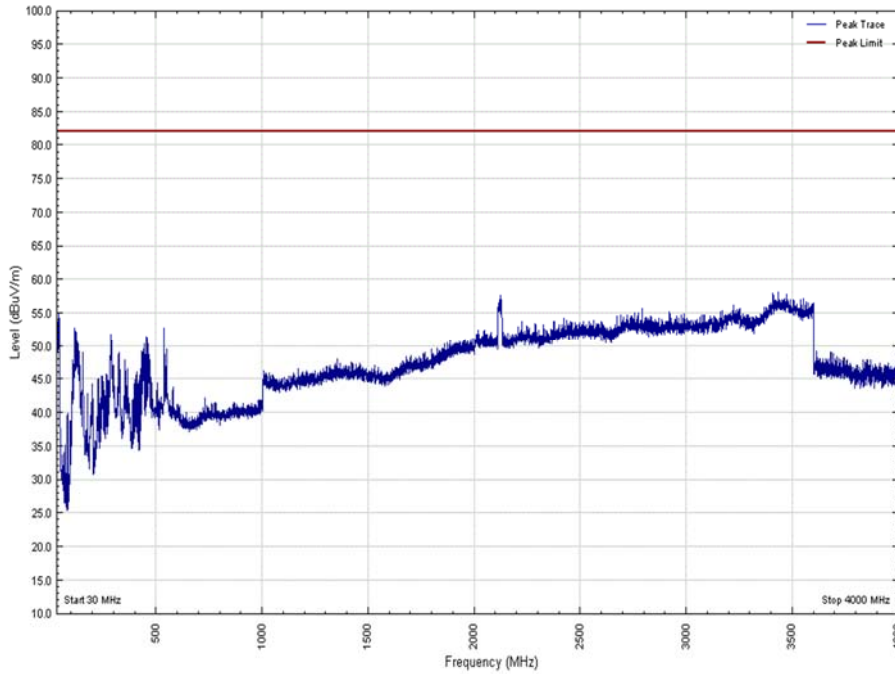
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:15.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



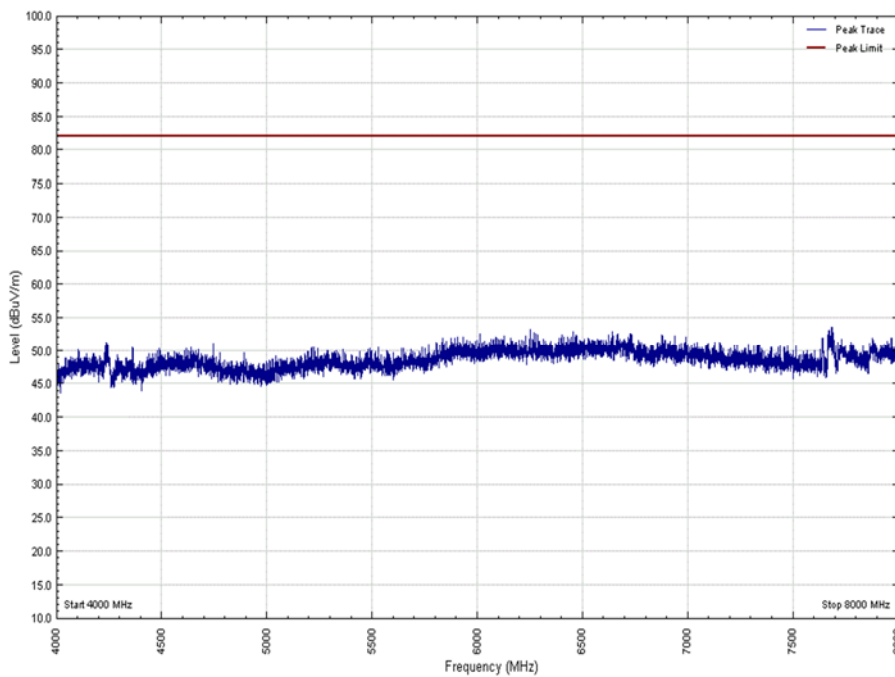


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



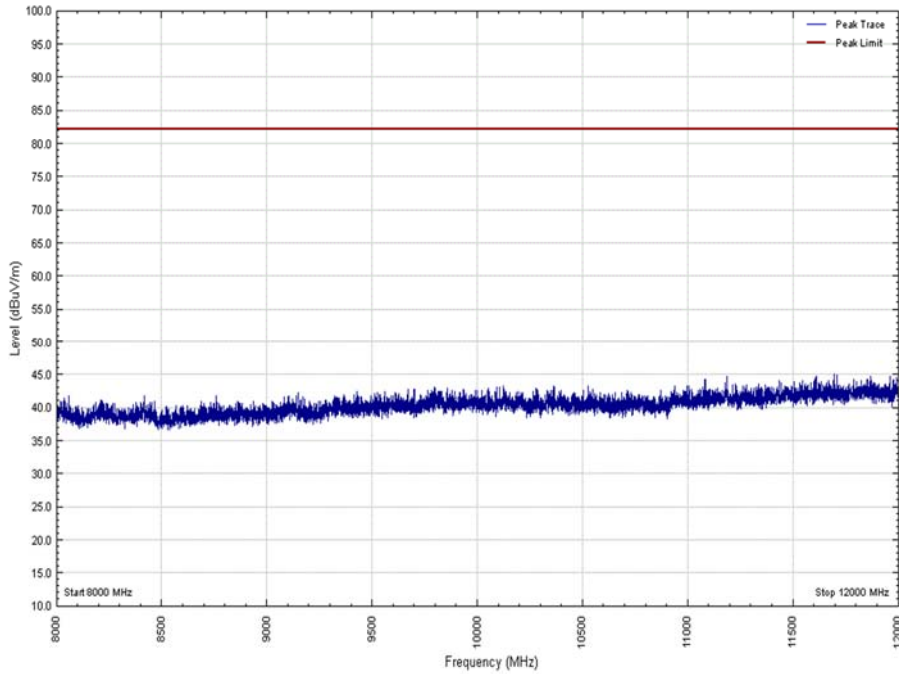
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



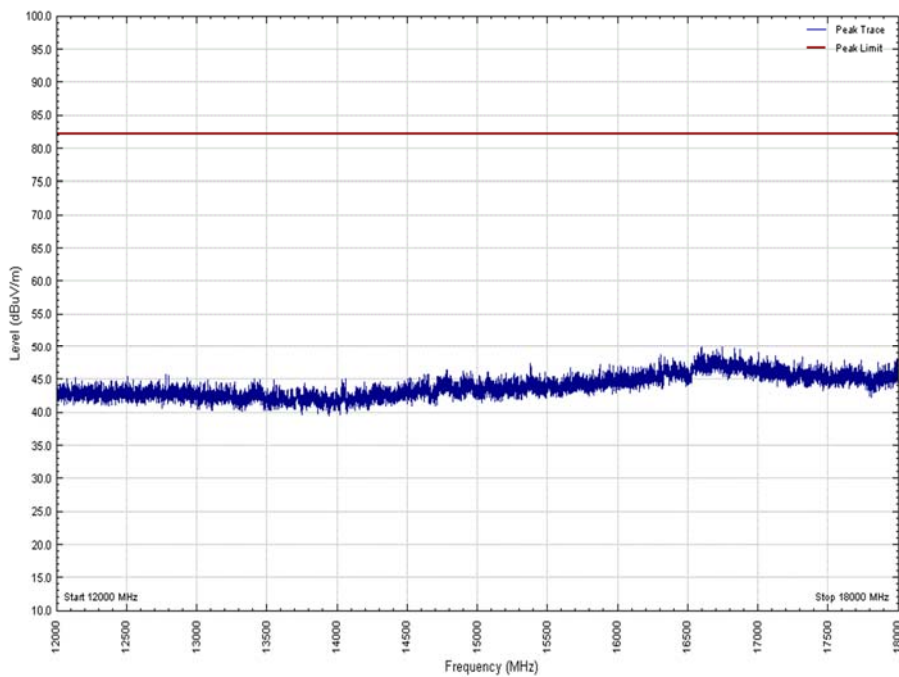


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 3 - Range 8000
to 12000 MHz - Vertical



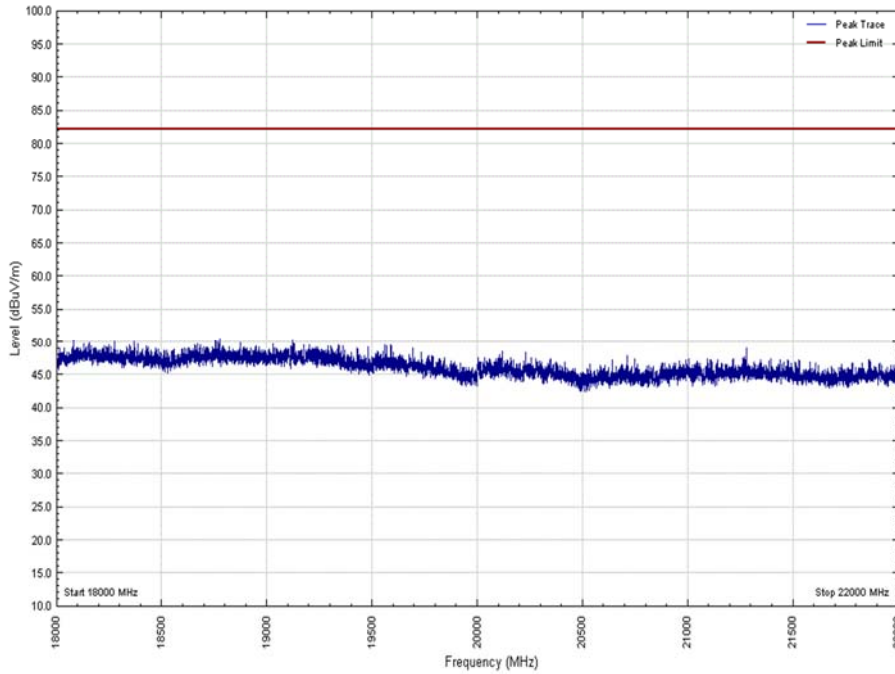
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 4 - Range 12000
to 18000 MHz - Vertical



