10785	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10786	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10787	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	± 9.6 %
10788	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10789	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10790	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10791	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	± 9.6 %
10792	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
10793	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10794	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10795	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	± 9.6 %
10796	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10797	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10798	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10799	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10801	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10802	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	± 9.6 %
10803	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10810	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10817	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10818	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	± 9.6 %
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10821	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10823	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10824	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10828	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	± 9.6 %
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 %
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	± 9.6 %
10833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	± 9.6 %
10839	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %

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10861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10864	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10865	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10866	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	± 9.6 %
10869	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	± 9.6 %
10871	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10872	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10875	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	± 9.6 %
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10879	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	± 9.6 %
10880	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	± 9.6 %
10884	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	± 9.6 %
10885	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAC	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAB	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAB	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAB	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAB	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAB	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAB	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAB	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAB	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10912	AAB	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAB	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10914	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 %
10915	AAB	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10916	AAB	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10917	AAB	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10918	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10919	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10921	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %

10923	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10924	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10925	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 %
10926	AAB	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAB	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10928	AAC	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10929	AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10930	AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10931	AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10932	AAC	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10935	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10936	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10937	AAC	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 9.6 %
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 %
10944	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAC	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10946	AAC	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10947	AAC	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10948	AAC	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10949	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10950	AAC	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10951	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	± 9.6 %
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 9.6 %
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 %
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 %
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	± 9.6 %
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10964	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	± 9.6 %
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 9.6 %
10972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	± 9.6 %
10973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	± 9.6 %
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	± 9.6 %
10978	AAA	ULLA BDR	ULLA	2.23	± 9.6 %
10979	AAA	ULLA HDR4	ULLA	7.02	± 9.6 %
10980	AAA	ULLA HDR8	ULLA	8.82	± 9.6 %
10981	AAA	ULLA HDRp4	ULLA	1.50	± 9.6 %
10982	AAA	ULLA HDRp8	ULLA	1.44	± 9.6 %

[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Appendix G. – Dipole Calibration Data

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)** Certificate No: **D750V3-1014_May22**

CALIBRATION CERTIFICATE

Object D750V3 - SN:1014

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: May 25, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Aidonia Georgiadou	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: May 30, 2022

결	담 당 자	최 종 자
재	UL/박정훈 2022.06.16	CT/최경강 2022.06.16

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.19 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.71 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.70 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.5 Ω + 2.9 jΩ
Return Loss	- 25.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.040 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 25.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

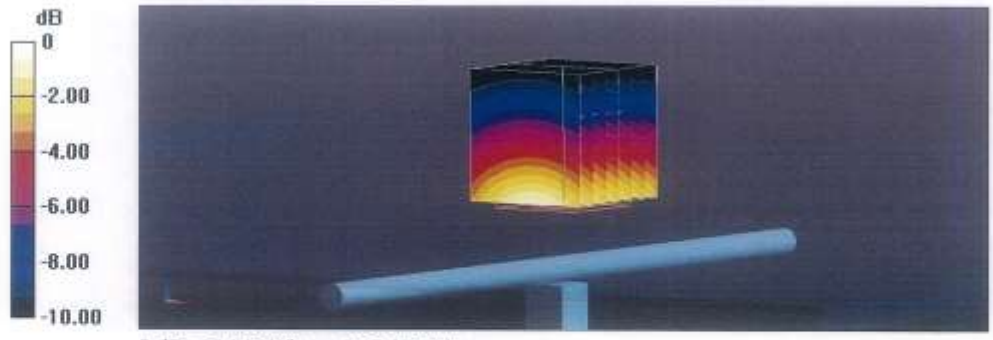
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1014

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.89 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

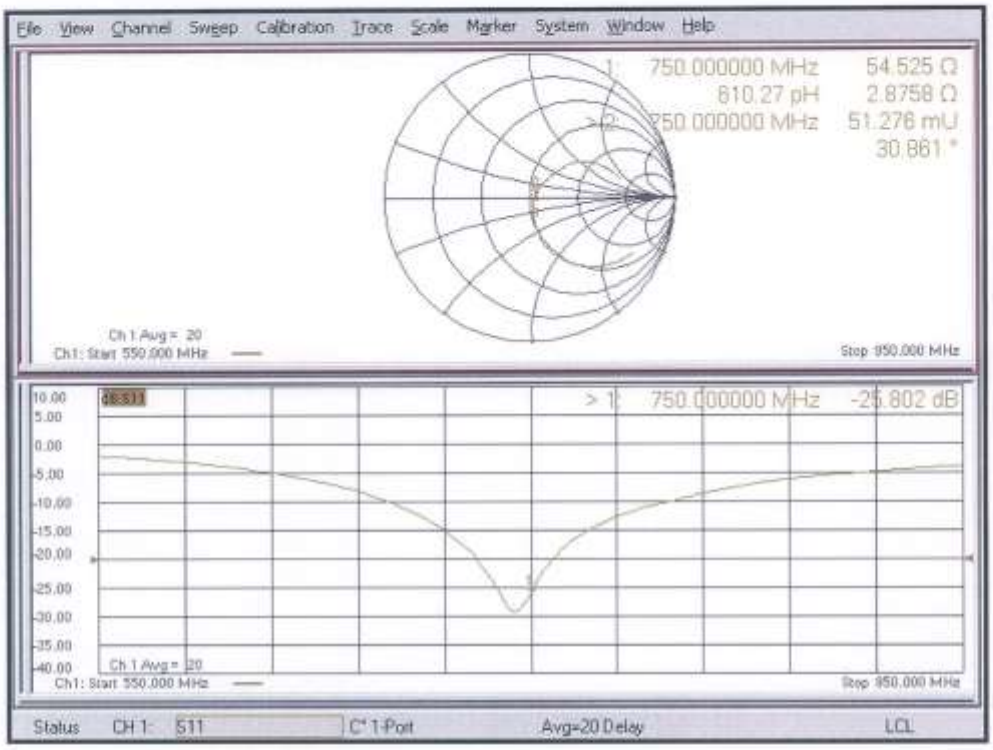
- Probe: EX3DV4 - SN7349; ConvF(10.11, 10.11, 10.11) @ 750 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.50 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.36 W/kg
SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.43 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 65.3%
Maximum value of SAR (measured) = 2.93 W/kg



0 dB = 2.93 W/kg = 4.67 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D835V2-441_Jul22

CALIBRATION CERTIFICATE

Object D835V2 - SN:441

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: July 15, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Aidonia Georgiadou	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: July 25, 2022

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

결재	담당자	확인자
	UL/박정환 2021.08.10	KS/허성재 21.08.10

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	0.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.51 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.73 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.62 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.33 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.4 Ω + 5.5 jΩ
Return Loss	- 24.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.372 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 15.07.2022

Test Laboratory: SPEAG, Zurich, Switzerland

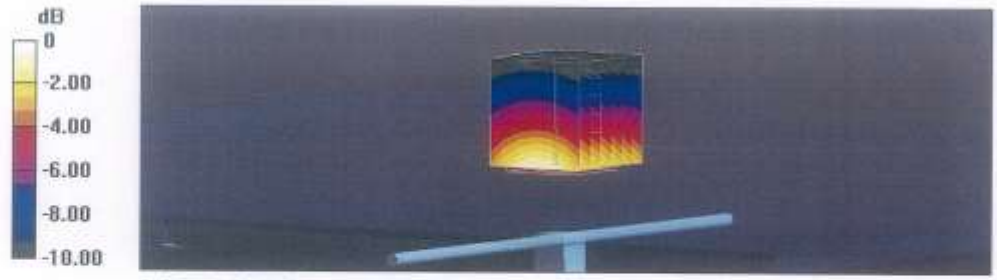
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:441

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

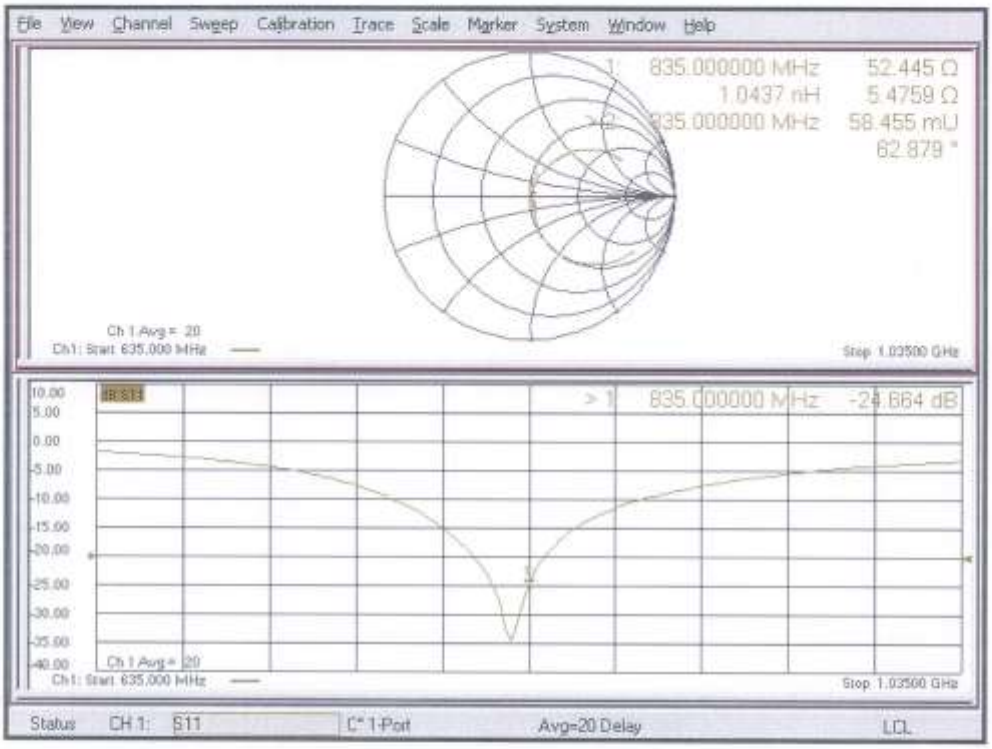
- Probe: EX3DV4 - SN7349; ConvF(9.69, 9.69, 9.69) @ 835 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 64.34 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.83 W/kg
SAR(1 g) = 2.51 W/kg; SAR(10 g) = 1.62 W/kg
Smallest distance from peaks to all points 3 dB below = 16 mm
Ratio of SAR at M2 to SAR at M1 = 65.4%
Maximum value of SAR (measured) = 3.39 W/kg



0 dB = 3.39 W/kg = 5.30 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D1800V2-2d007_Jul22

CALIBRATION CERTIFICATE

Object D1800V2 - SN:2d007

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: July 18, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Joanna Lleshaj	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: July 25, 2022

결재	담당자	확인자
	DL / 박경철 2022.08.10	CT / 최용창 2022.08.10

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.4 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**38.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.95 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.8 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	46.5 Ω - 8.1 jΩ
Return Loss	- 20.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.204 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 18.07.2022

Test Laboratory: SPEAG, Zurich, Switzerland

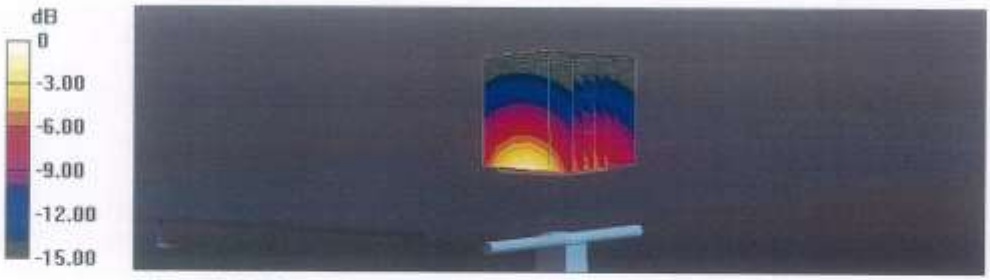
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d007

Communication System: UID 0 - CW; Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.38 S/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

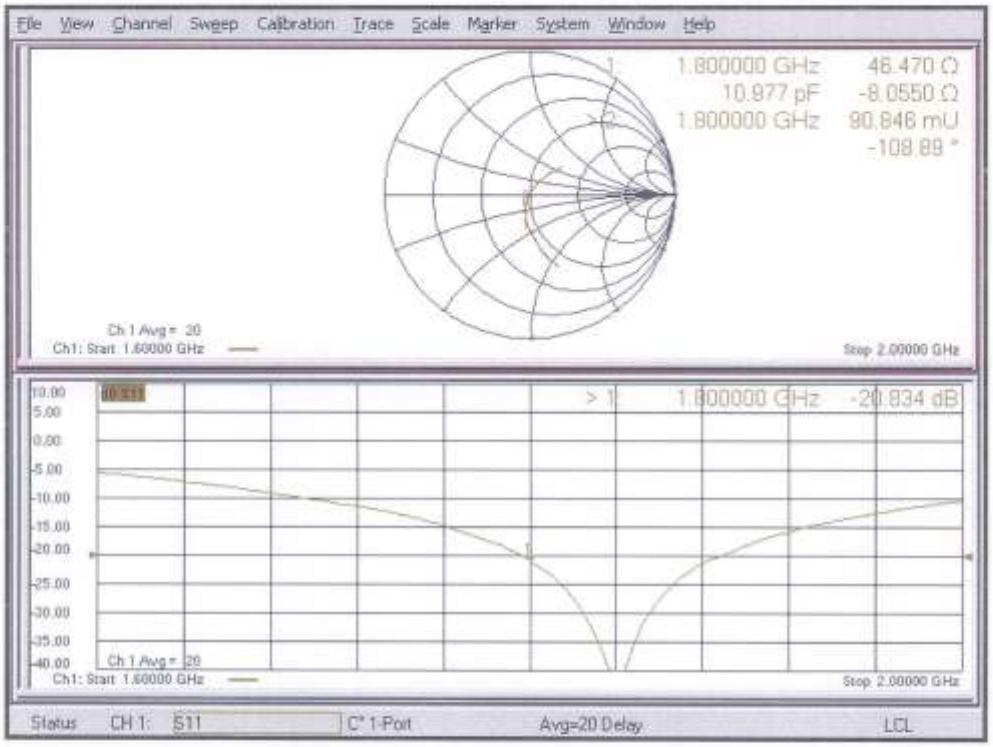
- Probe: EX3DV4 - SN7349; ConvF(8.63, 8.63, 8.63) @ 1800 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.9 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 9.55 W/kg; SAR(10 g) = 4.95 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 53.2%
Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg = 11.70 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D1900V2-5d032_Jan22

