APPENDIX E: TEST SEQUENCES

- 1. Test sequence is generated based on below parameters of the DUT:
 - a. Measured maximum power (P_{max})
 - b. Measured Tx_power_at_SAR_design_target (Plimit)
 - c. Reserve_power_margin (dB)
 - For 3G Technology: Reserve_power_margin (dB) = Reserve_power_margin_db_2g_3g_wwan; Preserve (dBm) = measured Plimit (dBm) -Reserve_power_margin_db_2g_3g_wwan
 - For 4G and 5G Technology: Reserve_power_margin (dB) = -10*log10(total_min_exp_budget_linear_4g_5g_wwan); Preserve (dBm) = measured Plimit (dBm) -(-10*log10(total_min_exp_budget_linear_4g_5g_wwan))
 - d. SAR_time_window (100s for FCC)
- Test Sequence 1 Waveform:

Based on the parameters above, the Test Sequence 1 is generated with one transition between high and low Tx powers. Here, high power = P_{max} ; low power = $P_{max}/2$, and the transition occurs after 80 seconds at high power P_{max} . As long as the power enforcement is taking into effective during one 100s/60s time window, the validation test with this defined test sequence 1 is valid, otherwise, select other radio configuration (band/DSI within the same technology group) having lower Plimit for this test. The Test sequence 1 waveform is shown below:

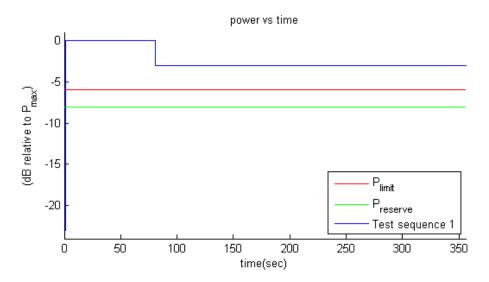


Figure E-1 Test sequence 1 waveform

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3. Test Sequence 2 Waveform:

Based on the parameters described above, the Test Sequence 2 is generated as described in Table E-1, which contains two 170 second-long sequences (yellow and green highlighted rows) that are mirrored around the center row of 20s, resulting in a total duration of 360 seconds:

Table E-1 **Test Sequence 2**

Time duration (seconds)	dB relative to P_{limit} or $P_{reserve}$
<mark>15</mark>	P _{reserve} – 2
<mark>20</mark>	P _{limit}
<mark>20</mark>	$\frac{(P_{limit} + P_{max})}{2}$ averaged in mW and rounded to nearest 0.1 dB step
<mark>10</mark>	P _{reserve} – 6
<mark>20</mark>	P _{max}
<mark>15</mark>	P _{limit}
<mark>15</mark>	P _{reserve} – 5
20	P _{max}
<mark>10</mark>	P _{reserve} – 3
<mark>15</mark>	P _{limit}
<mark>10</mark>	P _{reserve} – 4
20	$(P_{limit} + P_{max})/2$ averaged in mW and rounded to nearest 0.1 dB step
10	P _{reserve} – 4
<mark>15</mark>	P _{limit}
<mark>10</mark>	Preserve - 3
<mark>20</mark>	P _{max}
<mark>15</mark>	P _{reserve} – 5
<mark>15</mark>	P _{limit}
20	P _{max}
<mark>10</mark>	P _{reserve} – 6
20	$(P_{limit} + P_{max})/2$ averaged in mW and rounded to nearest 0.1 dB step
20	Plimit
<mark>15</mark>	P _{reserve} – 2

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The Test Sequence 2 waveform is shown in Figure E-2.

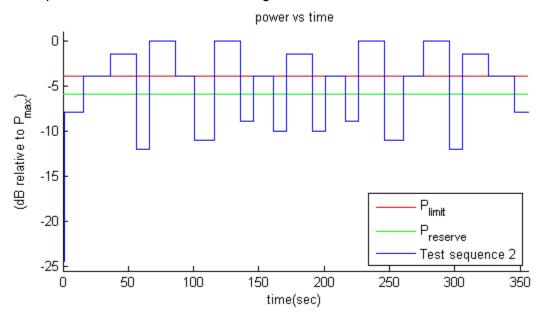


Figure E-2
Test sequence 2 waveform

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