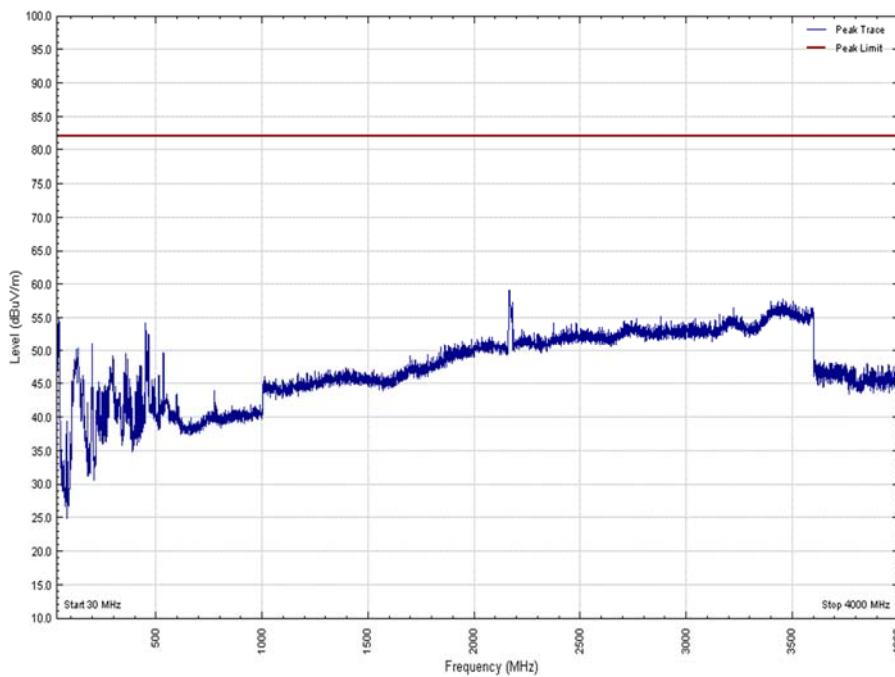


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position BRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



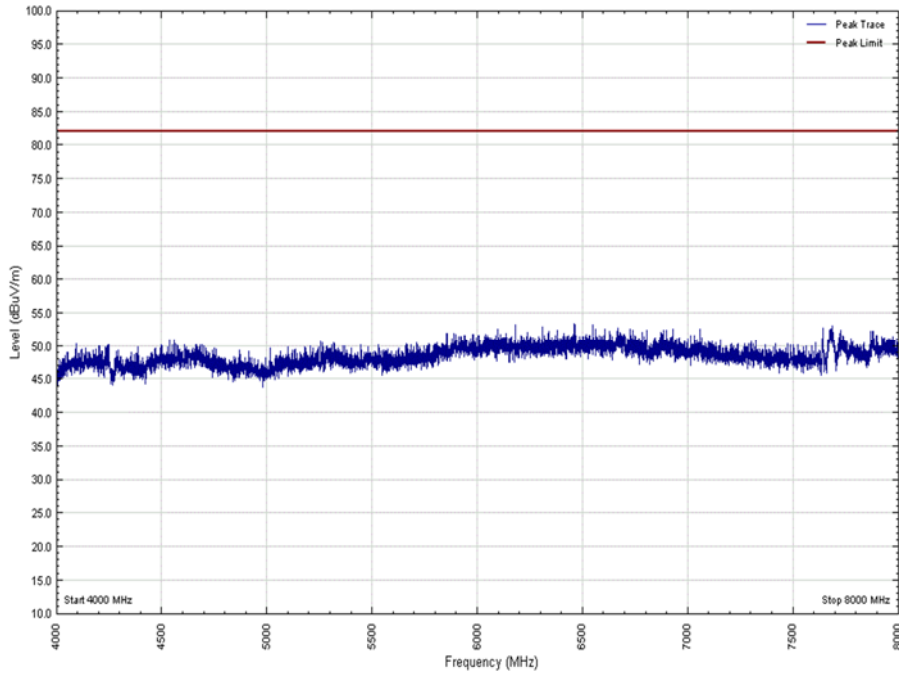
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 1 - Range 30 to
4000 MHz - Vertical



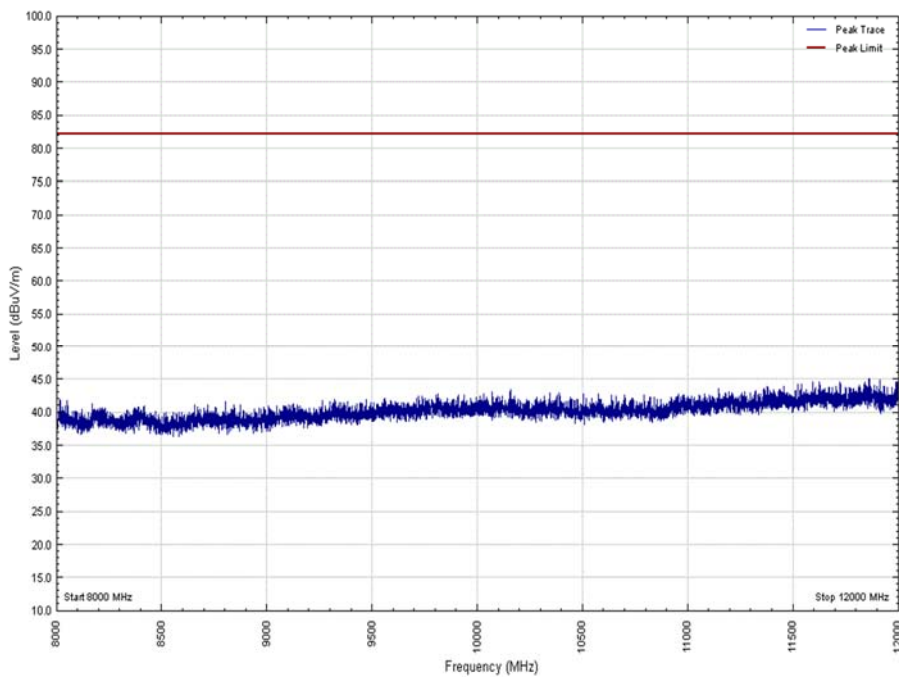


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 2 - Range 4000
to 8000 MHz - Vertical



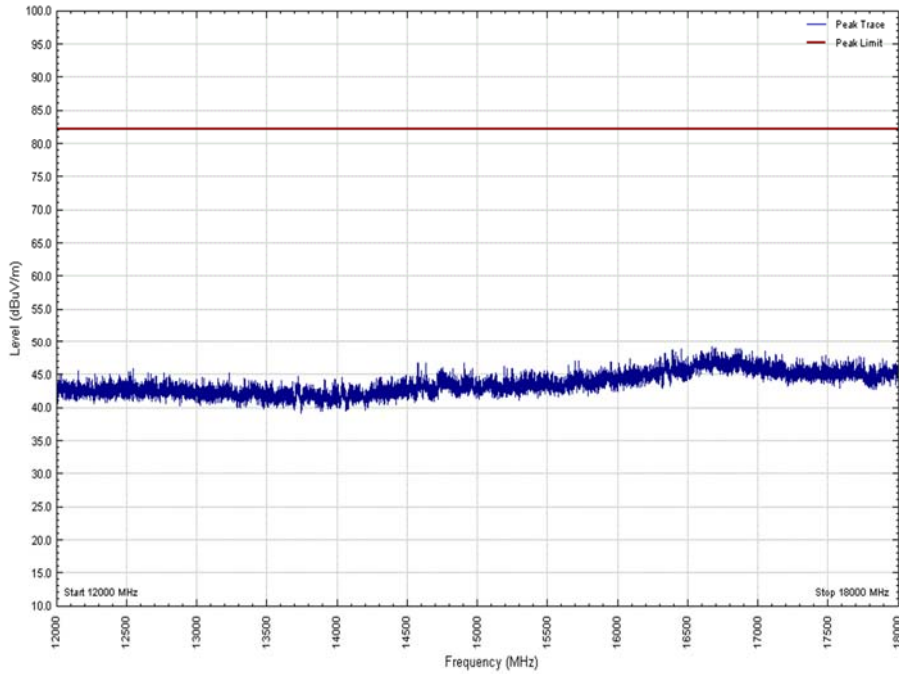
Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 3 - Range 8000
to 12000 MHz - Vertical



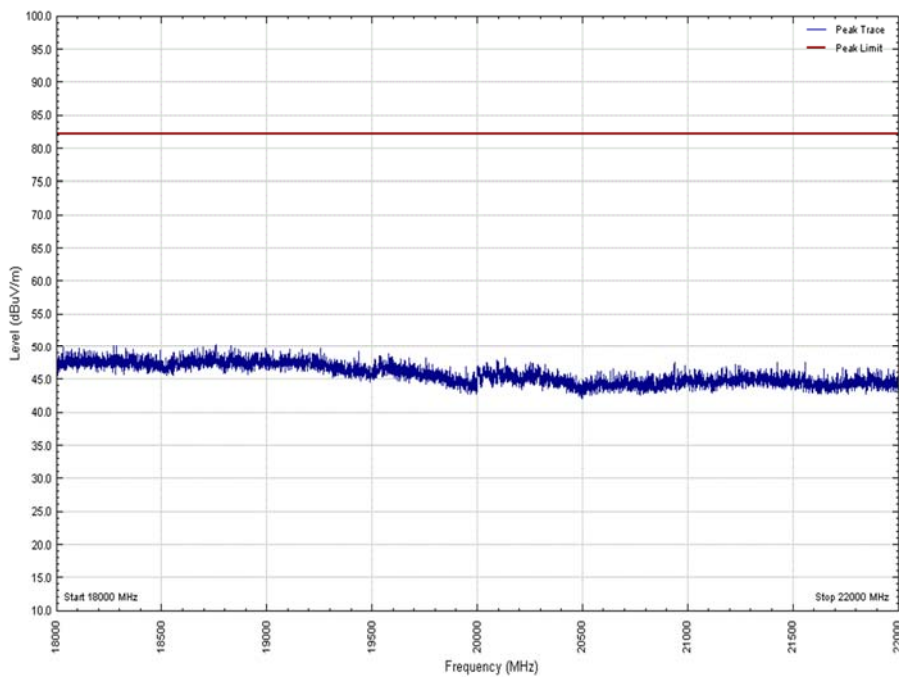


Product Service

Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 4 - Range 12000
to 18000 MHz - Vertical



Antenna A - E-UTRA / NB-IoT GB Modulation E:64QAM / N:QPSK - E-UTRA / NB-IoT GB
Carrier Bandwidth E:20.0 MHz / N:180 kHz - Channel Position TRFBW - Band 5 - Range 18000
to 22000 MHz - Vertical