CALIBRATION CERTIFICATE

Object D1900V2 - SN:5d032

Calibration procedure(s) QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: January 28, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344)	Apr-22
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	01-Nov-21 (No. DAE4-601_Nov21)	Nov-22

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Joanna Lleshaj	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: January 31, 2022

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.8 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	10.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.23 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.9 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω + 7.4 jΩ
Return Loss	- 22.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.191 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 28.01.2022

Test Laboratory: SPEAG, Zurich, Switzerland

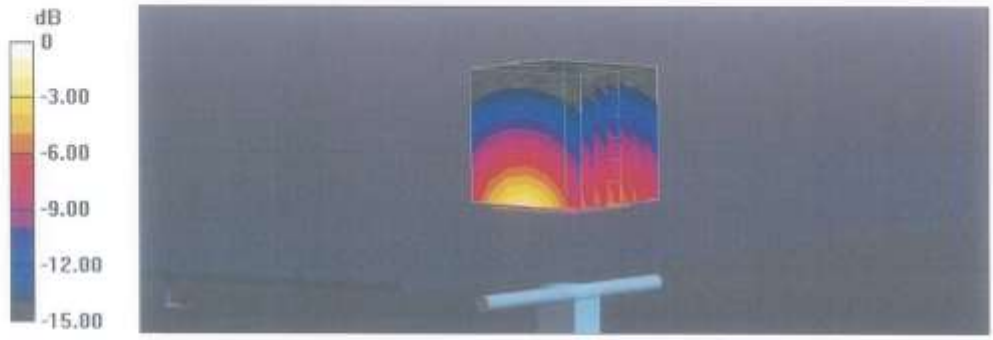
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 S/m; ε_r = 39.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

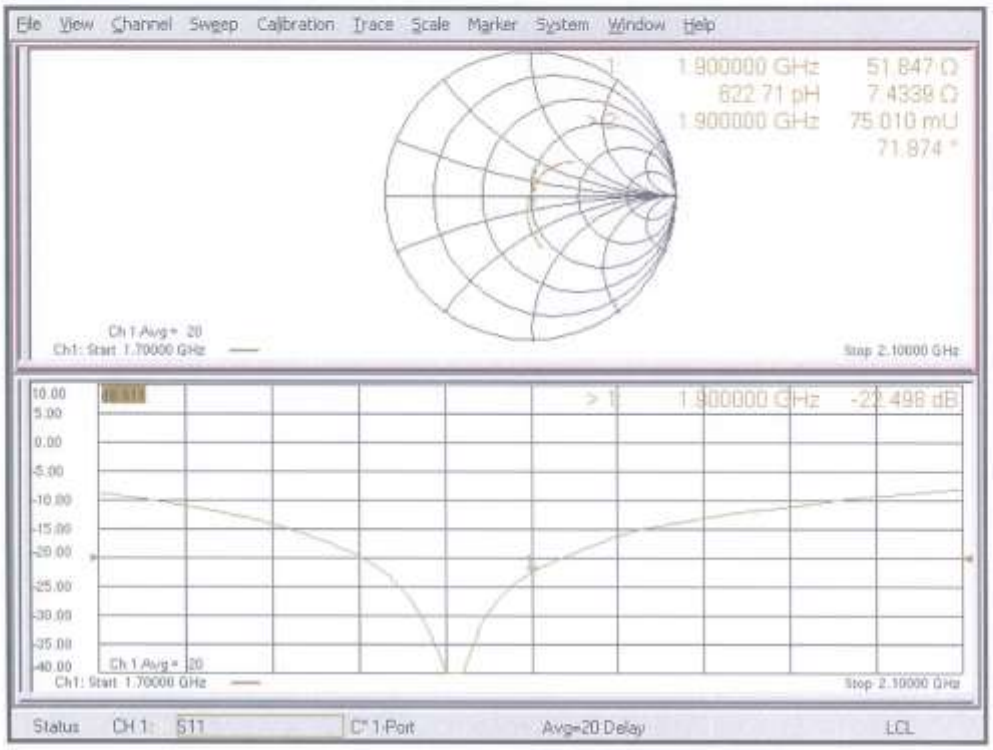
- Probe: EX3DV4 - SN7349; ConvF(8.43, 8.43, 8.43) @ 1900 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 01.11.2021
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.8 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 18.3 W/kg
SAR(1 g) = 10.0 W/kg; SAR(10 g) = 5.23 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 55.2%
Maximum value of SAR (measured) = 15.4 W/kg



0 dB = 15.4 W/kg = 11.88 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 0108**

Client: HCT (Dymstec) Certificate No: **D2450V2-743_May22**

CALIBRATION CERTIFICATE

	담당자	확인자
결재	강 리경	
	SAR 강리경 2022.6.30	LTE 박영철 2022.6.30

Object: D2450V2 - SN:743

Calibration procedure(s): QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: May 31, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Joanna Lleshaj	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: June 3, 2022

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Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.3 ± 6 %	1.84 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**53.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.8 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.7 Ω + 5.9 jΩ
Return Loss	- 22.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.160 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 31.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

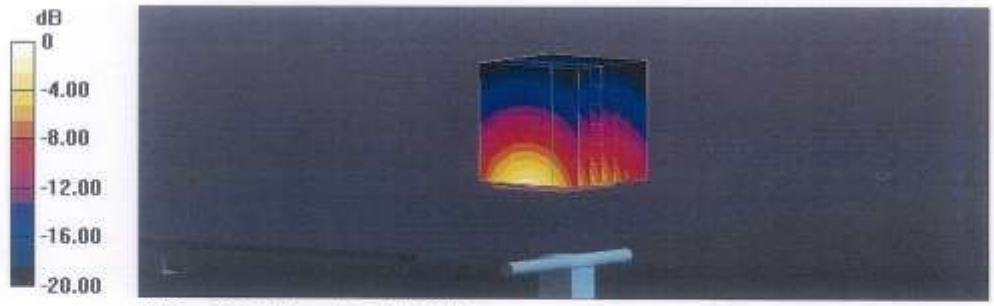
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:743

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.84 S/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

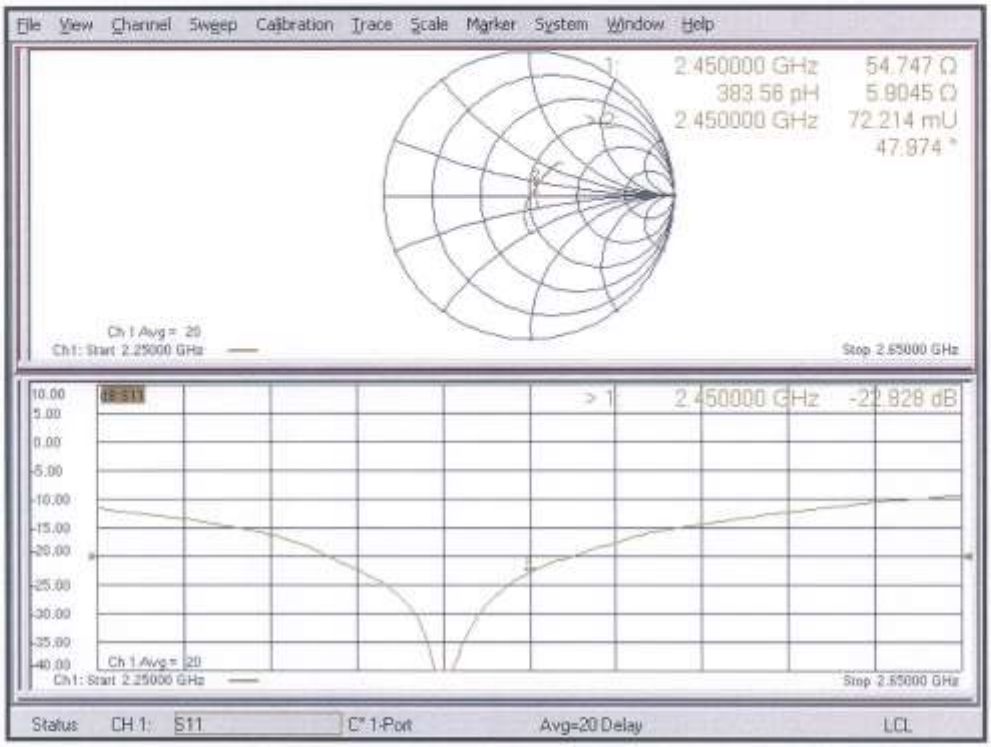
- Probe: EX3DV4 - SN7349; ConvF(7.96, 7.96, 7.96) @ 2450 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 116.2 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.26 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 50%
Maximum value of SAR (measured) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)** Certificate No: **D2600V2-1015_Jul22**

CALIBRATION CERTIFICATE

Object	D2600V2 - SN:1015
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	July 15, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Aidonia Georgiadou	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: July 25, 2022

결재	담당자	확인자
	OL / 부장 2022.08.10	G / 부장 2022.08.10

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	2.01 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**56.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**25.2 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.9 Ω - 4.5 jΩ
Return Loss	- 26.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 15.07.2022

Test Laboratory: SPEAG, Zurich, Switzerland

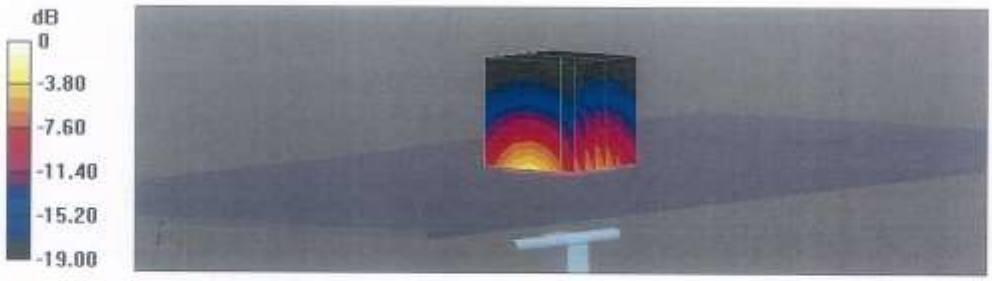
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1015

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.01 S/m; ε_r = 37.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

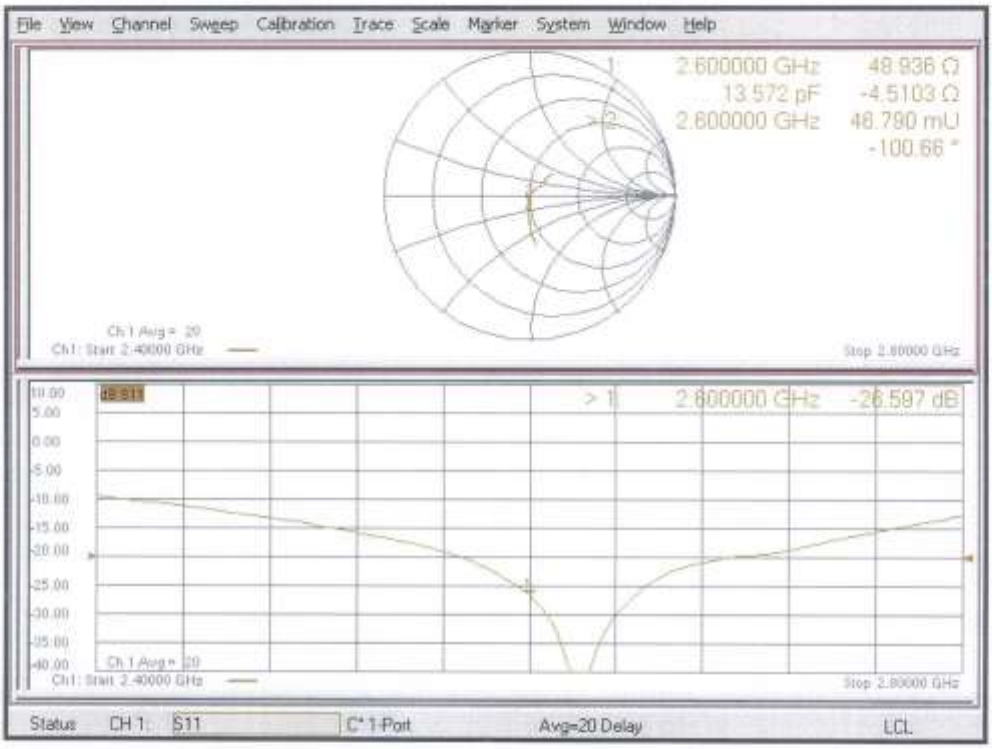
- Probe: EX3DV4 - SN7349; ConvF(7.84, 7.84, 7.84) @ 2600 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 117.2 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 28.3 W/kg
SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.40 W/kg
Smallest distance from peaks to all points 3 dB below = 8.5 mm
Ratio of SAR at M2 to SAR at M1 = 50.6%
Maximum value of SAR (measured) = 23.7 W/kg



0 dB = 23.7 W/kg = 13.74 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec)

Certificate No: D3500V2-1132_Jan22

CALIBRATION CERTIFICATE

Object D3500V2 - SN:1132

Calibration procedure(s) QA CAL-22.v6
Calibration Procedure for SAR Validation Sources between 3-10 GHz

Calibration date: January 24, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

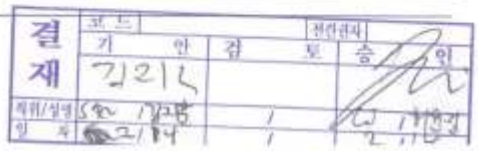
Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344)	Apr-22
Reference Probe EX3DV4	SN: 3503	31-Dec-21 (No. EX3-3503_Dec21)	Dec-22
DAE4	SN: 601	01-Nov-21 (No. DAE4-601_Nov21)	Nov-22

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: January 24, 2022



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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3500 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	37.9	2.91 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	2.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**65.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.46 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.5 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.2 Ω - 5.5 jΩ
Return Loss	- 24.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.130 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 24.01.2022

