Comments from our SAR lab:

1.   SAR Test reduction for Head SAR tilt position of mobile phones

The purpose of this test reduction approach is to reduce the tilt position Head SAR test numbers of mobile phones.

For DUT with a bottom-mounted internal antenna (i.e. an internal antenna mounted in the bottom half of the DUT) that is fully embedded within 2.5cm from the bottom of the device, when the highest cheek position reported SAR for a frequency band and operating mode is at least 3 dB from the SAR limit, SAR testing in the tilt position is not required.

Please refer to IEC 62209-1:2016 Annex L for more detailed supporting SAR data analysis results. We hope the similar SAR test reduction procedure could also be accepted by FCC.

2.   SAR Test reduction using Sensor Array Fast SAR system + DASY SAR system

The purpose of this test reduction approach is to reduce the "full SAR" test numbers by using the Sensor Array Fast SAR system + DASY SAR system combination.

We suggest the existing SAR screening procedure for dynamic antenna tuners and diversity antennas using Sensor Array Fast SAR system (CSAR3D, ART-MAN etc.) could be expanded to be a common SAR test reduction:

1) Firstly, the Sensor Array Fast SAR system is used to identify the SAR worst case of each antenna, frequency band and RF exposure condition.

2) Then, the Full SAR (DASY system) is tested for the worst case of each antenna, frequency band and RF exposure condition found in step 1) to determine compliance.

3.   SAR Test reduction for other test channels

The purpose of this test reduction approach is to further reduce the number of test channels that require SAR measurement based on maximum measured output power. The test reduction approach is as below:

1) For the operating mode and exposure configuration of a frequency band, the channel with the highest output power channel is selected for SAR testing.

2) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is $\leqslant$ 50% SAR limit, no further SAR testing is required for other channels in that exposure configuration.

3) When the reported SAR is > 50% SAR limit, SAR is required for that exposure configuration using the next highest measured output power channel.

4) When any reported SAR is > 75% SAR Limit, SAR is required for the third channel; i.e., all channels require testing.

The similar test reduction approach above has been included in KDB 248227D01 802.11 WiFi SAR procedure. We suggest that it can also be extended to other wireless technologies (GSM/CDMA/UMTS/LTE/BT etc.).

Comments from our RF lab:

1.As for RF LTE part, the power under QPSK mode is higher than 16QAM, can we just only test the worst case ,all the test items under QPSK mode tested, thus the test data could reduce half?

2. in the same mode,FDD or TDD,the overlapped frequency band like LTE Band2 and Band25,Band 12 and Band17,can we choose one who supports larger frequency range to test?

3. LTE bands support many bandwidths type ,if we test each bandwidth of each band, it could be too much .So,can we just test 1RB#low,1RB#High(1RB,Low position or High position)of the lowest bandwidth and highest bandwidth, OR,we test all the bandwidth of each band,but only the lowest and highest bandwidth test data present in the report.