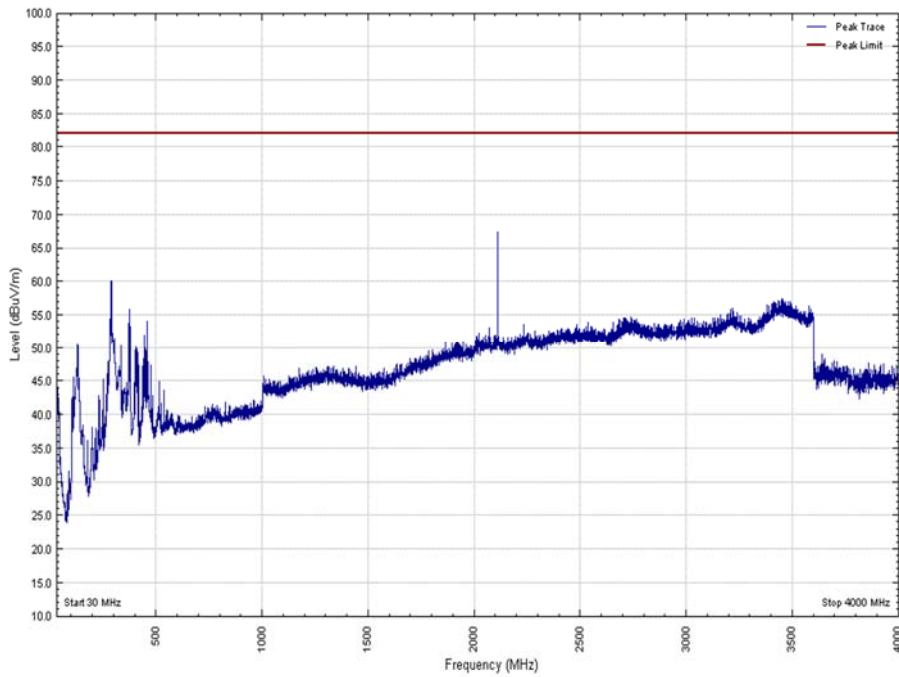


Product Service

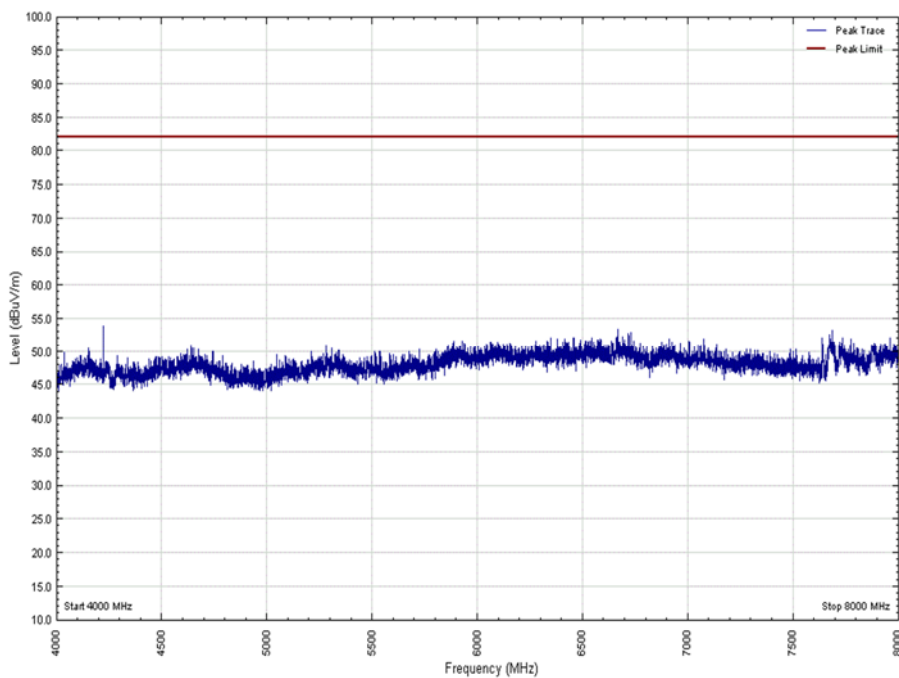
Configuration B

Maximum Output Power 37 dBm

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 1 - Range 30 to 4000 MHz - Horizontal



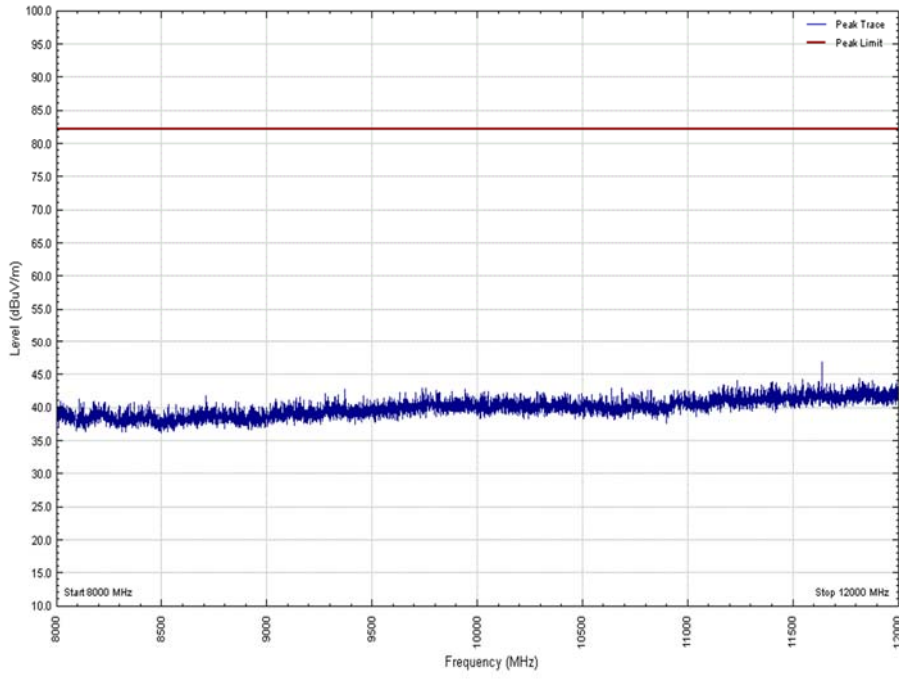
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 2 - Range 4000 to 8000 MHz - Horizontal



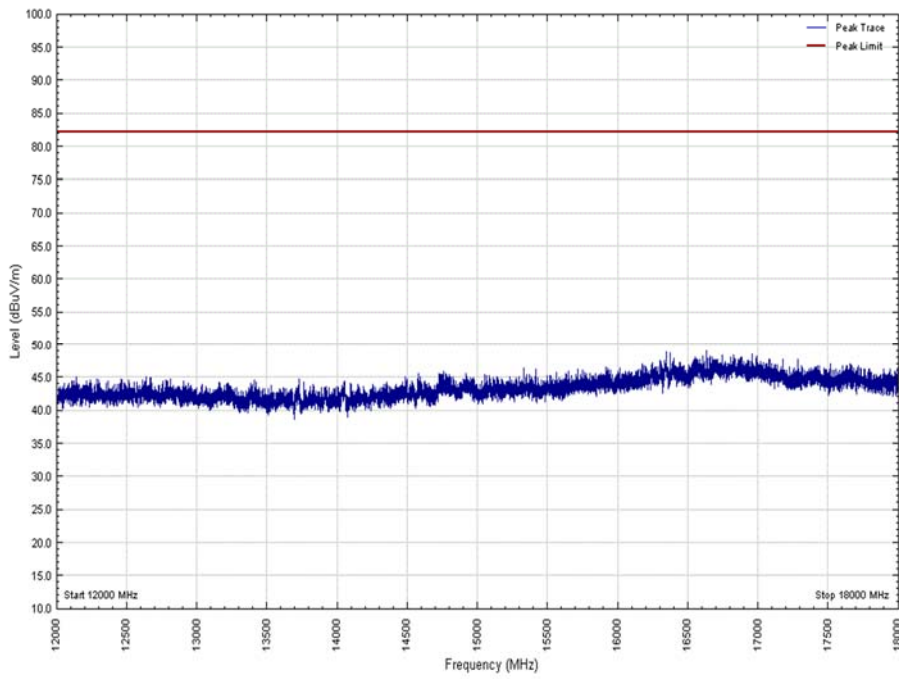


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 3 - Range 8000 to 12000 MHz - Horizontal



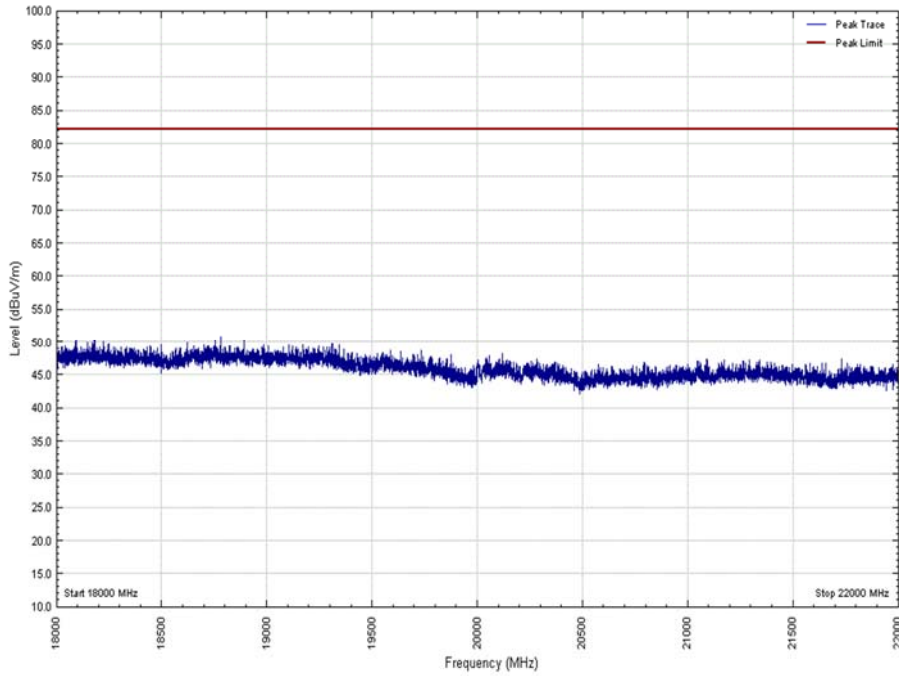
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 4 - Range 12000 to 18000 MHz - Horizontal



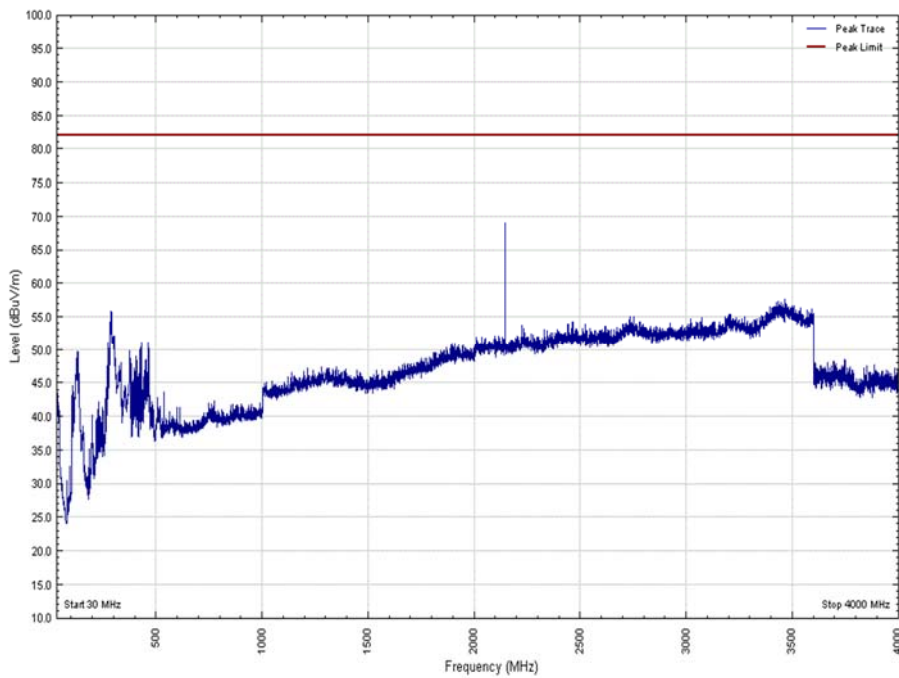


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 5 - Range 18000 to 22000 MHz - Horizontal