Test Laboratory: SPEAG, Zurich, Switzerland

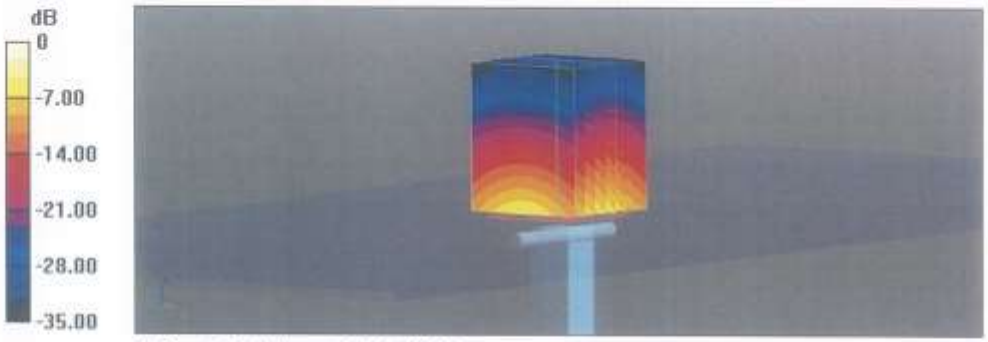
DUT: Dipole 3500 MHz; Type: D3500V2; Serial: D3500V2 - SN:1132

Communication System: UID 0 - CW; Frequency: 3500 MHz
Medium parameters used: f = 3500 MHz; σ = 2.93 S/m; ε_r = 37.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

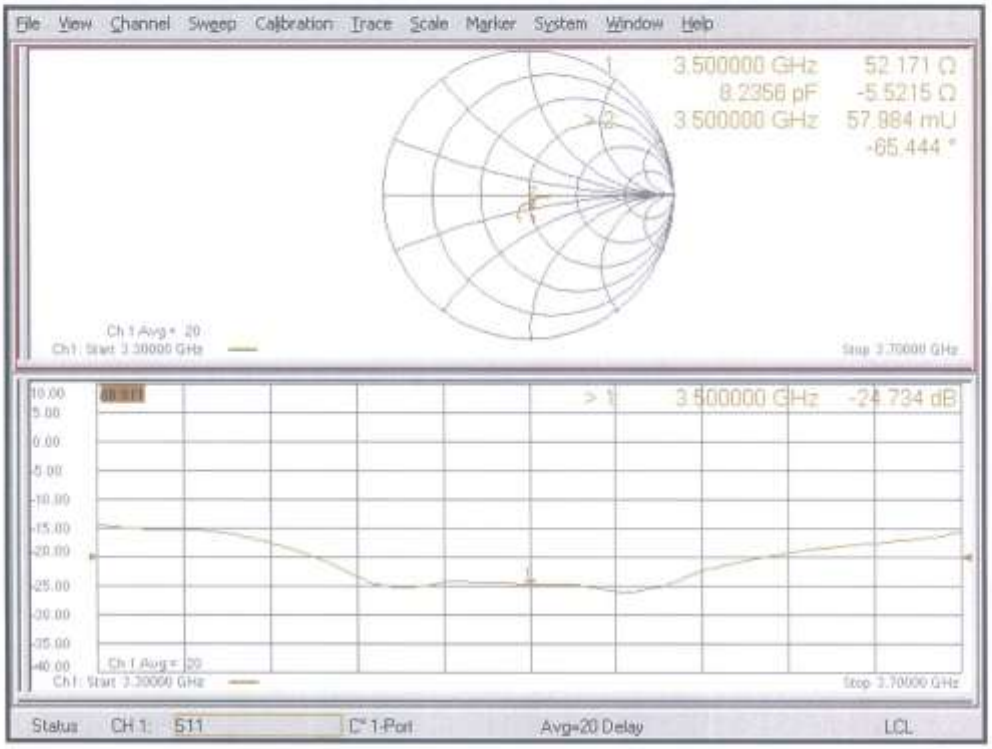
- Probe: EX3DV4 - SN3503; ConvF(7.91, 7.91, 7.91) @ 3500 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 01.11.2021
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm, f=3500MHz/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.40 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 6.56 W/kg; SAR(10 g) = 2.46 W/kg
Smallest distance from peaks to all points 3 dB below = 8.4 mm
Ratio of SAR at M2 to SAR at M1 = 75.7%
Maximum value of SAR (measured) = 12.3 W/kg



0 dB = 12.3 W/kg = 10.91 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)** Certificate No: **D3700V2-1105_Nov21**

CALIBRATION CERTIFICATE

Object D3700V2 - SN:1105

Calibration procedure(s) QA CAL-22.v6
Calibration Procedure for SAR Validation Sources between 3-10 GHz

Calibration date: November 22, 2021

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344)	Apr-22
Reference Probe EX3DV4	SN: 3503	30-Dec-20 (No. EX3-3503_Dec20)	Dec-21
DAE4	SN: 601	01-Nov-21 (No. DAE4-601_Nov21)	Nov-22

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Jeffrey Katzman	Laboratory Technician	
Approved by:	Niels Kuster	Quality Manager	

Issued: November 24, 2021

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

	담 당 자	확 인 자
결 재	DL 박경호 2021.12.09	CJ 정경화 2021.12.09

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Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3700 MHz ± 1 MHz	

Head TSL parameters at 3700 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	37.7	3.12 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.9 ± 6 %	3.10 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 3700 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.64 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**66.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.1 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 3700 MHz

Impedance, transformed to feed point	46.0 Ω + 0.1 jΩ
Return Loss	- 27.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.131 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 22.11.2021

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3700 MHz; Type: D3700V2; Serial: D3700V2 - SN:1105

Communication System: UID 0 - CW; Frequency: 3700 MHz
Medium parameters used: f = 3700 MHz; σ = 3.10 S/m; ε_r = 37.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

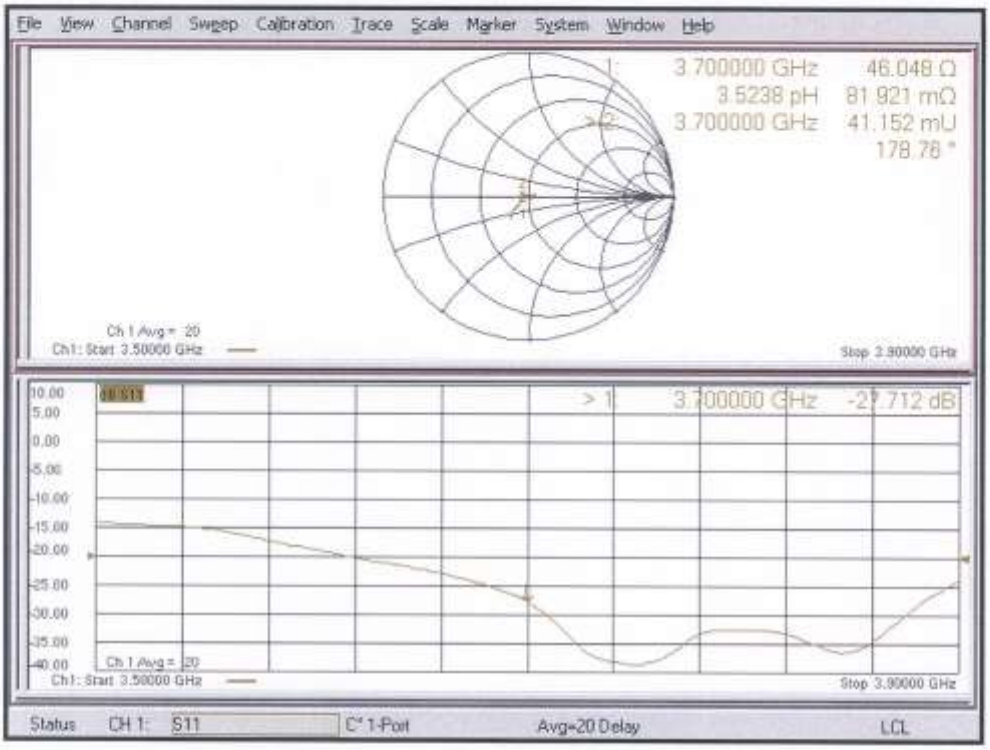
DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(7.73, 7.73, 7.73) @ 3700 MHz; Calibrated: 30.12.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 01.11.2021
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm 3700/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.84 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 18.4 W/kg
SAR(1 g) = 6.64 W/kg; SAR(10 g) = 2.41 W/kg
Smallest distance from peaks to all points 3 dB below = 8 mm
Ratio of SAR at M2 to SAR at M1 = 74.1%
Maximum value of SAR (measured) = 12.7 W/kg

0 dB = 12.7 W/kg = 11.04 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)** Certificate No: **D3900V2-1086_May22**

CALIBRATION CERTIFICATE

Object D3900V2 - SN:1086

Calibration procedure(s) QA CAL-22.v6
Calibration Procedure for SAR Validation Sources between 3-10 GHz

Calibration date: May 25, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 3503	08-Mar-22 (No. EX3-3503_Mar22)	Mar-23
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: May 25, 2022

	작 당 자	확 인 자
결		
재	01/박정훈 2022.06.16	05/허성재 2022.06.16

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	37.5	3.32 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	3.28 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.89 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**68.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.9 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	45.4 Ω - 5.9 jΩ
Return Loss	- 22.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.099 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 25.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

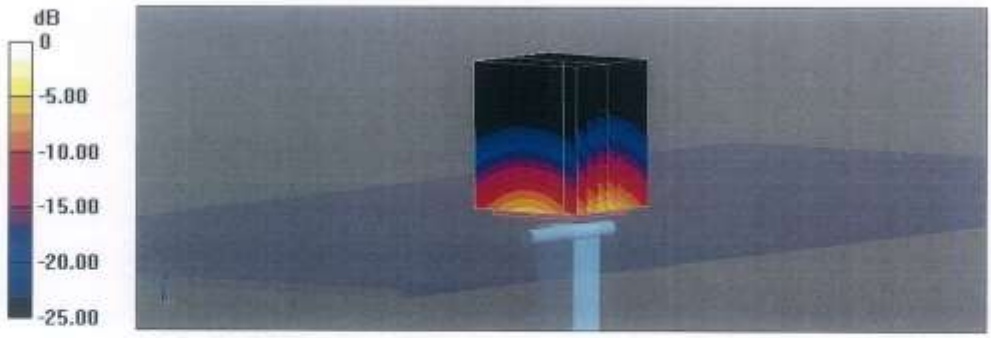
DUT: Dipole 3900 MHz; Type: D3900V2; Serial: D3900V2 - SN: 1086

Communication System: UID 0 - CW; Frequency: 3900 MHz
Medium parameters used: f = 3900 MHz; σ = 3.28 S/m; ε_r = 37.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

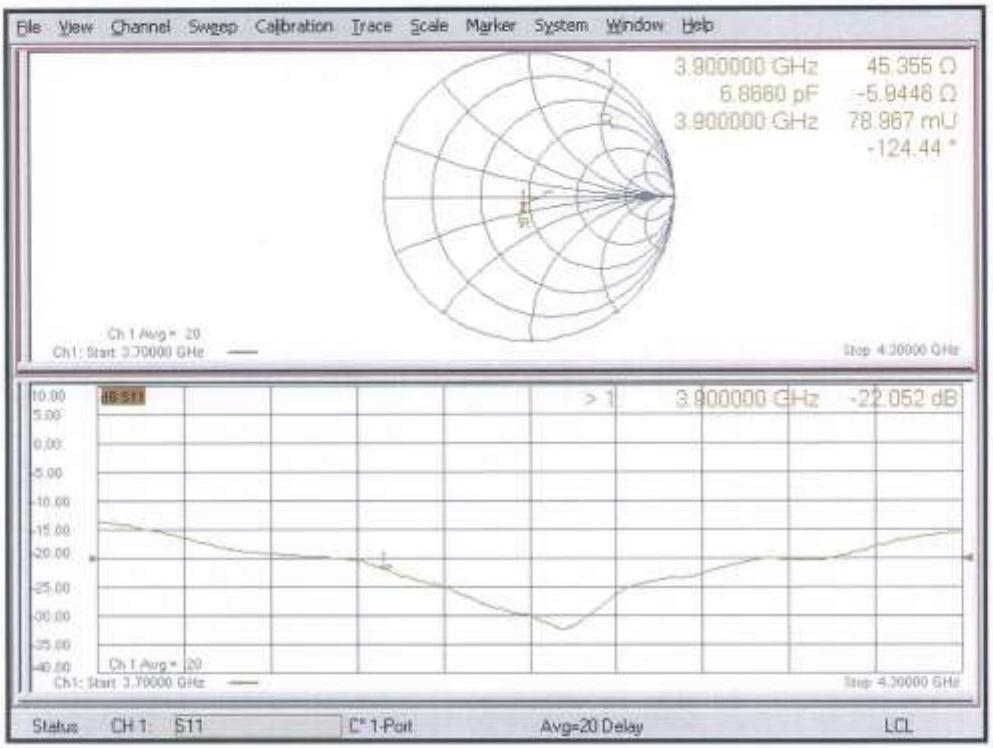
- Probe: EX3DV4 - SN3503; ConvF(7.39, 7.39, 7.39) @ 3900 MHz; Calibrated: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm, f=3900MHz/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.65 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(1 g) = 6.89 W/kg; SAR(10 g) = 2.40 W/kg
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 73.5%
Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.36 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D5GHzV2-1253_May22

CALIBRATION CERTIFICATE

	담당자	확인자
결재	김 기 남	
	2022.6.20	2022.6.20

Object D5GHzV2 - SN:1253

Calibration procedure(s) QA CAL-22.v6
Calibration Procedure for SAR Validation Sources between 3-10 GHz

Calibration date: May 31, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 3503	08-Mar-22 (No. EX3-3503_Mar22)	Mar-23
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Joanna Lleshaj	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: June 3, 2022

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.9 ± 6 %	4.52 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.9 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	4.87 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.5 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.2 ± 6 %	5.02 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**79.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.6 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	49.5 Ω - 3.2 jΩ
Return Loss	- 29.8 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	52.2 Ω + 3.1 jΩ
Return Loss	- 28.5 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	53.6 Ω + 2.9 jΩ
Return Loss	- 27.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 31.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1253

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.52 S/m; ε_r = 34.9; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.87 S/m; ε_r = 34.4; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.02 S/m; ε_r = 34.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