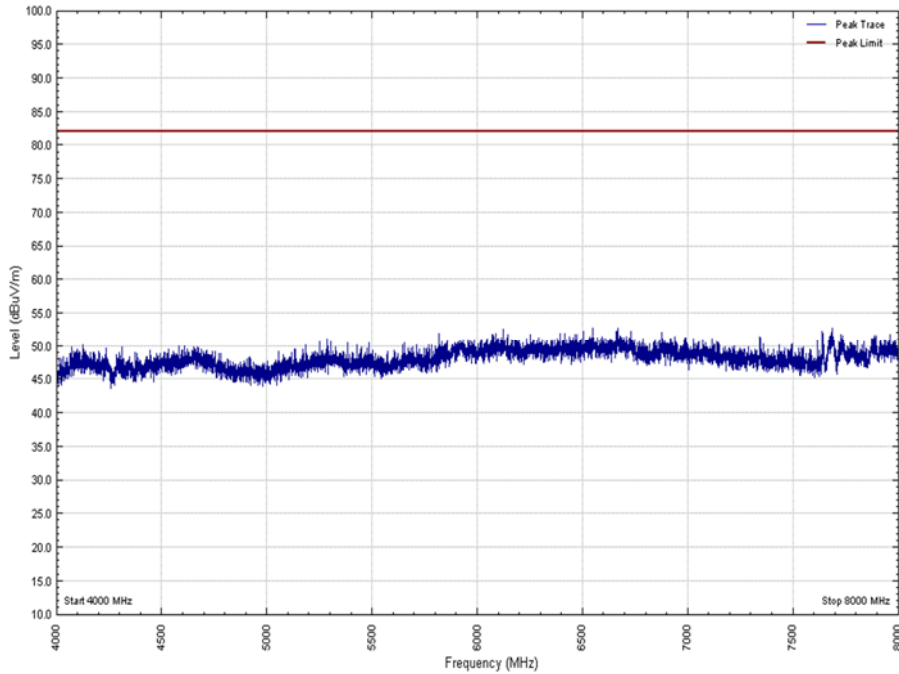
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 1 - Range 30 to 4000 MHz - Horizontal



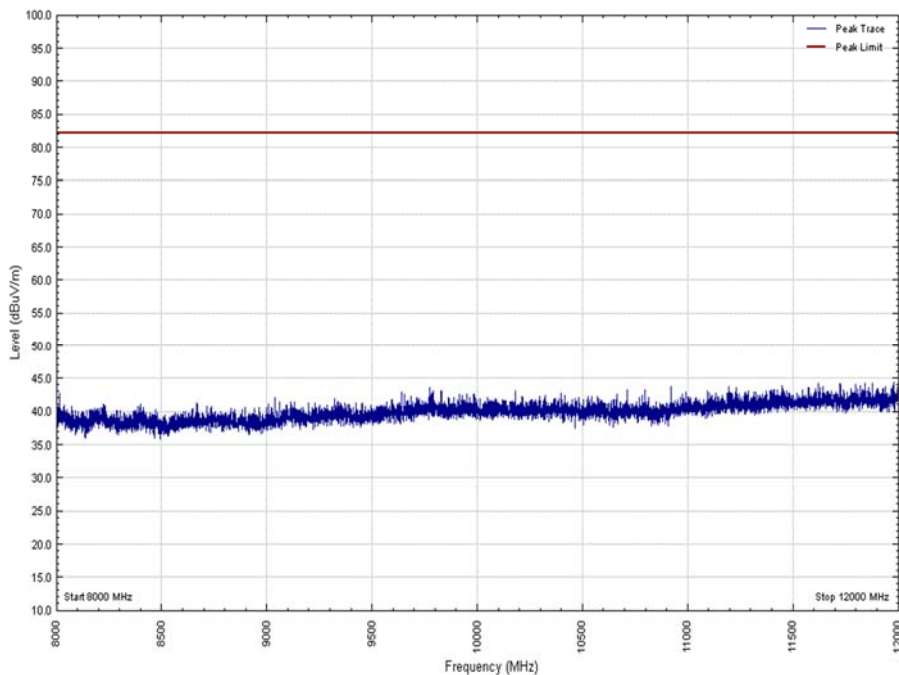


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 2 - Range 4000 to 8000 MHz - Horizontal



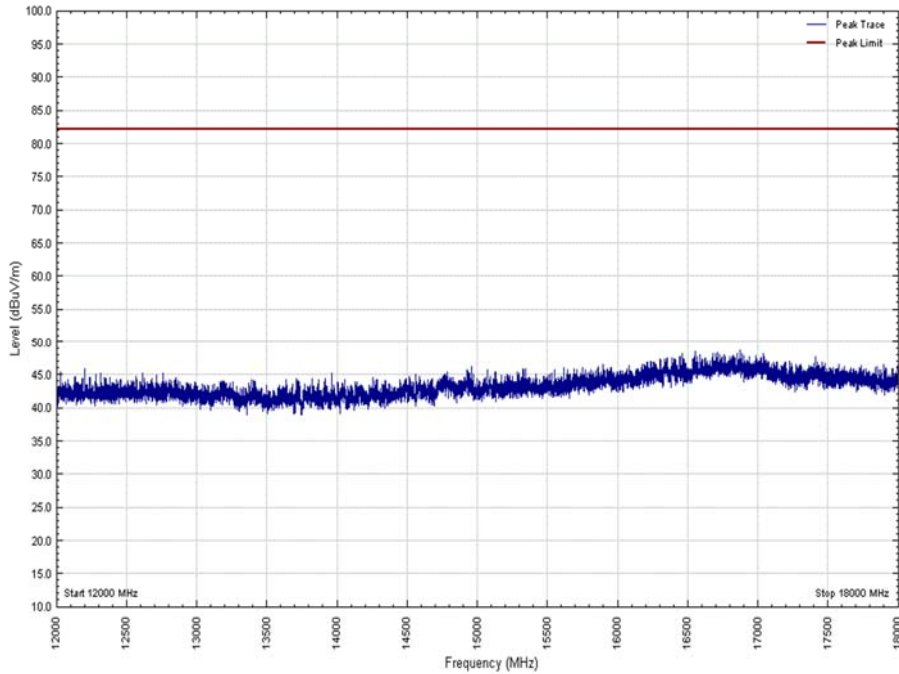
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 3 - Range 8000 to 12000 MHz - Horizontal



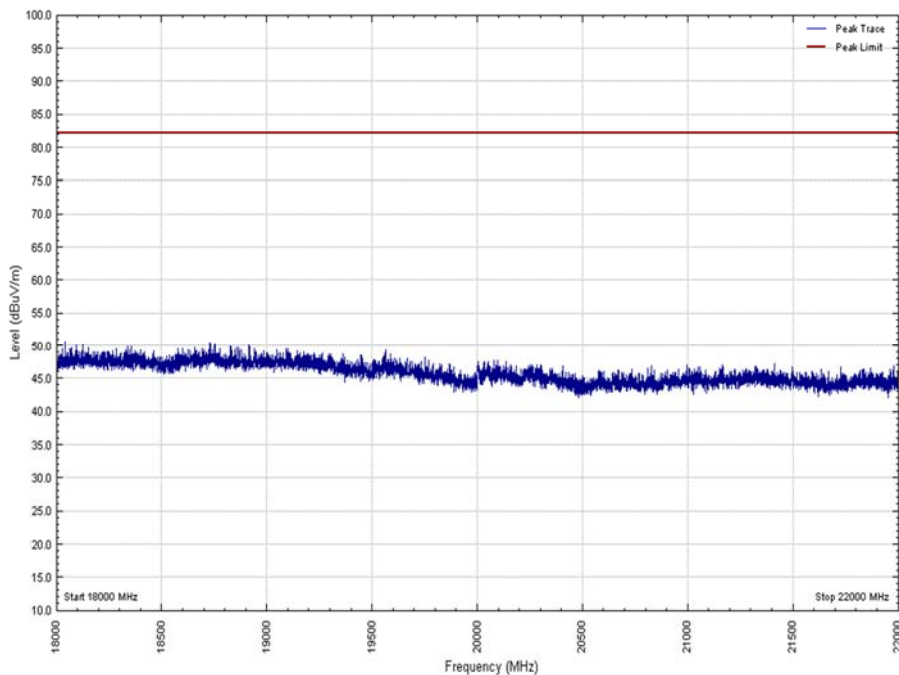


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 4 - Range 12000 to 18000 MHz - Horizontal



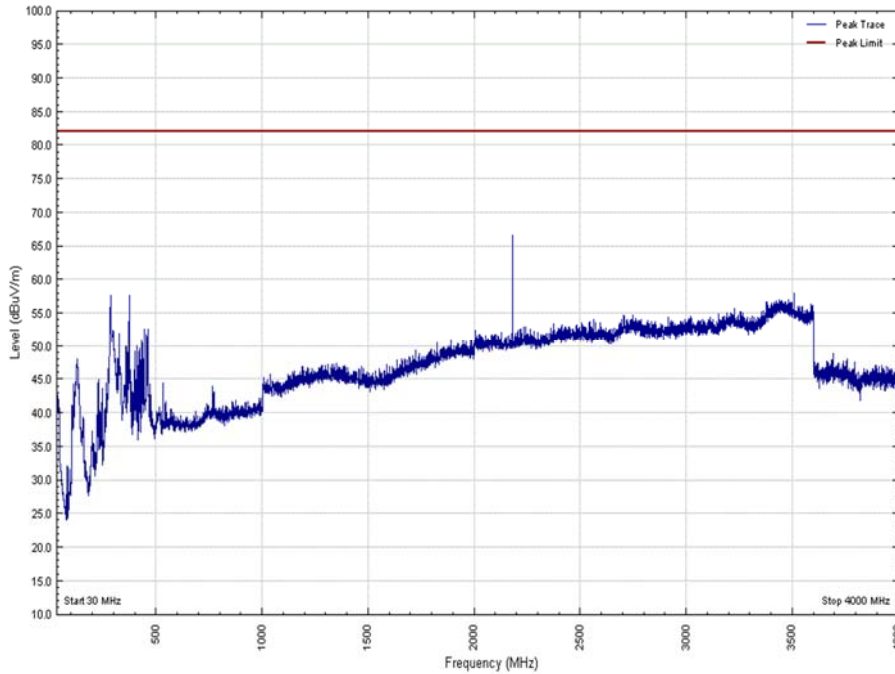
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 5 - Range 18000 to 22000 MHz - Horizontal



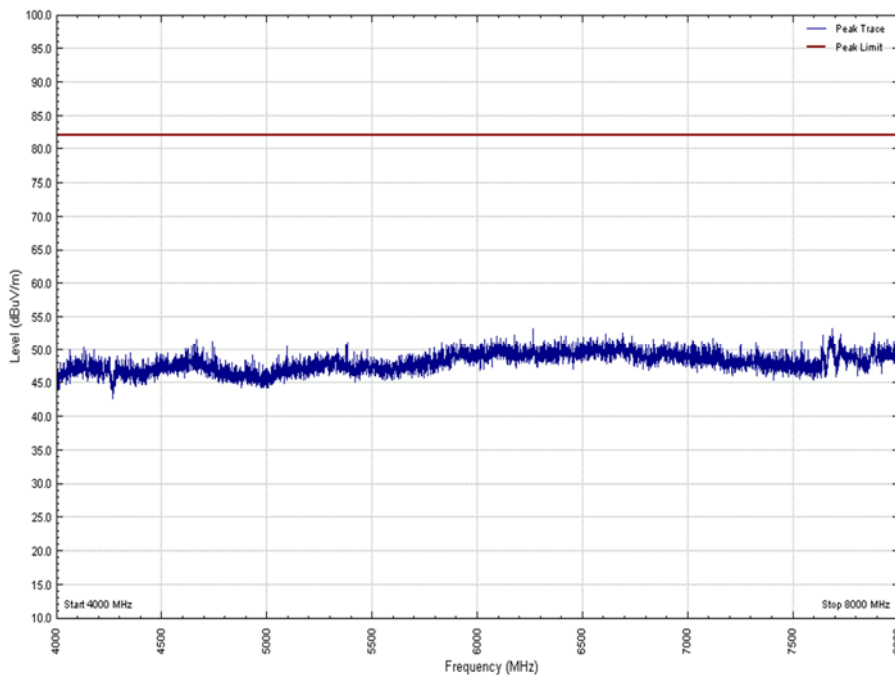


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 1 - Range 30 to 4000 MHz - Horizontal



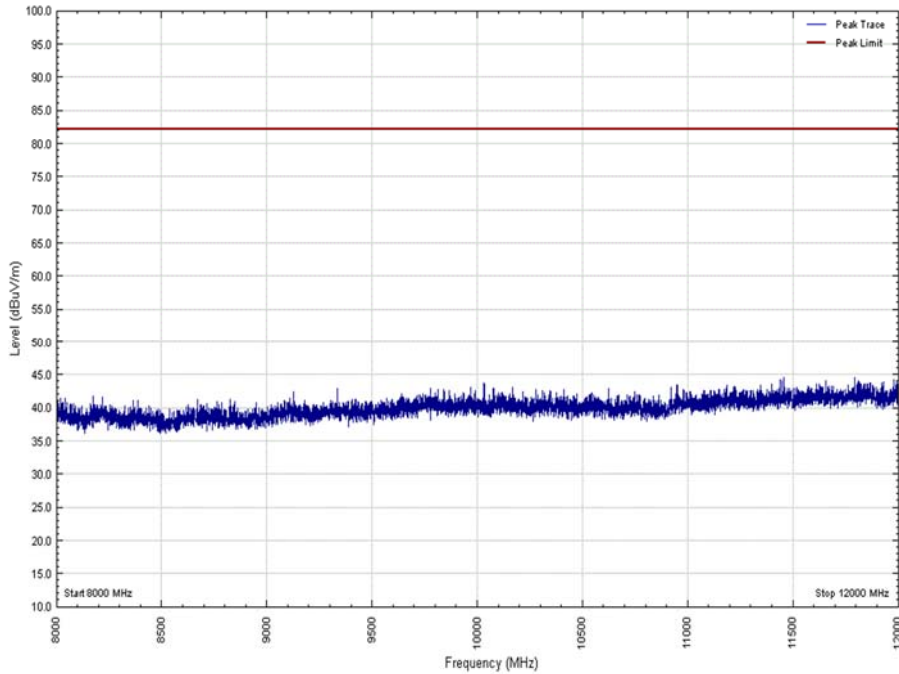
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 2 - Range 4000 to 8000 MHz - Horizontal



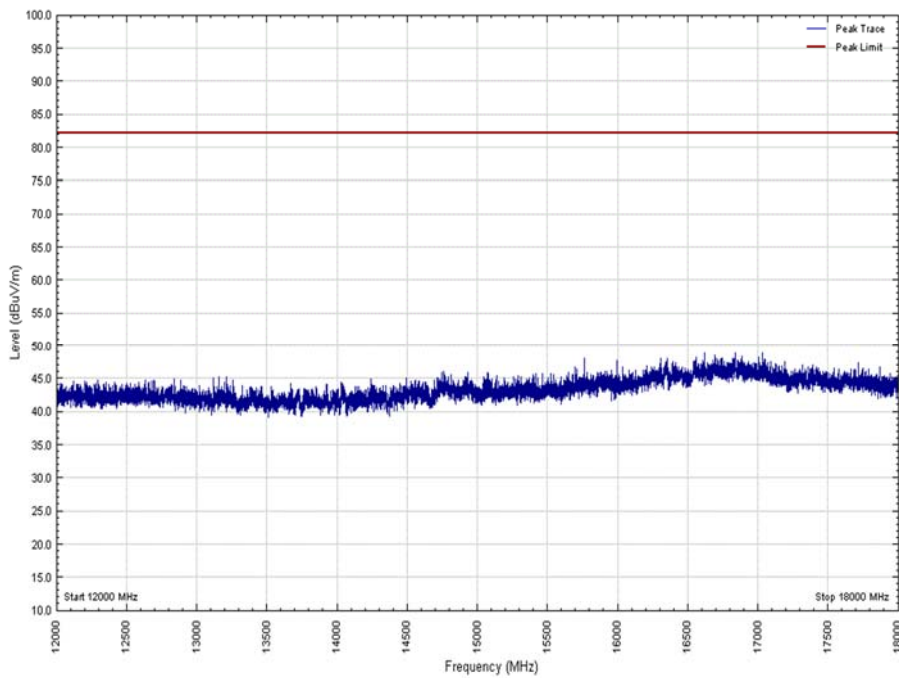


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 3 - Range 8000 to 12000 MHz - Horizontal



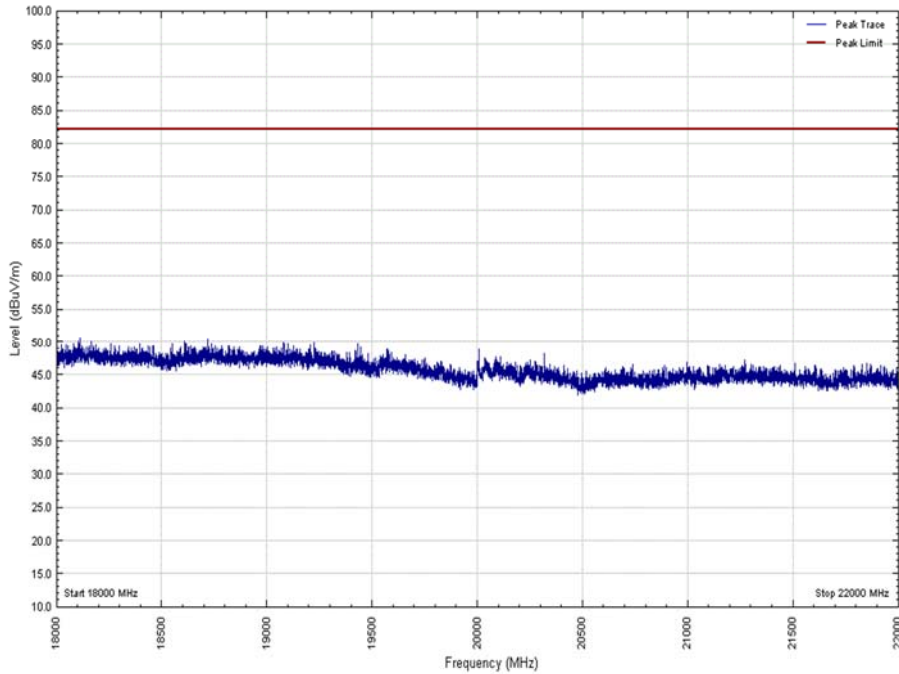
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 4 - Range 12000 to 18000 MHz - Horizontal



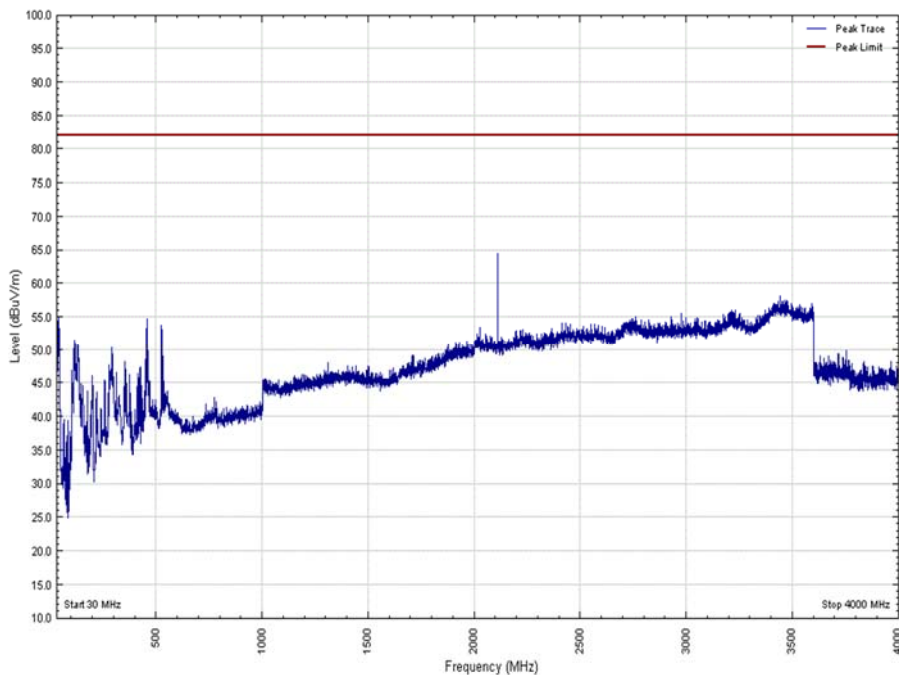


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 5 - Range 18000 to 22000 MHz - Horizontal