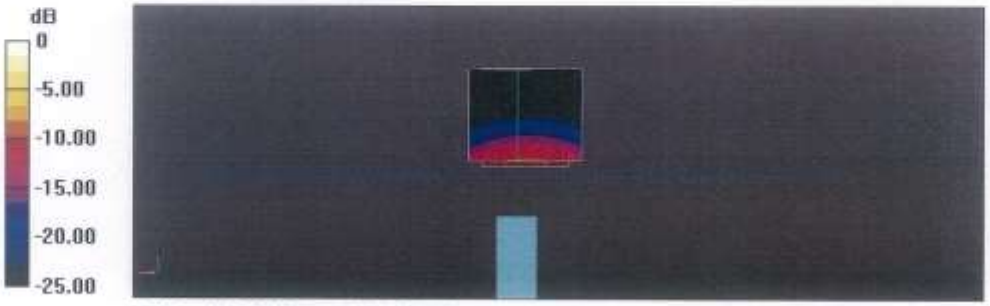
DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.5, 5.5, 5.5) @ 5250 MHz, ConvF(5.1, 5.1, 5.1) @ 5600 MHz, ConvF(5.08, 5.08, 5.08) @ 5750 MHz; Calibrated: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.61 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 28.5 W/kg
SAR(1 g) = 8.10 W/kg; SAR(10 g) = 2.31 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 69.6%
Maximum value of SAR (measured) = 18.4 W/kg

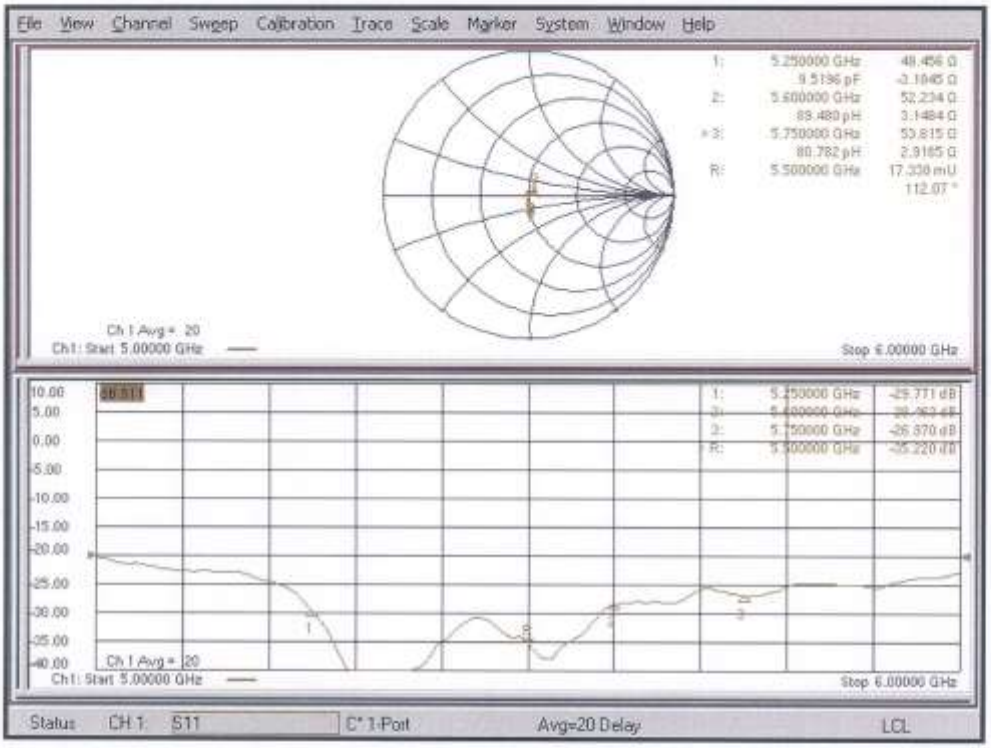
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.75 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 31.2 W/kg
SAR(1 g) = 8.28 W/kg; SAR(10 g) = 2.37 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.7%
Maximum value of SAR (measured) = 19.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.51 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 32.3 W/kg
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.29 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 65.3%
Maximum value of SAR (measured) = 19.2 W/kg



0 dB = 19.7 W/kg = 12.94 dBW/kg

Impedance Measurement Plot for Head TSL



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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D5GHzV2-1107_Jul22

CALIBRATION CERTIFICATE

Object D5GHzV2 - SN:1107

Calibration procedure(s) QA CAL-22.v6
Calibration Procedure for SAR Validation Sources between 3-10 GHz

Calibration date: July 19, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 3503	08-Mar-22 (No. EX3-3503_Mar22)	Mar-23
DAE4	SN: 601	02-May-22 (No. DAE4-601_May22)	May-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Jeffrey Katzman	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: July 25, 2022

결재	담당자	확인자
	DL / 박경원 2022.08.10	CO / 최윤석 2022.08.10

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5800 MHz ± 1 MHz	

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.0 ± 6 %	5.10 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.20 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.32 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.0 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.6 Ω - 0.7 jΩ
Return Loss	- 25.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 19.07.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1107

Communication System: UID 0 - CW; Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 5.1 S/m; ε_r = 34; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

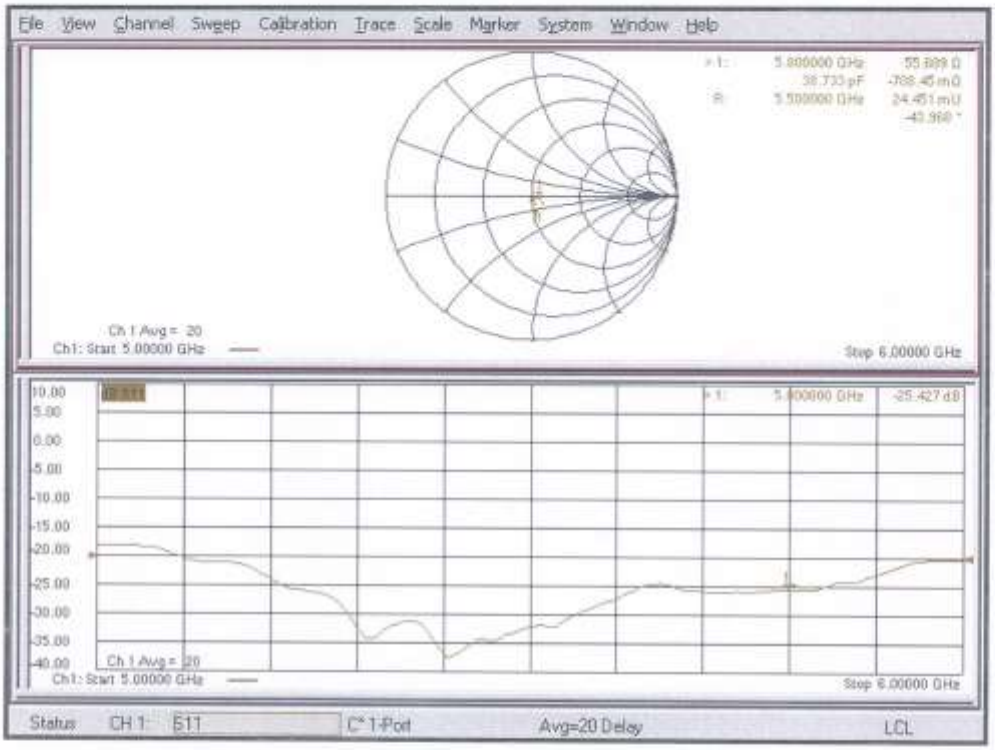
DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.01, 5.01, 5.01) @ 5800 MHz; Calibrated: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.04 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 8.2 W/kg; SAR(10 g) = 2.32 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 65.3%
Maximum value of SAR (measured) = 19.2 W/kg

0 dB = 19.2 W/kg = 12.83 dBW/kg

Impedance Measurement Plot for Head TSL



Appendix H. – Power reduction verification

Per the May 2017 TCBC Workshop notes, demonstration of proper functioning of the power reduction mechanism is required to support the corresponding SAR Configurations.

The verification process was divided into two parts:

1) Evaluation of output power levels for individual triggering mechanism

2) Evaluation of the triggering distances for proximity-based sensors.

1. Power Reduction Verification for Main Ant

The Power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and output power was monitored. The Power measurements were conformed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.
2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.
3. Step 1 and 2 were repeated for all individual power reduction mechanism and combinations thereof. For the combination cases, one mechanism was switched to a “triggered” state at a time; powers were conformed to be within tolerance after each additional mechanism was activated.

Main Antenna Verification Summary

Mechanism(s)	Mode/Band	Device State Index		
		Un-triggered (Max Power)	Triggered (Reduced Power)	Triggered (Reduced Power)
Grip	GSM/GPRS 1900	0	1	
Grip	WCDMA B2	0	1	
Grip	WCDMA B4	0	1	
Grip	LTE Band 2	0	1	
Grip	LTE Band 4	0	1	
Grip	LTE Band 25	0	1	
Grip	LTE Band 41(PC3)	0	1	
Grip	LTE Band 41(PC2)	0	1	
Grip	LTE Band 66	0	1	
Grip	Sub 6 Band n2	0	1	
Grip	Sub 6 Band n25	0	1	
Grip	Sub 6 Band n66	0	1	
Hotspot On	GSM/GPRS 1900	0	3	
Hotspot On	WCDMA B2	0	3	
Hotspot On	WCDMA B4	0	3	
Hotspot On	LTE Band 2	0	3	
Hotspot On	LTE Band 4	0	3	
Hotspot On	LTE Band 25	0	3	
Hotspot On	LTE Band 41(PC3)	0	3	
Hotspot On	LTE Band 41(PC2)	0	3	
Hotspot On	LTE Band 66	0	3	
Hotspot On	Sub 6 Band n2	0	3	
Hotspot On	Sub 6 Band n25	0	3	
Hotspot On	Sub 6 Band n41(Sub2)	0	3	
Hotspot On	Sub 6 Band n66	0	3	
Hotspot On	Sub 6 Band n77(Sub2)	0	3	
Hotspot On, Then Grip	GSM/GPRS 1900	0	3	3
Hotspot On, Then Grip	WCDMA B2	0	3	3
Hotspot On, Then Grip	WCDMA B4	0	3	3
Hotspot On, Then Grip	LTE Band 2	0	3	3
Hotspot On, Then Grip	LTE Band 4	0	3	3
Hotspot On, Then Grip	LTE Band 25	0	3	3
Hotspot On, Then Grip	LTE Band 41(PC3)	0	3	3
Hotspot On, Then Grip	LTE Band 41(PC2)	0	3	3
Hotspot On, Then Grip	LTE Band 66	0	3	3
Hotspot On, Then Grip	Sub 6 Band n2	0	3	3
Hotspot On, Then Grip	Sub 6 Band n25	0	3	3
Hotspot On, Then Grip	Sub 6 Band n41(Sub2)	0	3	3
Hotspot On, Then Grip	Sub 6 Band n66	0	3	3
Hotspot On, Then Grip	Sub 6 Band n77(Sub2)	0	3	3
Grip, then Hotspot On	GSM/GPRS/EDGE 1900	0	1	3
Grip, then Hotspot On	WCDMA B2	0	1	3
Grip, then Hotspot On	WCDMA B4	0	1	3
Grip, then Hotspot On	LTE Band 2	0	1	3
Grip, then Hotspot On	LTE Band 4	0	1	3

Grip, then Hotspot On	LTE Band 25	0	1	3
Grip, then Hotspot On	LTE Band 41(PC3)	0	1	3
Grip, then Hotspot On	LTE Band 41(PC2)	0	1	3
Grip, then Hotspot On	LTE Band 66	0	1	3
Grip, then Hotspot On	Sub 6 Band n2	0	1	3
Grip, then Hotspot On	Sub 6 Band n25	0	1	3
Grip, then Hotspot On	Sub 6 Band n66	0	1	3

*Note: This device uses different Device State Indices (DSI) to configure different time averaged pow er levels based on certain exposure scenarios. For this device, DSI = 1 represents the case when the grip sensor is active, DSI = 2 represents the case where the device is held to ear, and DSI = 3 represents the case when hotspot mode is active,DSI = 4 represents thecase when ear-jack is inserted and DSI = 0 is configured at max power when the device cannot detect the use condition .

when Hotspot Mode (DSI=3) Grip sensor (DSI=1) and Ear-jack mode(DSI=4) are triggered at the same time, DSI=3 (Hotspot) takes more higher priority.the Priority for power reduction was given in the order of hotspot (DSI=3) and earjack.(DSI=4), Grip (DSI=1).

1.1. Distance Verification Procedure

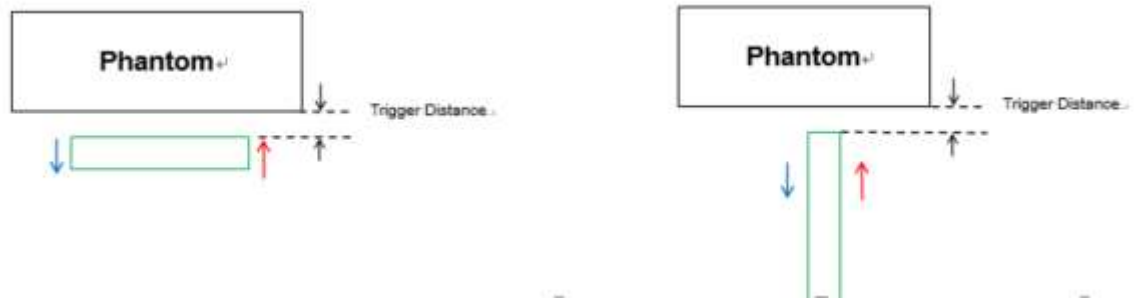
Procedures for determining proximity sensor triggering distances

(KDB 616217D04v01r02§6.2)

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.
2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 .Each applicable test position was evaluated. The distance were conformed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
3. Step 1 and 2 were repeated for the relevant modes, as appropriate
4. Steps1 through 3 were repeated for all distance-based power reduction mechanisms.

For detailed measurement conducted power results, please refer to the Section .11



Proximity Sensor Trigger Distance Assessment KDB 616217 D04§6.2 (Rear / Front / Bottom side)

LEGEND

→ Direction of DUT travel for determination of power reduction triggering point

→ Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance - Rear		Trigger distance - Front		Trigger distance - Bottom	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
1800MHz Tissue	9	10	7	8	12	13
1900MHz Tissue	9	10	7	8	12	13
2300MHz Tissue	9	10	7	8	12	13
2600MHz Tissue	9	10	7	8	12	13

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Mode	Distance to DUT Output power (dBm)									
	14[mm]	13[mm]	12[mm]	11[mm]	10[mm]	9[mm]	8[mm]	7[mm]	6[mm]	5[mm]
GSM1900 Voice	29.77	29.71	29.69	29.82	29.71	27.27	27.10	27.15	27.11	27.20
GSM1900 /GPRS 1Tx	29.72	29.82	29.67	29.86	29.67	27.30	27.14	27.18	27.30	27.24
GSM1900 /GPRS 2Tx	27.43	27.38	27.37	27.50	27.46	25.06	25.16	25.02	25.12	25.09
GSM1900 /GPRS 3Tx	26.02	26.00	26.08	26.00	26.13	22.56	22.69	22.54	22.68	22.64
GSM1900 /GPRS 4Tx	24.29	24.29	24.34	24.32	24.20	21.00	21.09	21.15	21.14	21.02
WCDMA B2	23.22	23.37	23.30	23.26	23.20	20.36	20.27	20.29	20.38	20.34
WCDMA B4	23.50	23.46	23.46	23.56	23.45	20.58	20.63	20.60	20.63	20.49
LTE Band 2	22.93	22.96	22.92	22.85	22.82	18.82	18.81	18.85	18.81	18.79
LTE Band 4	22.72	22.88	22.77	22.90	22.73	19.75	19.70	19.73	19.70	19.75
LTE Band 25	22.71	22.71	22.73	22.81	22.90	18.38	18.39	18.48	18.31	18.32
LTE Band 41(Class 3)	24.87	24.73	24.70	24.85	24.69	22.95	22.91	22.98	22.89	22.94
LTE Band 41(Class 2)	26.15	26.28	26.30	26.29	26.16	24.33	24.21	24.27	24.36	24.23
LTE Band 66	23.05	22.97	23.08	23.17	23.02	20.01	19.95	20.05	20.05	20.08
Sub 6 Band n2	22.49	22.47	22.63	22.47	22.58	19.57	19.57	19.50	19.61	19.60
Sub 6 Band n25	22.78	22.80	22.89	22.88	22.84	19.78	19.79	19.84	19.92	19.94
Sub 6 Band n66	23.22	23.37	23.30	23.26	23.20	20.36	20.27	20.29	20.38	20.34

Rear side – EUT Moving away (Release) from the Phantom

Mode	Distance to DUT Output power (dBm)									
	6[mm]	7[mm]	8[mm]	9[mm]	10[mm]	11[mm]	12[mm]	13[mm]	14mm]	15[mm]
GSM1900 Voice	27.21	27.15	27.21	27.17	27.15	29.79	29.70	29.78	29.79	29.81
GSM1900 /GPRS 1Tx	27.28	27.22	27.30	27.11	27.11	29.68	29.68	29.78	29.68	29.84
GSM1900 /GPRS 2Tx	25.06	25.13	25.13	24.99	25.13	27.50	27.42	27.39	27.51	27.51
GSM1900 /GPRS 3Tx	22.64	22.67	22.63	22.53	22.57	25.97	25.97	26.02	26.02	25.93
GSM1900 /GPRS 4Tx	21.10	21.04	21.10	21.08	21.17	24.18	24.35	24.29	24.32	24.35
WCDMA B2	20.28	20.39	20.35	20.36	20.30	23.27	23.39	23.30	23.36	23.28
WCDMA B4	20.49	20.60	20.49	20.48	20.54	23.50	23.41	23.54	23.55	23.52
LTE Band 2	18.79	18.84	18.67	18.73	18.85	22.97	22.84	22.92	22.97	22.82
LTE Band 4	19.67	19.72	19.65	19.74	19.63	22.84	22.74	22.77	22.79	22.82
LTE Band 25	18.42	18.33	18.30	18.44	18.43	22.88	22.75	22.77	22.79	22.71
LTE Band 41(Class 3)	22.90	22.80	22.99	22.86	22.98	24.80	24.68	24.85	24.72	24.80
LTE Band 41(Class 2)	24.29	24.20	24.20	24.39	24.35	26.30	26.18	26.26	26.28	26.35
LTE Band 66	19.88	20.07	19.99	19.88	19.99	23.00	23.03	23.11	23.04	23.12
Sub 6 Band n2	19.57	19.62	19.54	19.63	19.50	22.65	22.47	22.65	22.52	22.65
Sub 6 Band n25	19.96	19.88	19.92	19.79	19.81	22.82	22.89	22.74	22.71	22.71
Sub 6 Band n66	20.28	20.39	20.35	20.36	20.30	23.27	23.39	23.30	23.36	23.28

Based on the most conservative measured triggering distance of 9mm, additional Phablet SAR measurements were required at 8mm from rear side for the above modes

Front side – EUT Moving toward (trigger) to the Phantom

Mode	Distance to DUT Output power (dBm)									
	12[mm]	11[mm]	10[mm]	9[mm]	8[mm]	7[mm]	6[mm]	5[mm]	4[mm]	3[mm]
GSM1900 Voice	29.70	29.65	29.62	29.81	29.64	27.25	27.04	27.12	27.04	27.18
GSM1900 /GPRS 1Tx	29.71	29.82	29.61	29.81	29.63	27.25	27.09	27.15	27.25	27.17
GSM1900 /GPRS 2Tx	27.36	27.35	27.31	27.48	27.40	25.01	25.08	24.96	25.09	25.05
GSM1900 /GPRS 3Tx	25.95	25.94	26.02	25.93	26.11	22.54	22.61	22.46	22.62	22.63
GSM1900 /GPRS 4Tx	24.23	24.25	24.32	24.28	24.18	20.96	21.02	21.14	21.08	20.95
WCDMA B2	23.19	23.30	23.28	23.25	23.13	20.35	20.21	20.28	20.34	20.30
WCDMA B4	23.47	23.40	23.39	23.53	23.39	20.55	20.59	20.55	20.60	20.43
LTE Band 2	22.91	22.88	22.88	22.78	22.76	18.78	18.80	18.82	18.74	18.77
LTE Band 4	22.70	22.86	22.73	22.85	22.65	19.67	19.69	19.72	19.69	19.72
LTE Band 25	22.67	22.71	22.69	22.76	22.83	18.33	18.32	18.41	18.25	18.26
LTE Band 41(Class 3)	24.77	24.82	24.70	24.73	24.70	22.95	22.97	22.93	22.97	22.97
LTE Band 41(Class 2)	26.32	26.28	26.26	26.34	26.31	24.21	24.25	24.33	24.22	24.34
LTE Band 66	23.03	22.95	23.08	23.12	22.97	19.99	19.88	20.04	20.02	20.02
Sub 6 Band n2	22.45	22.45	22.59	22.46	22.58	19.50	19.52	19.44	19.54	19.57
Sub 6 Band n25	22.72	22.91	22.86	22.86	22.91	19.91	19.85	19.86	19.96	19.78
Sub 6 Band n66	23.17	23.31	23.27	23.24	23.18	20.35	20.23	20.24	20.37	20.28

Front side – EUT Moving away (Release) from the Phantom

Mode	Distance to DUT Output power (dBm)									
	4[mm]	5[mm]	6[mm]	7[mm]	8[mm]	9[mm]	10[mm]	11[mm]	12[mm]	13[mm]
GSM1900 Voice	27.19	27.09	27.15	27.12	27.09	29.78	29.66	29.73	29.77	29.80
GSM1900 /GPRS 1Tx	27.22	27.17	27.26	27.08	27.06	29.60	29.62	29.72	29.61	29.82
GSM1900 /GPRS 2Tx	25.05	25.06	25.10	24.95	25.06	27.46	27.41	27.36	27.44	27.47
GSM1900 /GPRS 3Tx	22.62	22.66	22.63	22.51	22.56	25.90	25.92	25.98	25.97	25.88
GSM1900 /GPRS 4Tx	21.05	21.02	21.08	21.05	21.15	24.16	24.28	24.29	24.32	24.28
WCDMA B2	20.25	20.39	20.34	20.36	20.22	23.23	23.33	23.24	23.36	23.24
WCDMA B4	20.41	20.58	20.49	20.45	20.52	23.47	23.39	23.49	23.51	23.46
LTE Band 2	18.77	18.82	18.60	18.66	18.84	22.94	22.77	22.86	22.91	22.77
LTE Band 4	19.59	19.71	19.64	19.73	19.58	22.78	22.66	22.71	22.75	22.74
LTE Band 25	18.35	18.27	18.27	18.36	18.39	22.84	22.72	22.76	22.71	22.69
LTE Band 41(Class 3)	22.96	22.90	22.84	22.93	22.93	24.72	24.78	24.84	24.68	24.85
LTE Band 41(Class 2)	24.39	24.33	24.34	24.20	24.25	26.32	26.17	26.29	26.27	26.20
LTE Band 66	19.83	19.99	19.92	19.83	19.93	22.98	23.01	23.04	23.02	23.05
Sub 6 Band n2	19.51	19.56	19.49	19.55	19.48	22.59	22.44	22.63	22.51	22.64
Sub 6 Band n25	19.95	19.80	19.93	19.83	19.78	22.81	22.76	22.74	22.83	22.77
Sub 6 Band n66	20.22	20.36	20.35	20.30	20.22	23.20	23.38	23.28	23.28	23.28

Based on the most conservative measured triggering distance of 7mm, additional Phablet SAR measurements were required at 6mm from Front side for the above modes

Bottom side – EUT Moving toward (trigger) to the Phantom

Mode	Distance to DUT Output power (dBm)									
	17[mm]	16[mm]	15[mm]	14[mm]	13[mm]	12[mm]	11[mm]	10[mm]	9[mm]	8[mm]
GSM1900 Voice	29.66	29.62	29.61	29.78	29.61	27.23	27.00	27.11	27.04	27.11
GSM1900 /GPRS 1Tx	29.71	29.79	29.57	29.75	29.58	27.23	27.03	27.12	27.25	27.14
GSM1900 /GPRS 2Tx	27.34	27.35	27.29	27.41	27.37	25.00	25.00	24.90	25.04	25.00
GSM1900 /GPRS 3Tx	25.93	25.91	25.94	25.88	26.09	22.49	22.59	22.43	22.54	22.61
GSM1900 /GPRS 4Tx	24.20	24.20	24.26	24.20	24.13	20.94	20.97	21.11	21.07	20.92
WCDMA B2	23.12	23.29	23.26	23.18	23.10	20.29	20.14	20.22	20.32	20.22
WCDMA B4	23.40	23.39	23.37	23.47	23.31	20.52	20.55	20.54	20.58	20.36
LTE Band 2	22.84	22.82	22.83	22.76	22.71	18.77	18.78	18.75	18.69	18.71
LTE Band 4	22.65	22.86	22.73	22.85	22.65	19.62	19.62	19.71	19.65	19.66
LTE Band 25	22.67	22.65	22.67	22.72	22.76	18.26	18.28	18.40	18.20	18.18
LTE Band 41(Class 3)	24.70	24.67	24.87	24.85	24.80	22.92	22.93	22.92	22.90	22.94
LTE Band 41(Class 2)	26.18	26.22	26.29	26.16	26.16	24.40	24.21	24.30	24.20	24.23
LTE Band 66	22.97	22.87	23.06	23.05	22.94	19.93	19.87	20.01	19.99	20.01
Sub 6 Band n2	22.38	22.44	22.55	22.42	22.57	19.49	19.49	19.41	19.47	19.51
Sub 6 Band n25	22.87	22.71	22.79	22.72	22.72	19.94	19.86	19.85	19.79	19.97
Sub 6 Band n66	23.12	23.29	23.23	23.19	23.12	20.27	20.23	20.17	20.36	20.20

Bottom side – EUT Moving away (Release) from the Phantom

Mode	Distance to DUT Output power (dBm)									
	9[mm]	10[mm]	11[mm]	12[mm]	13[mm]	14[mm]	15[mm]	16[mm]	17[mm]	18[mm]
GSM1900 Voice	27.14	27.06	27.11	27.07	27.03	29.72	29.65	29.70	29.73	29.76
GSM1900 /GPRS 1Tx	27.16	27.13	27.23	27.05	27.05	29.60	29.60	29.69	29.56	29.77
GSM1900 /GPRS 2Tx	25.00	25.04	25.09	24.90	25.02	27.42	27.41	27.35	27.42	27.47
GSM1900 /GPRS 3Tx	22.55	22.63	22.57	22.43	22.53	25.90	25.87	25.97	25.93	25.81
GSM1900 /GPRS 4Tx	21.05	20.98	21.07	20.99	21.14	24.12	24.23	24.24	24.28	24.26
WCDMA B2	20.21	20.34	20.33	20.32	20.14	23.16	23.27	23.18	23.33	23.18
WCDMA B4	20.39	20.52	20.48	20.39	20.51	23.44	23.32	23.46	23.46	23.44
LTE Band 2	18.74	18.76	18.60	18.66	18.81	22.91	22.76	22.82	22.85	22.70
LTE Band 4	19.54	19.63	19.60	19.73	19.53	22.77	22.63	22.64	22.71	22.68
LTE Band 25	18.31	18.21	18.23	18.33	18.38	22.82	22.70	22.74	22.70	22.69
LTE Band 41(Class 3)	22.92	22.94	22.98	22.83	22.85	24.86	24.68	24.82	24.71	24.68
LTE Band 41(Class 2)	24.40	24.23	24.28	24.27	24.26	26.17	26.19	26.27	26.17	26.27
LTE Band 66	19.81	19.95	19.90	19.77	19.88	22.94	22.94	23.00	22.99	23.01
Sub 6 Band n2	19.48	19.54	19.48	19.49	19.45	22.54	22.37	22.57	22.50	22.60
Sub 6 Band n25	19.91	19.88	19.95	19.89	19.81	22.89	22.87	22.87	22.74	22.85
Sub 6 Band n66	20.17	20.28	20.32	20.28	20.15	23.19	23.30	23.27	23.25	23.24

Based on the most conservative measured triggering distance of 12mm, additional Phablet SAR measurements were required at 11mm from Bottom side for the above modes

1.2 Proximity Sensor Coverage for SAR measurements

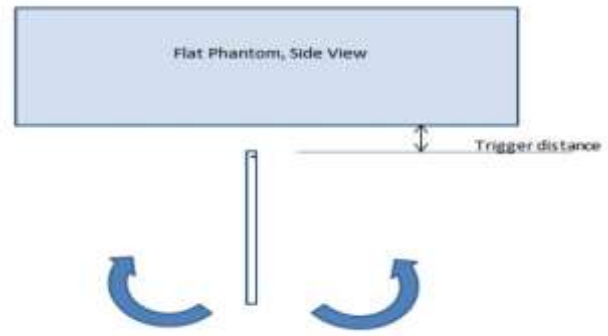
(KDB 616217 D04v01r02§6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

1.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band.The EUT was rotated about Bottom side for angles up to ±45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up±45°.