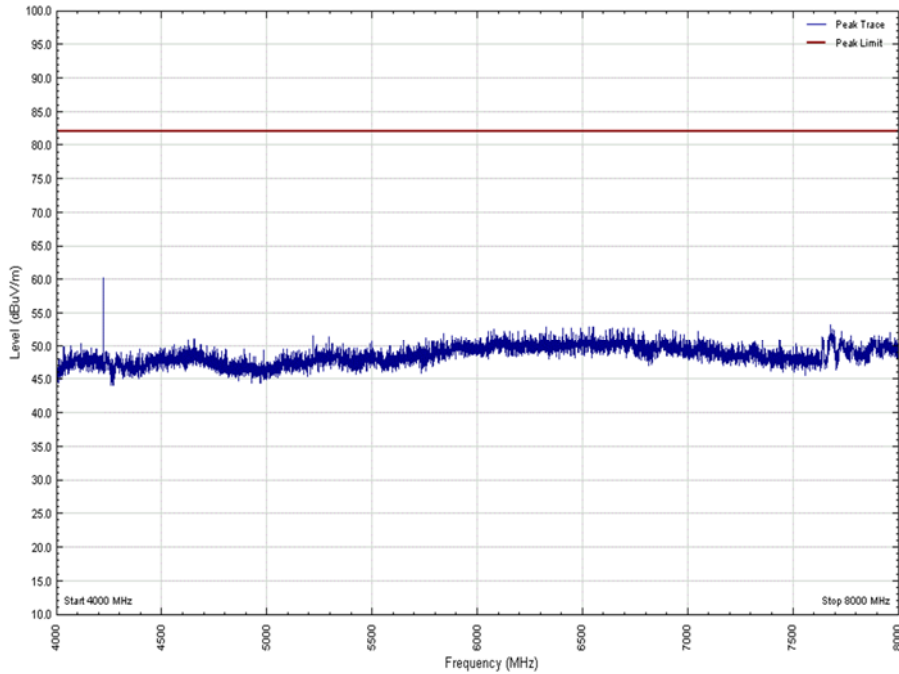
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 1 - Range 30 to 4000 MHz - Vertical



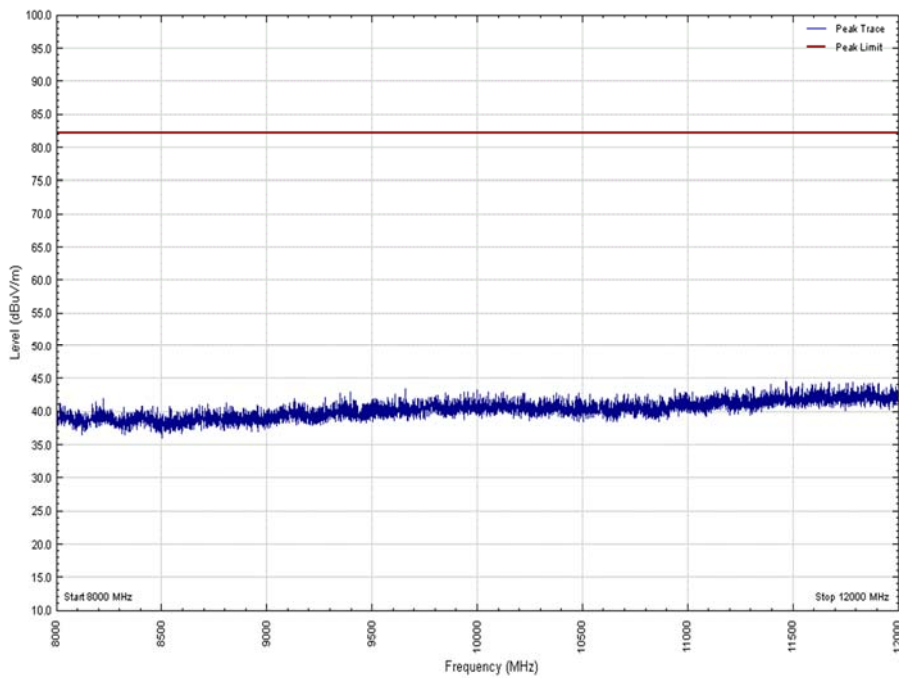


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 2 - Range 4000 to 8000 MHz - Vertical



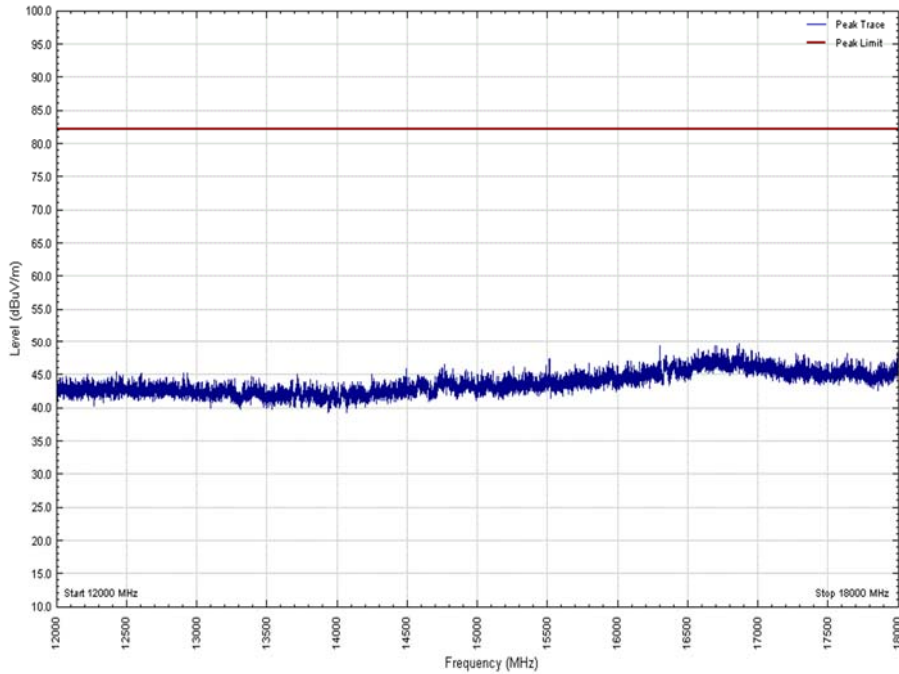
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 3 - Range 8000 to 12000 MHz - Vertical



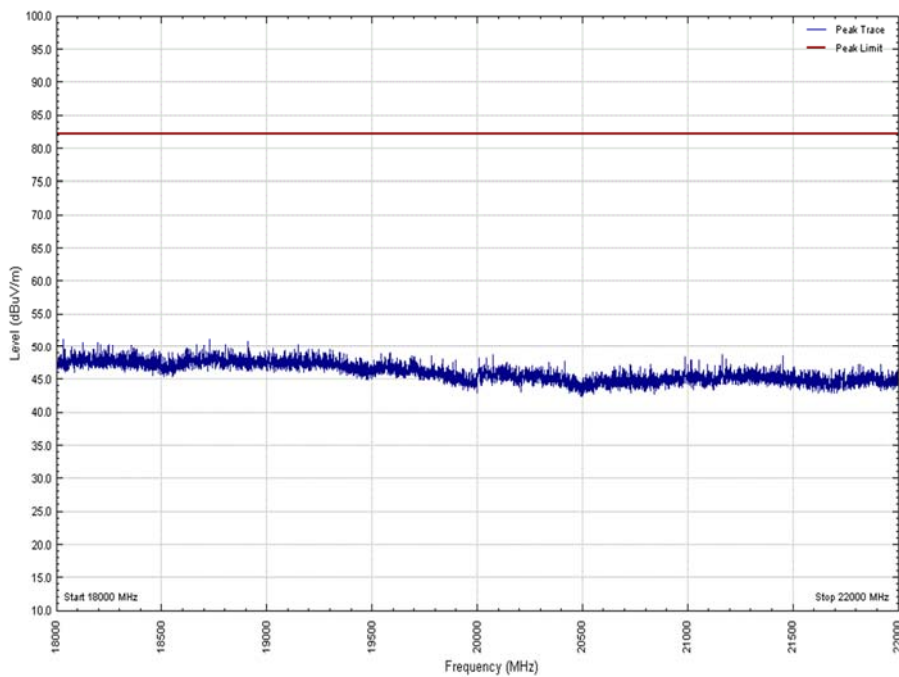


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 4 - Range 12000 to 18000 MHz - Vertical



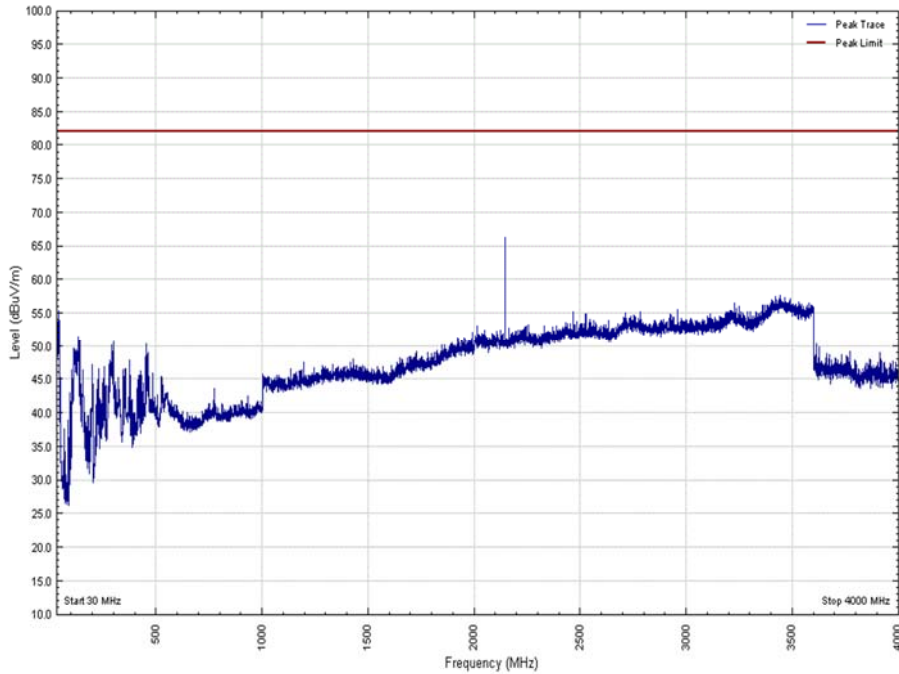
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position B - Band 5 - Range 18000 to 22000 MHz - Vertical