Proximity sensor tilt angle assessment (Bottom side) KDB 616217 §6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Bottom side)

Tissue	Minimumdistance atwhich power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
1800 MHz Tissue	12 mm	On	On	On	On	On	On	On	On	On	On	On
1900 MHz Tissue	12 mm	On	On	On	On	On	On	On	On	On	On	On
2300 MHz Tissue	12 mm	On	On	On	On	On	On	On	On	On	On	On
2600 MHz Tissue	12 mm	On	On	On	On	On	On	On	On	On	On	On

1.5 Resulting test positions for Phablet SAR measurements

Wireless technologies	Position	§6.2 Triggering Distance [mm]	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for Phablet SAR [mm]
WWAN (GSM1900 /WCDMA B2/B4 /LTE B2/B4/B25 /B41(Class3) /B41(Class2)/B66 /SUB6 n2/n25 /n66)	Rear	9	N/A	N/A	8
	Front	7	N/A	N/A	6
	Bottom	12	N/A	N/A	11

Note:FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in phablet use conditions

2. Power reduction Verification for Sub Antenna 2

This device uses a power reduction mechanism for SAR compliance for operations during voice or VoIP held to ear scenarios.

When a user makes or receives a voice call or VoIP call for Main Antenna the audio of the call is sent through the Receiver at the top of the device will trigger the Power reduction for Sub Antenna 2 (i.e. reducing output power for Head SAR compliance)

Detailed descriptions of the power reduction mechanism are included in the Main operational description document

Condition For Power reduction	Wireless Technologies	Conducted Power[dBm]	
		Un-Triggered (Max Power)	Triggered (Reduced Power)
RCV-on	LTE 4 (ULCA, Upper)	20.16	15.98
RCV-on	NR n41	19.22	17.20
RCV-on	NR n66 (ENDC Upper)	20.87	16.95
RCV-on	NR n77	18.75	15.80

3. Power reduction Verification for WLAN Ant

This device uses a power reduction mechanism for SAR compliance for WLAN operations during voice or VoIP held to ear scenarios.

When a user makes or receives a WLAN voice or WLAN VOIP call for WLAN Ant the audio of the call is sent through the Receiver at the top of the device will trigger the Power reduction for WLAN Ant (i.e. reducing output power for Head SAR compliance)

Detailed descriptions of the power reduction mechanism are included in the Main operational description document

Power Measurement Verification for WLAN

Condition For Power reduction	Wireless Technologies	Conducted Power[dBm]					
		Un-Triggered (Max Power)			Triggered (Reduced Power)		
		Ant1	Ant2	MIMO	Ant1	Ant2	MIMO
RCV-on	2.4GHz 802.11b (Exclude 12/13ch)		17.92	20.38		13.87	16.42
RCV-on	2.4GHz 802.11g (Exclude 12/13ch))		16.80	19.31		13.67	16.10
RCV-on	2.4GHz 802.11n (Exclude 12/13ch)		16.71	19.14		13.61	16.00
RCV-on	2.4GHz Bluetooth DH5	15.86	15.23		12.03	11.43	
RCV-on	2.4GHz Bluetooth 2DH5	13.00	12.61		11.78	11.36	
RCV-on	2.4GHz Bluetooth 3DH5	13.01	12.61		11.77	11.38	
RCV-on	5GHz 802.11a	16.95		19.58	12.92		14.74
RCV-on	5GHz 802.11n 20MHz			19.72			14.70
RCV-on	5GHz 802.11n 40MHz			18.73			15.09
RCV-on	5GHz 802.11ac 20MHz			19.70			14.82
RCV-on	5GHz 802.11ac 40MHz			18.78			14.91
RCV-on	5GHz 802.11ac 80MHz			17.92			15.20
RCV-on	5GHz 802.11ac 160MHz			15.97			15.40

Appendix I. – Down-link CA Power Measurement / 5G NR Call Box Setup

1. LTE Down-link Carrier Aggregation Conducted Powers

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers(CCs) supported by test product implementation. For those configurations required by April 2018 TCBC Workshop notes, conducted power measurements with LTE Carrier Aggregation(CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s)(SCC) on the downlink only.

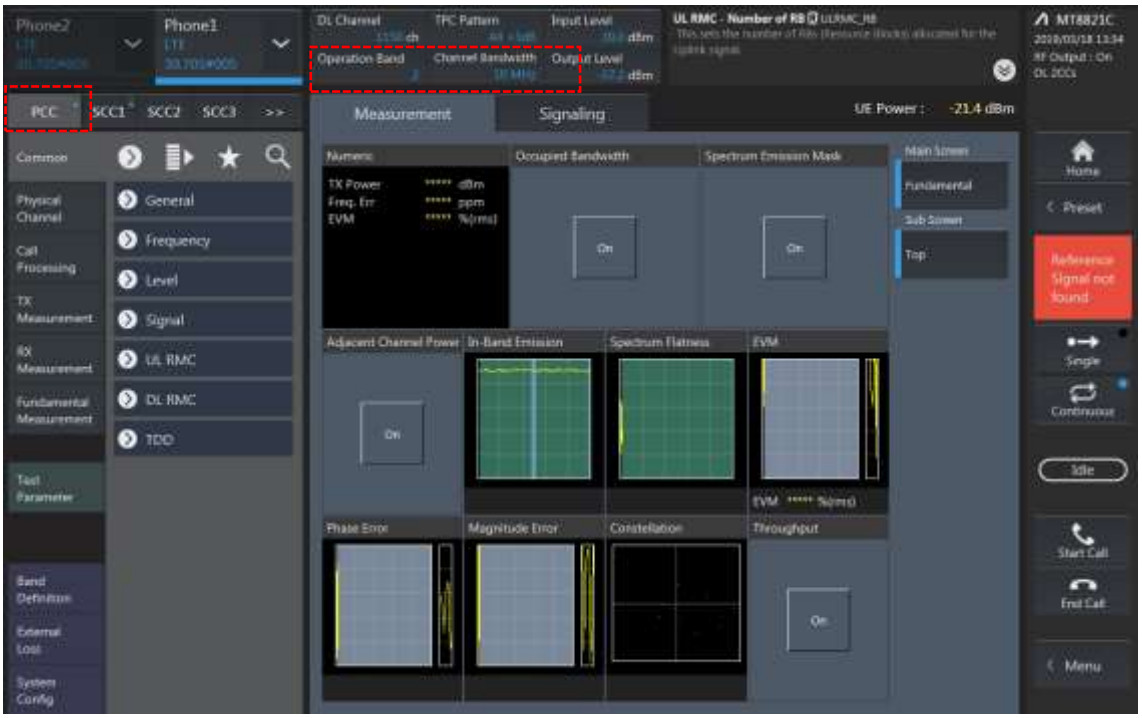
Downlink Carrier aggregation:

1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
3. Per FCC KDB publication 941225 D05A v01r02, Section C)3)b)ii), PCC uplink channel was selected at downlink carrier aggregation combinations. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
4. For continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to multiple of 300kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521.
5. For non-continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
6. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.

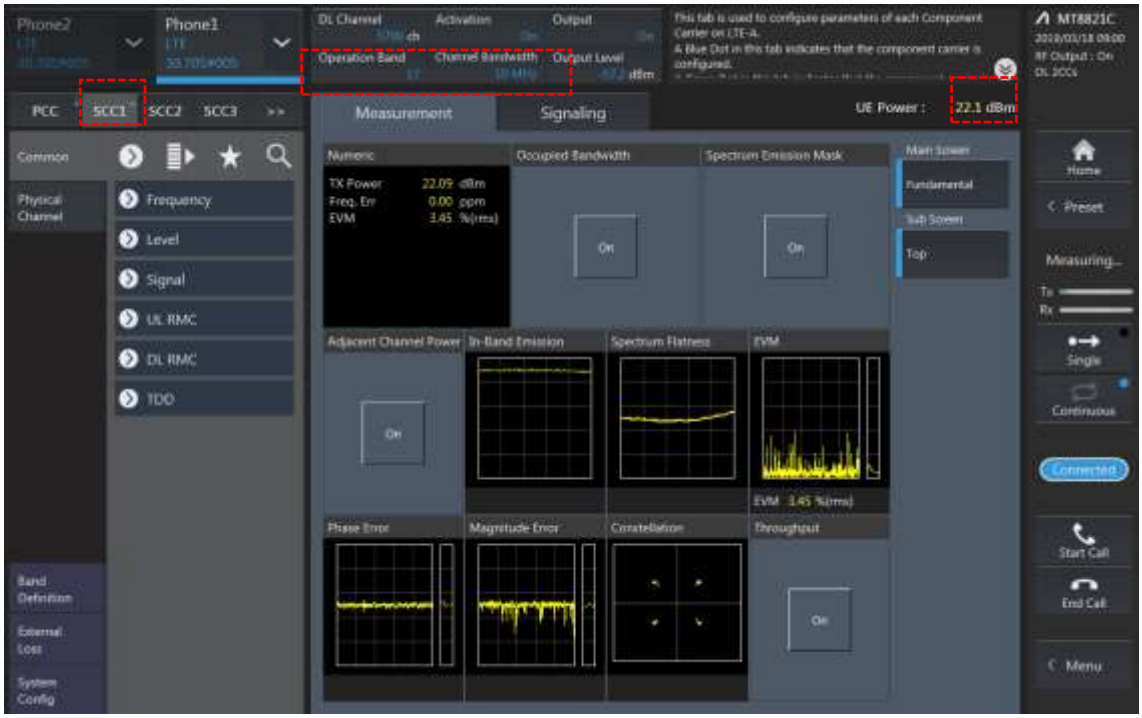
Power Measurement setup

LTE Down Link 2CA Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



SCC Setting : Channel/ RB/ BW/ Modulation and call Connection

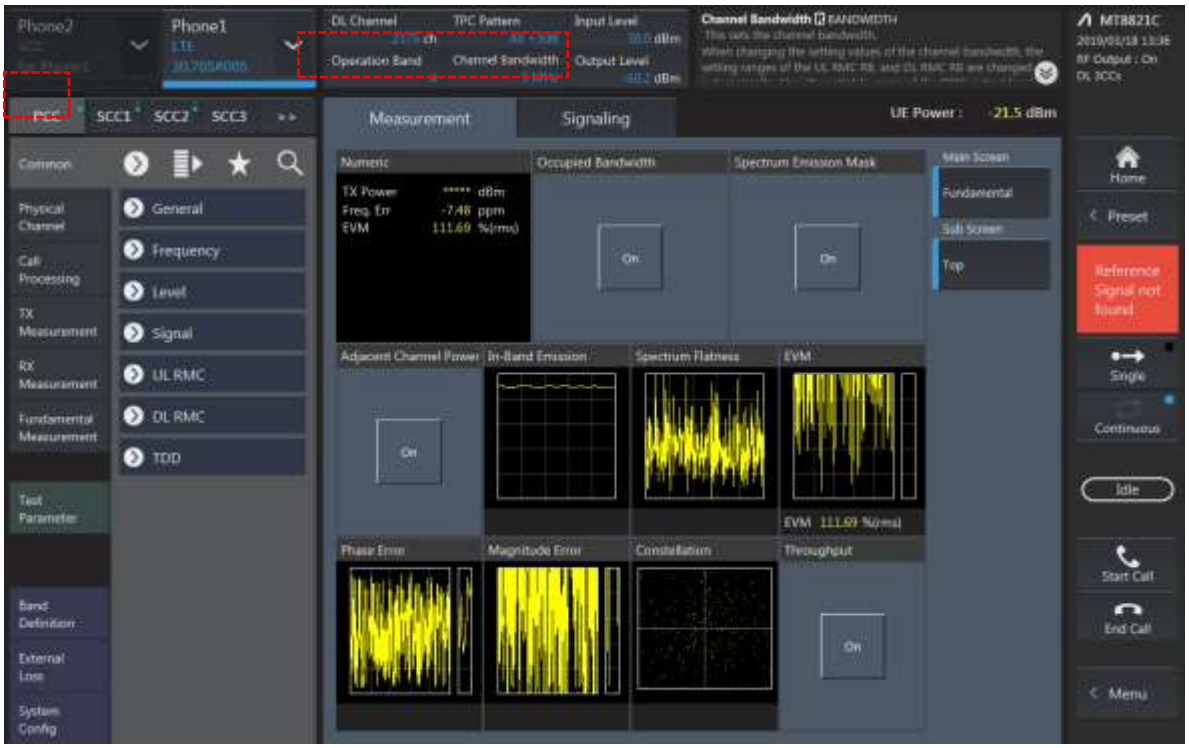


2CA Downlink Carrier aggregation Maximum conducted Powers

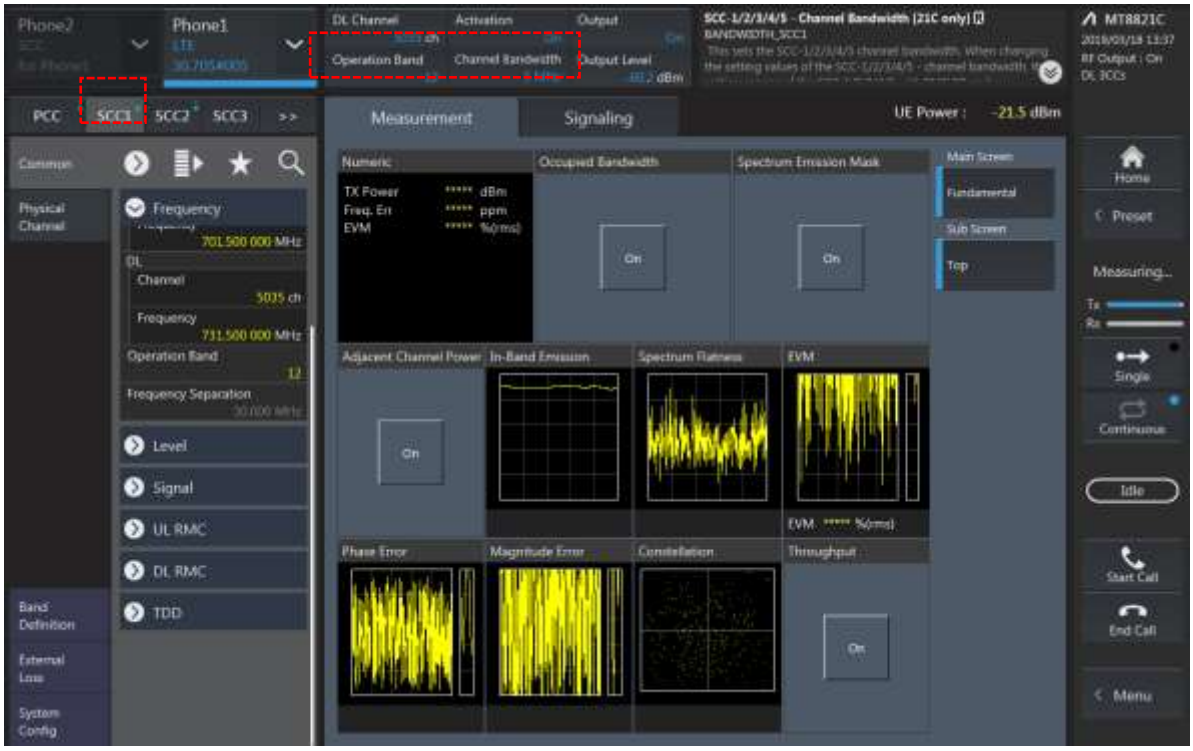
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Delta (2)-(1)
2A-2A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	22.89	22.82	-0.07
2C	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	902	1960.2	22.89	22.84	-0.05
2A-12A(0,1)	2	20	19100	1900	1100	1980	QPSK	1	0	12	10	5095	737.5	22.89	22.85	-0.04
2A-12A(2)	2	5	19175	1907.5	1175	1987.5	QPSK	1	12	12	10	5095	737.5	22.83	22.82	-0.01
2A-12A(2)	2	10	19150	1905	1150	1985	QPSK	1	0	12	10	5095	737.5	22.74	22.66	-0.08
2A-12A(0,1)	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	20	900	1960	23.97	23.90	-0.07
2A-12A(2)	12	10	23095	707.5	5095	737.5	QPSK	1	24	2	10	900	1960	23.97	23.94	-0.03
2A-17A	2	5	19175	1907.5	1175	1987.5	QPSK	1	12	17	10	5790	740	22.83	22.79	-0.04
2A-17A	17	5	23790	710	5790	740	QPSK	1	12	2	10	900	1960	23.84	23.81	-0.03
4A-5A(0,1)	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	5	10	2525	881.5	23.35	23.34	-0.01
4A-5A(0)	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	10	2175	2132.5	24.21	24.18	-0.03
4A-5A(1)	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	20	2175	2132.5	24.21	24.19	-0.02
4A-17A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	17	10	5790	740	23.35	23.33	-0.02
4A-17A	17	5	23790	710	5790	740	QPSK	1	12	4	10	2175	2132.5	23.84	23.78	-0.06
5A-41A	5	5	20625	846.5	2625	891.5	QPSK	1	12	41	20	40620	2593	24.21	24.14	-0.07
66B	66	10	132022	1715	66486	2115	QPSK	1	24	66	10	66585	2124.9	23.25	23.24	-0.01
66C	66	10	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	23.25	23.23	-0.02

LTE Down Link 3CA Call Setup

1) PCC Setting: Channel /RB/BW/Modulation



2) SCC1 Setting : Channel /RB/BW/Modulation



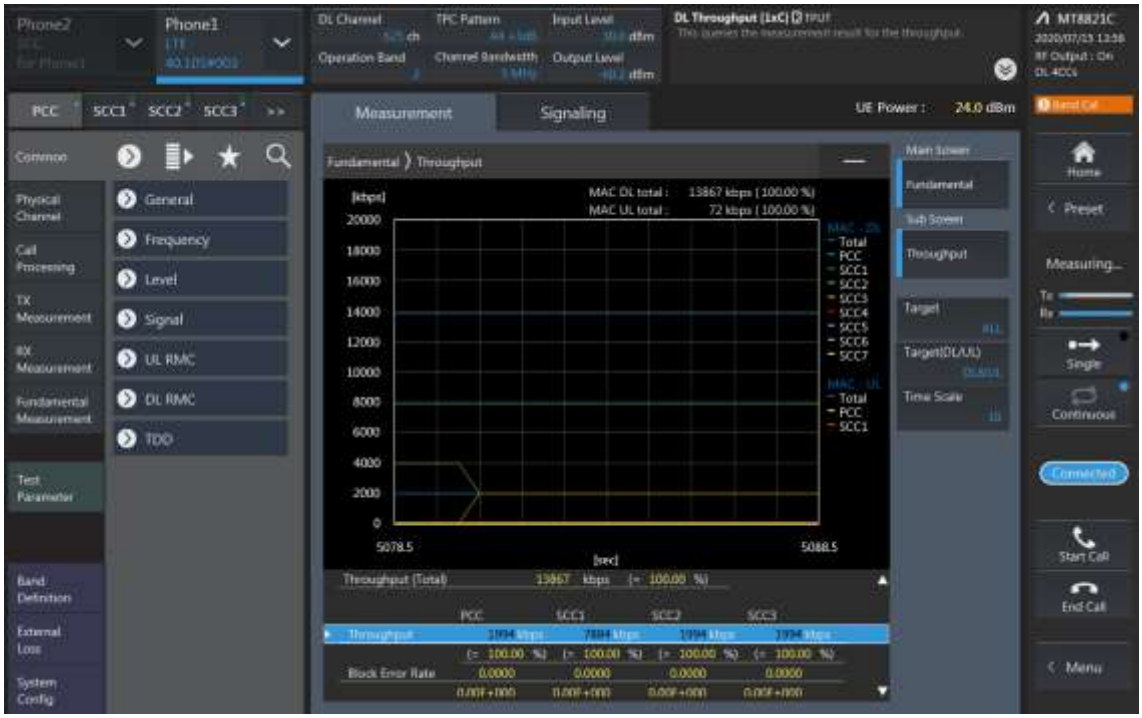
3) SCC2 Setting (Channel /RB/BW/Modulation)and call Connection

3CA Downlink Carrier aggregation Maximum conducted Powers

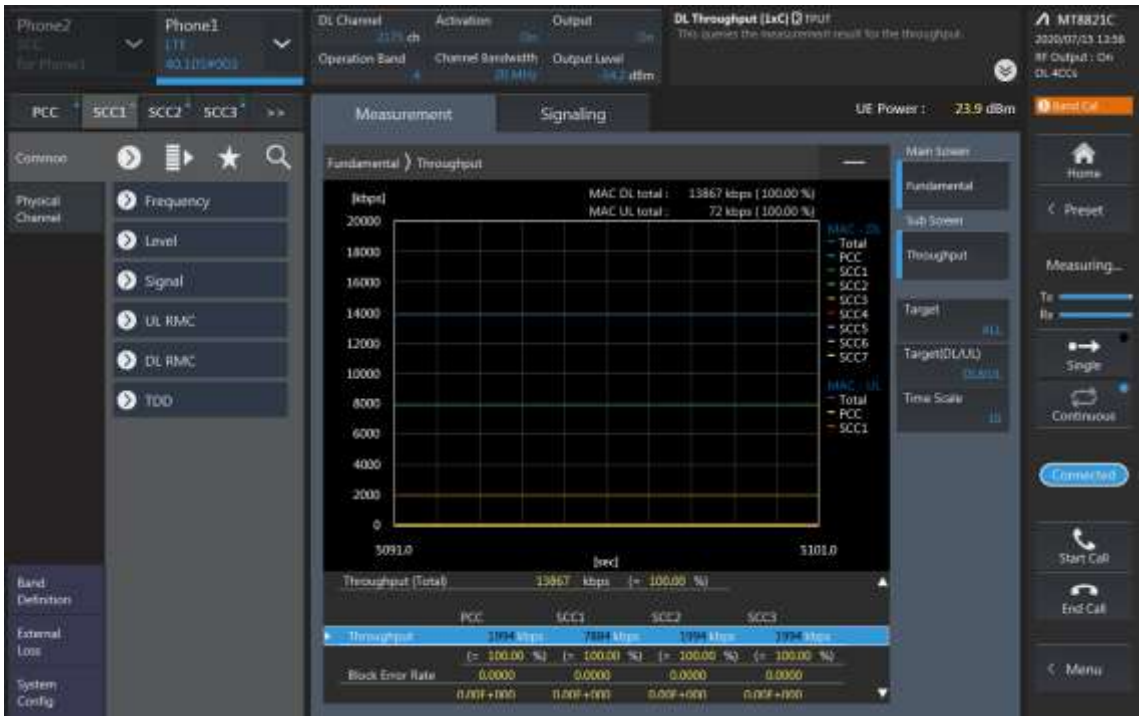
Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Delta (2)-(1)
2A-4A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	22.89	22.85	-0.04
2A-4A-5A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.35	23.32	-0.03
2A-4A-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	24.21	24.14	-0.07
2A-4A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	22.89	22.82	-0.07
2A-4A-13A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.35	23.30	-0.05
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	49	2	20	900	1960	4	20	2175	2132.5	23.50	23.43	-0.07
2A-5A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	22.89	22.83	-0.06
2A-5A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	66	20	66786	2145	24.21	24.20	-0.01
2A-5A-66A	66	10	132022	1715	66486	2115	QPSK	1	24	2	20	900	1960	5	10	2525	881.5	23.25	23.21	-0.04
4A-4A-12A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	4	20	2300	2145	12	10	5095	737.5	23.35	23.32	-0.03
4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	23.97	23.93	-0.04
5A-66A-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	24.21	24.21	0.00
5A-66A-66A	66	10	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	5	10	2525	881.5	23.25	23.20	-0.05
12A-66A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	23.97	23.96	-0.01
12A-66A-66A	66	10	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	12	10	5095	737.5	23.25	23.23	-0.02
26A-41C	26	5	26715	816.5	8715	861.5	QPSK	1	12	41	20	40620	2593	41	20	40818	2612.8	23.86	23.82	-0.04

LTE Down Link 4CA Call Setup

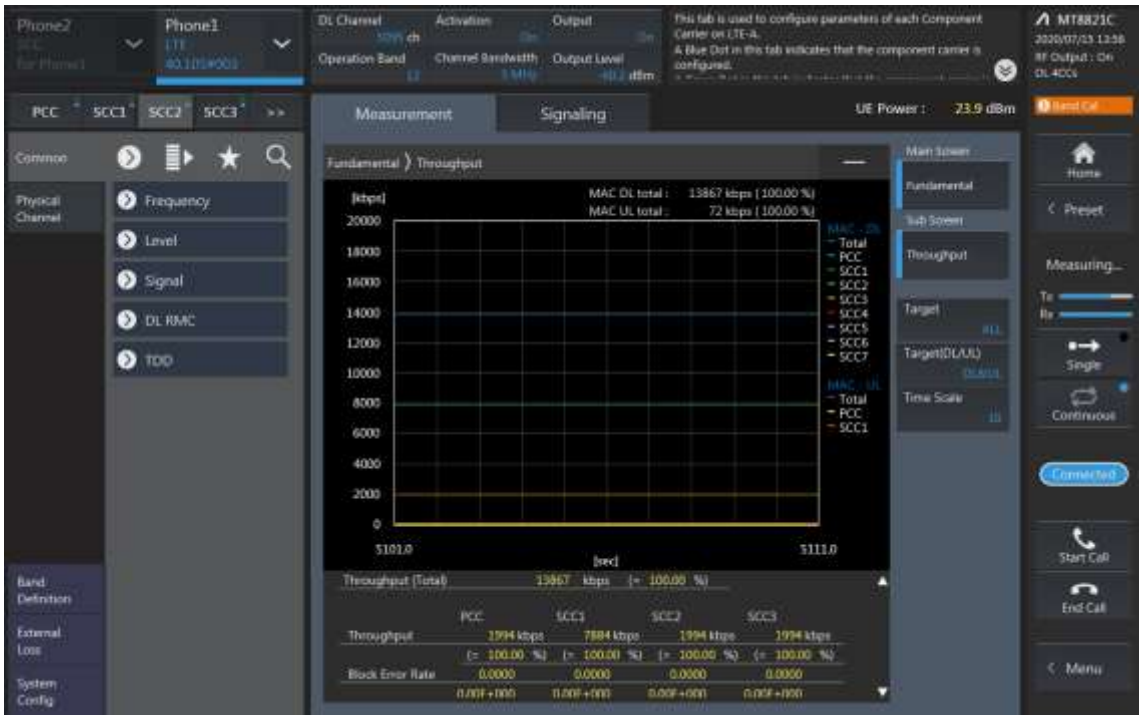
PCC Setting: Channel /RB/BW/Modulation



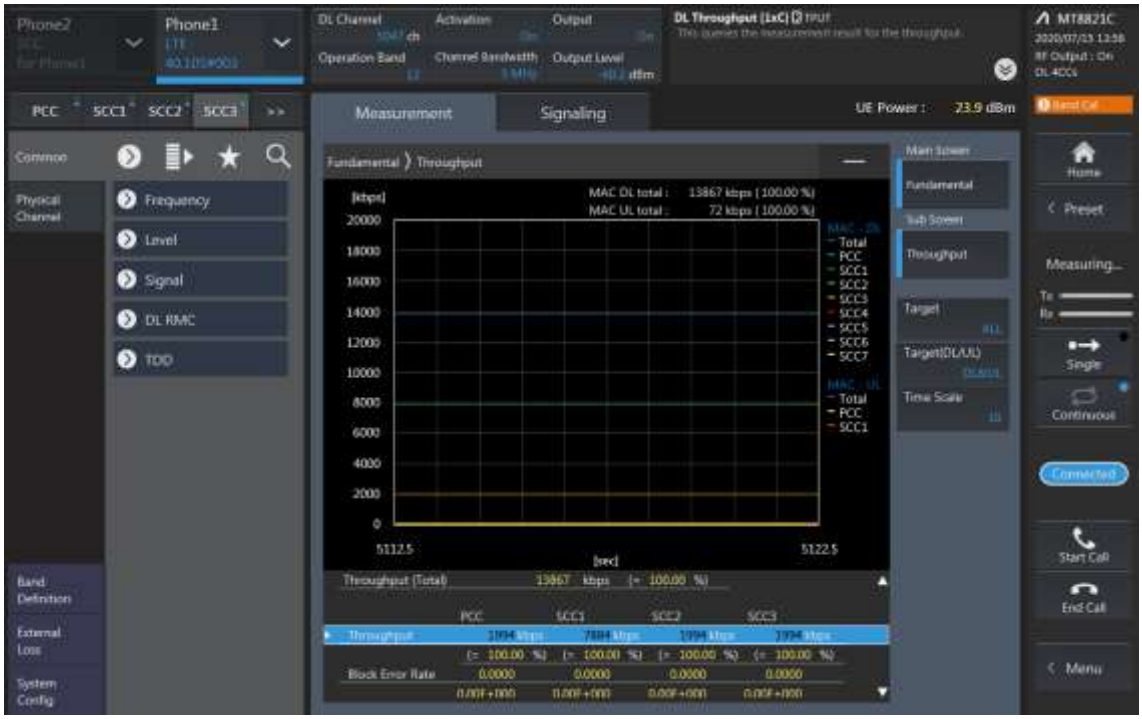
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