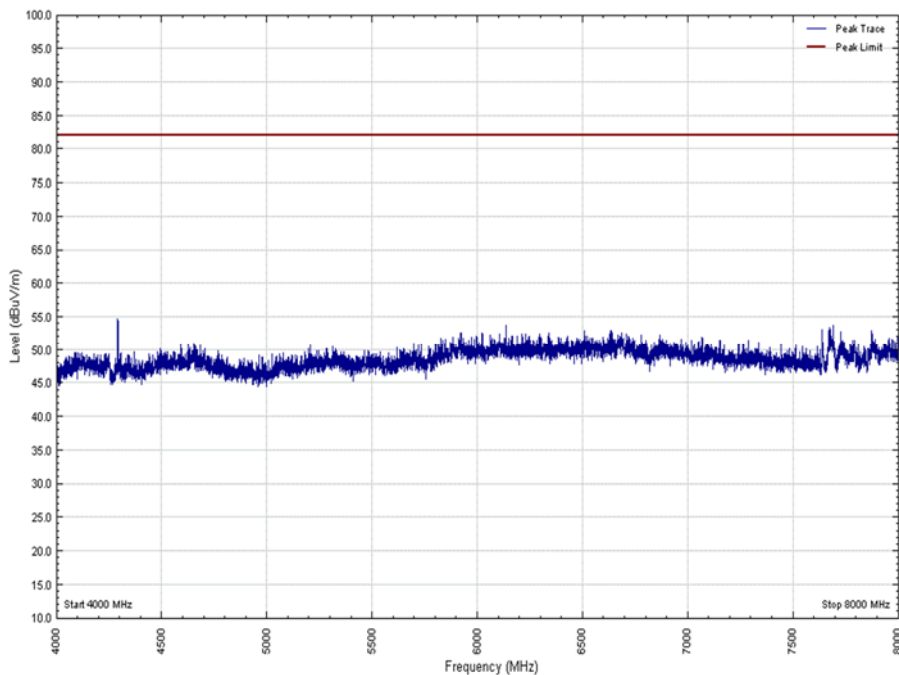


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 1 - Range 30 to 4000 MHz - Vertical



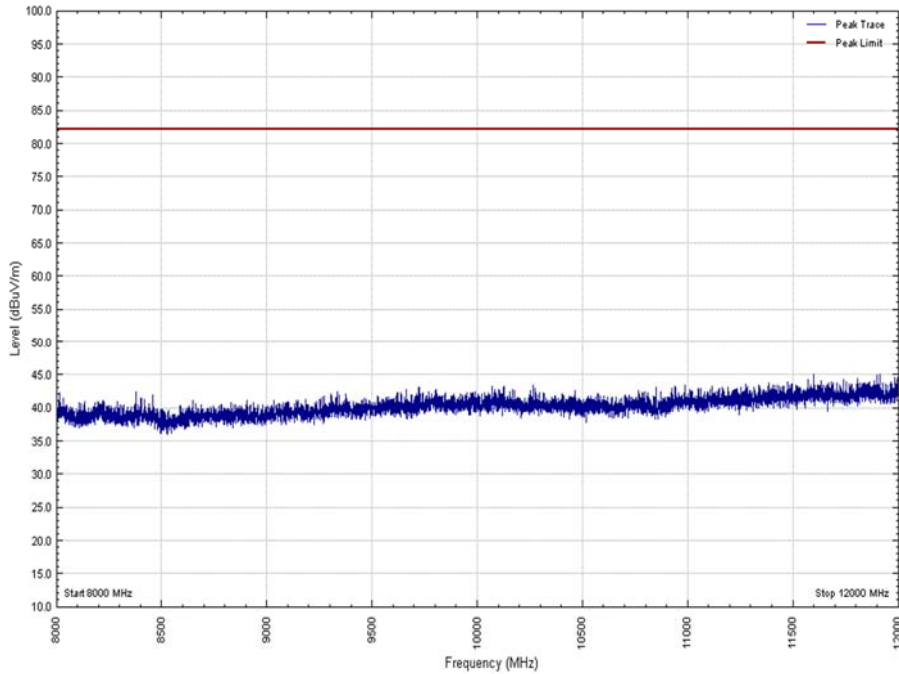
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 2 - Range 4000 to 8000 MHz - Vertical



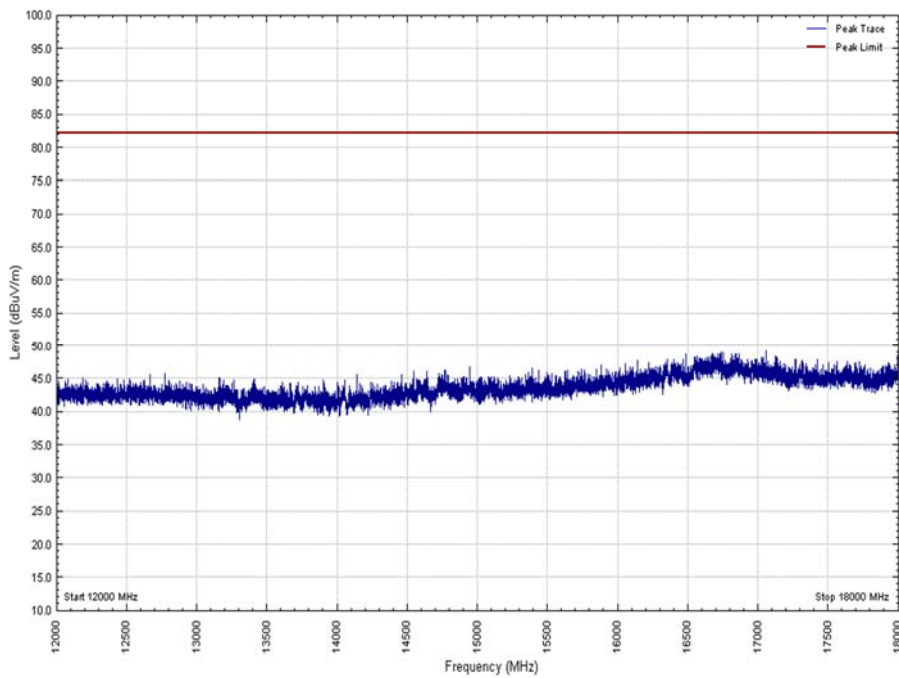


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 3 - Range 8000 to 12000 MHz - Vertical



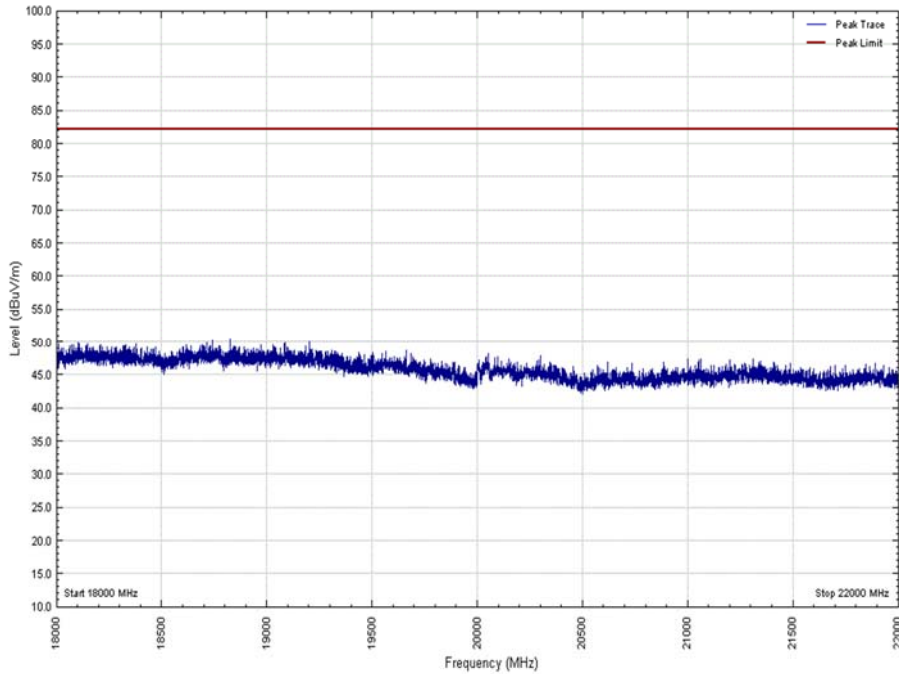
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 4 - Range 12000 to 18000 MHz - Vertical



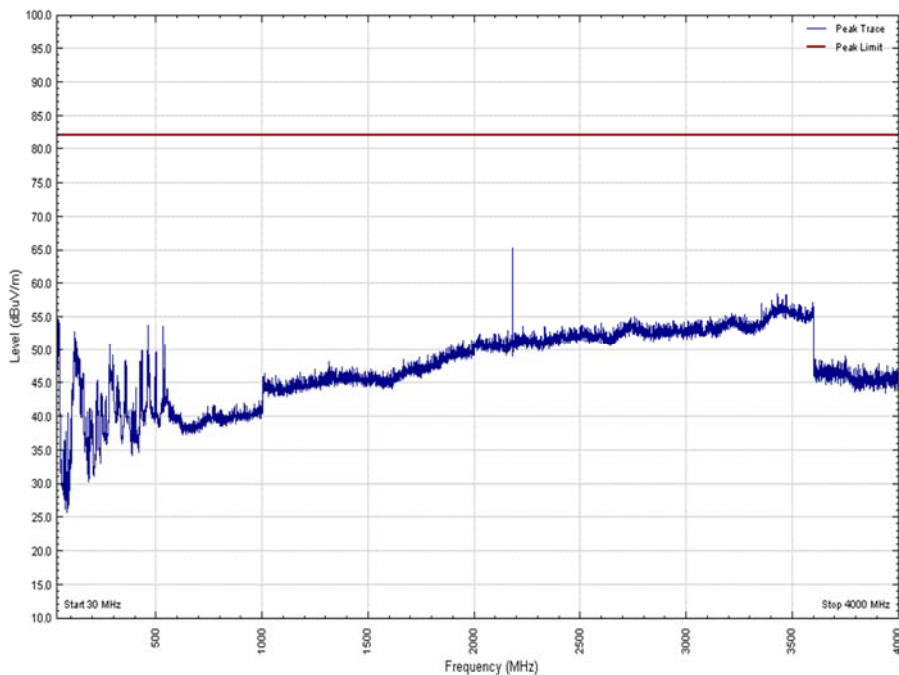


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position M - Band 5 - Range 18000 to 22000 MHz - Vertical



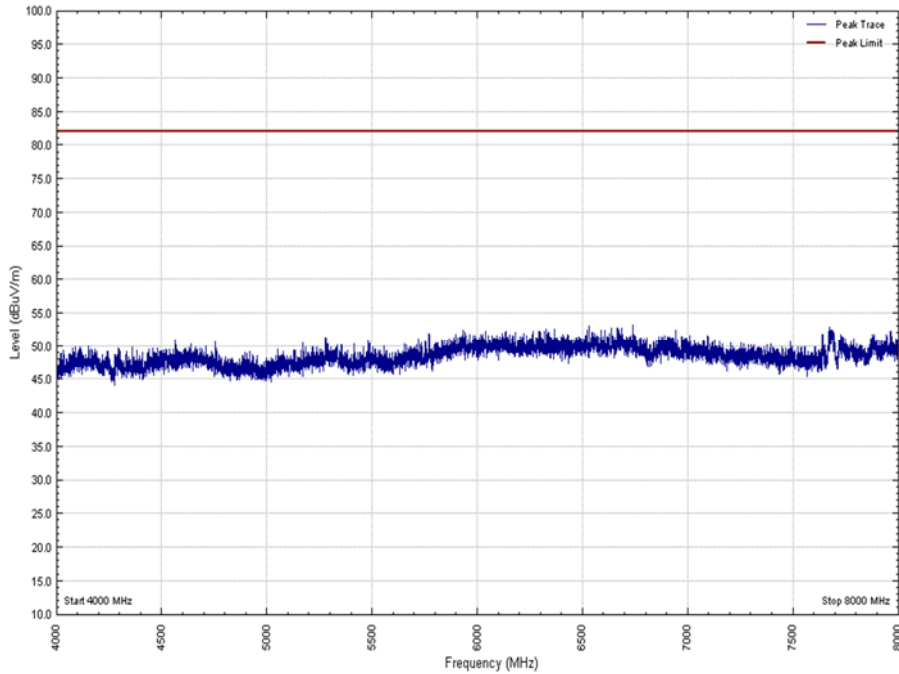
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 1 - Range 30 to 4000 MHz - Vertical



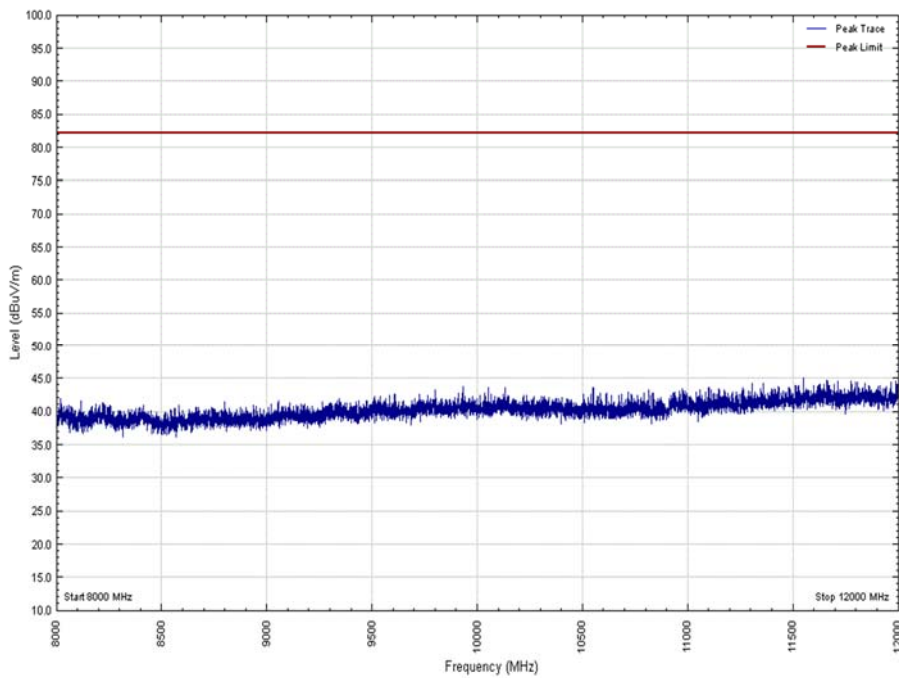


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 2 - Range 4000 to 8000 MHz - Vertical



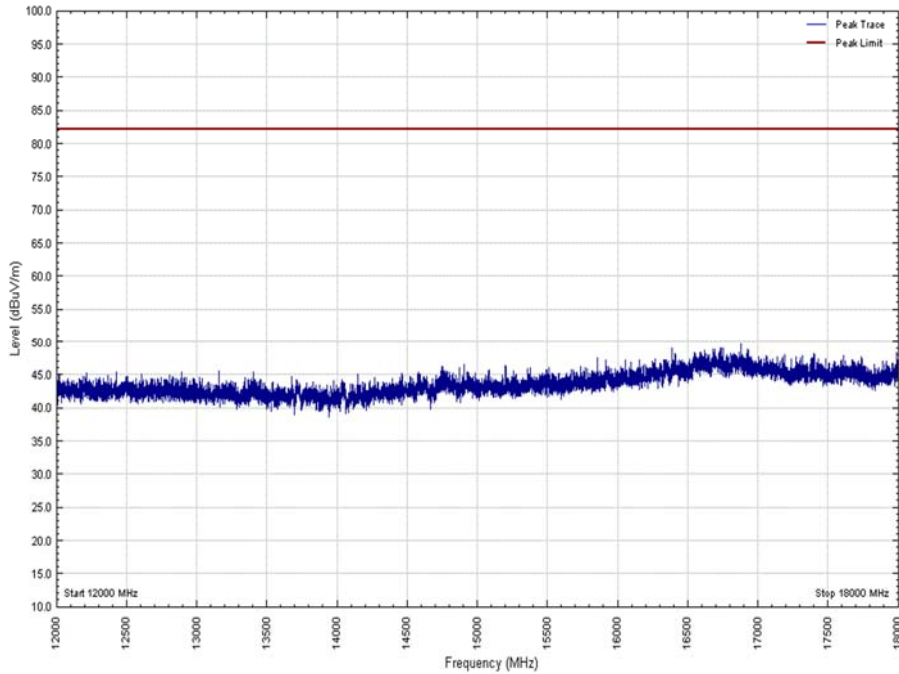
Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 3 - Range 8000 to 12000 MHz - Vertical



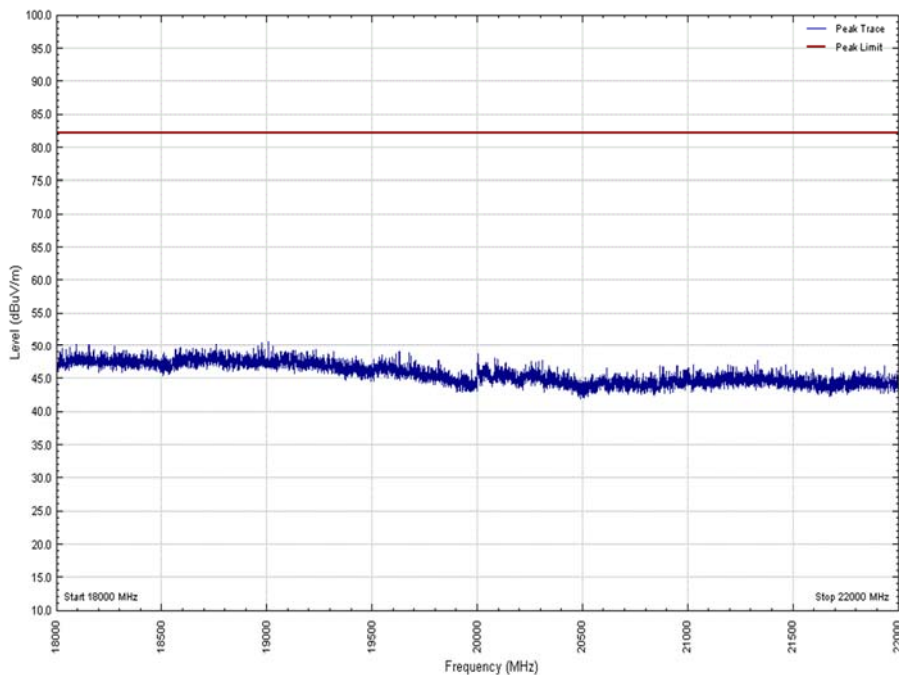


Product Service

Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 4 - Range 12000 to 18000 MHz - Vertical



Antenna A - NB-IoT SA Modulation N:QPSK - NB-IoT SA Carrier Bandwidth N:180 kHz - Channel Position T - Band 5 - Range 18000 to 22000 MHz - Vertical



Limit	82.2dBµV/m
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Product Service

SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Maximum Peak Output Power and Peak to Average Ratio - Conducted					
Hygrometer	Rotronic	Hygropalm	2404	12	26-Apr-2019
Analyser	Keysight	N9030A	4654	12	06-Oct-2018
Analyser	Rohde & Schwarz	ZVA 40	3548	12	02-Oct-2018
Calibration kit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2019
Power Supply	Farnell	H60-25	1092	-	O/P MON
DMM	White Gold	WG022	0190	12	24-Nov-2018
Occupied Bandwidth					
Hygrometer	Rotronic	Hygropalm	2404	12	26-Apr-2019
Analyser	Keysight	N9030A	4654	12	06-Oct-2018
Analyser	Rohde & Schwarz	ZVA 40	3548	12	02-Oct-2018
Calibration kit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2019
Power Supply	Farnell	H60-25	1092	-	O/P MON
DMM	White Gold	WG022	0190	12	24-Nov-2018
Band Edge					
Hygrometer	Rotronic	Hygropalm	2404	12	26-Apr-2019
Analyser	Keysight	N9030A	4654	12	06-Oct-2018
Analyser	Rohde & Schwarz	ZVA 40	3548	12	02-Oct-2018
Calibration kit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2019
Power Supply	Farnell	H60-25	1092	-	O/P MON
DMM	White Gold	WG022	0190	12	24-Nov-2018
Transmitter Spurious Emissions					
Hygrometer	Rotronic	Hygropalm	2404	12	26-Apr-2019
Analyser	Keysight	N9030A	4654	12	06-Oct-2018
Analyser	Rohde & Schwarz	ZVA 40	3548	12	02-Oct-2018
Calibration kit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2019
Power Supply	Farnell	H60-25	1092	-	O/P MON
DMM	White Gold	WG022	0190	12	24-Nov-2018
Transmitter Radiated Spurious Emissions					
Screened Room (5)	Rainford	Rainford	1545	36	18-Jul-2019
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Multimeter	Iso-tech	IDM101	2419	12	23-Nov-2018
Antenna (Bilog)	Chase	CBL6143	2904	24	08-Aug-2019
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	22-Nov-2018
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	31-Aug-2018
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	01-Mar-2019
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
9m N type RF cable	Rosenberger	2303-0 9.0m PNm PNm	4827	6	04-Jan-2019
4dB Attenuator	Pasternack	PE7047-4	4935	12	28-Nov-2018

TU – Traceability Unscheduled

O/P Mon – Output Monitored with Calibrated Equipment



Product Service

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Discipline	Frequency / Parameter	MU
Conducted Maximum Peak Output Power	30 MHz to 20 GHz Amplitude	± 0.1 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 2.3 dB
Frequency Stability	30 MHz to 2 GHz	± 5.0 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	± 1.1 Hz
Band Edge	30 MHz to 20 GHz Amplitude	± 2.3 dB
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Worst case error for both Time and Frequency measurement 12 parts in 10 ⁶		



Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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Product Service

ANNEX A

MODULE LIST



Product Service

Configurations A & B			
Product	Product No	R-State	Serial No
2203 B66A	KRC161 553/1	R1D	C82A554620
Software Version:	CXP9013268/9	Revision:	AM00