SCC3 Setting (Channel /RB/BW/Modulation)and call Connection

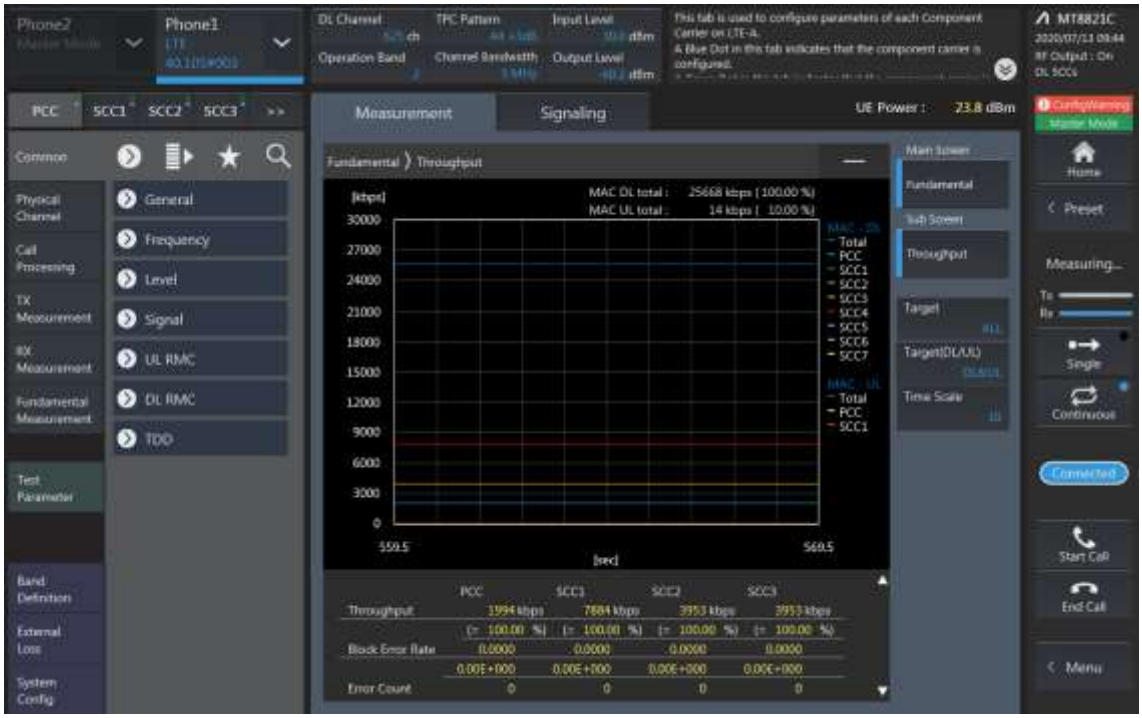


4CA Downlink Carrier aggregation Maximum conducted Powers

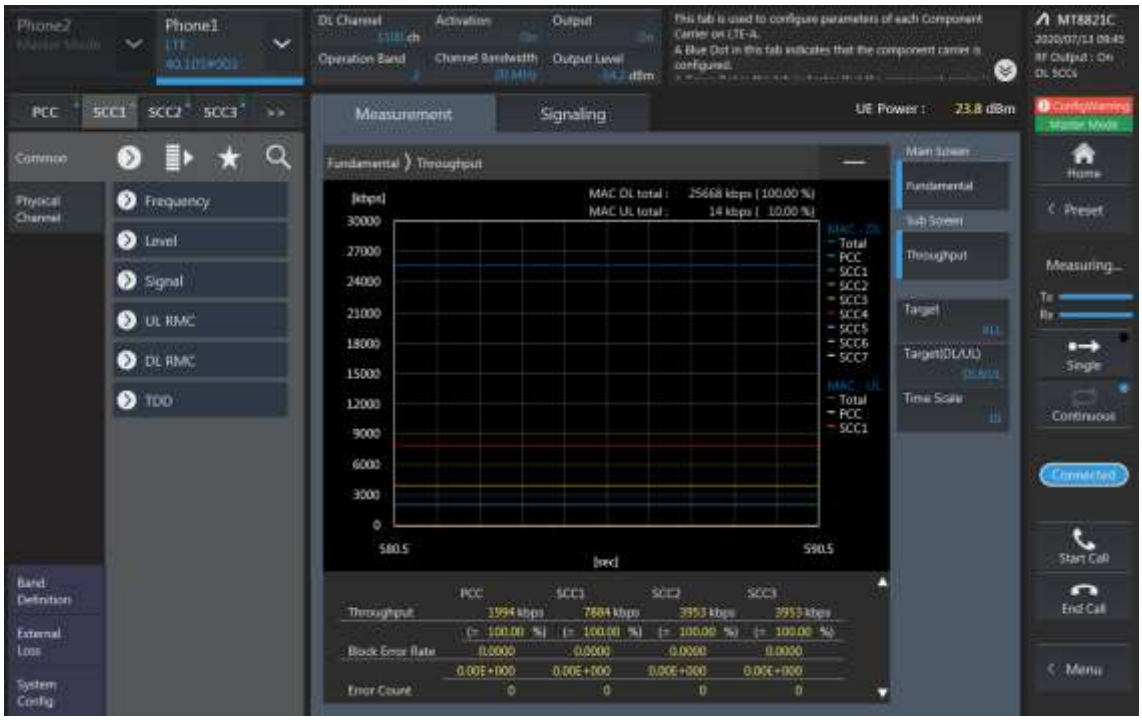
Combination	PCC									SCC				SCC				SCC				Tx Power		Delta (2)-(1)
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	
41E PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	40620	2593	41	20	40422	2573.2	24.61	24.51	-0.10
41E PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	40620	2593	41	20	40422	2573.2	26.13	26.09	-0.04

LTE Down Link 5CA Call Setup

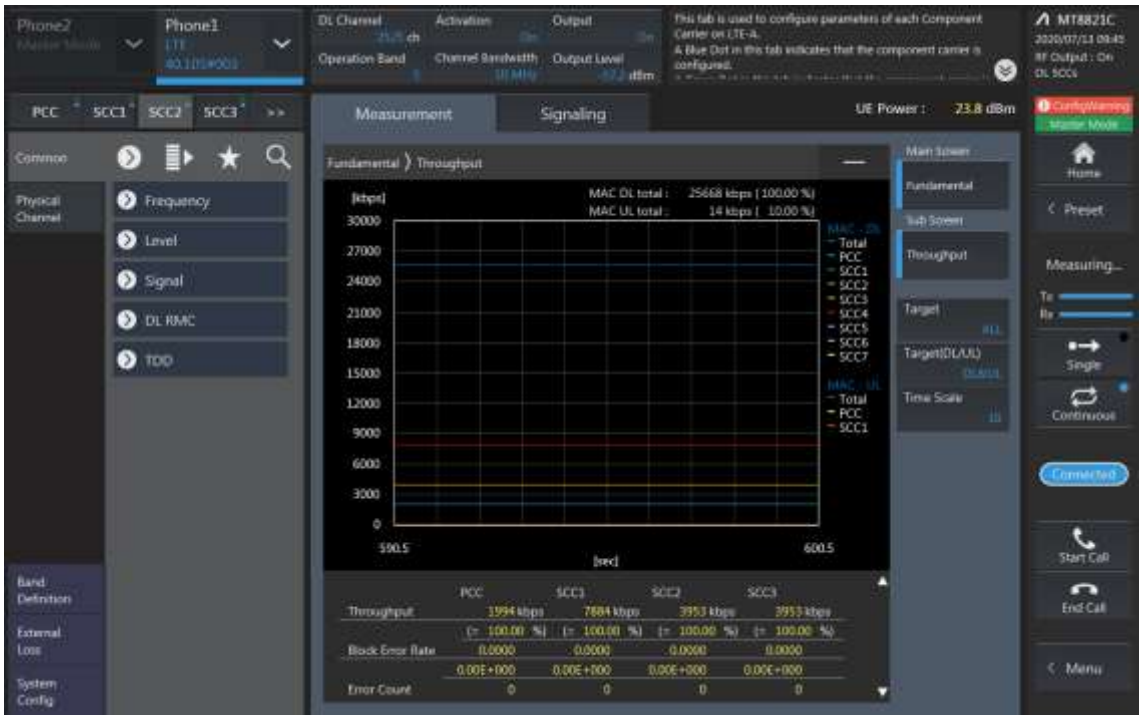
PCC Setting: Channel /RB/BW/Modulation



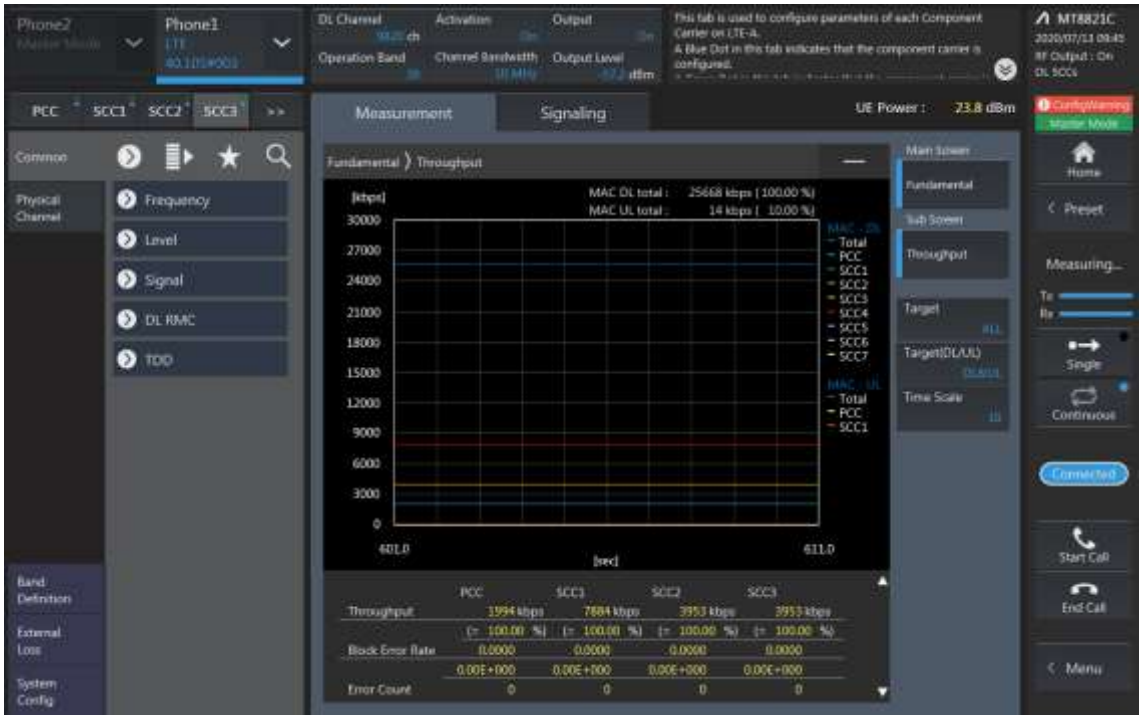
SCC1 Setting (Channel /RB/BW/Modulation)and call Connection



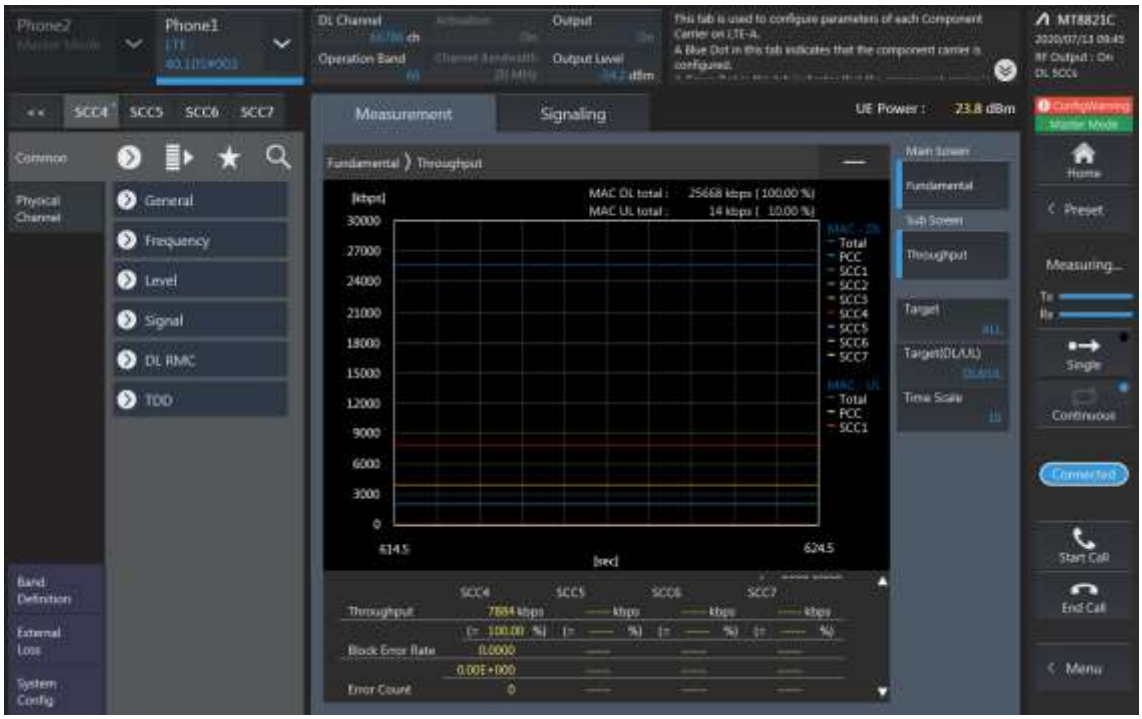
SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



SCC3 Setting (Channel /RB/BW/Modulation)and call Connection



SCC4 Setting (Channel /RB/BW/Modulation)and call Connection

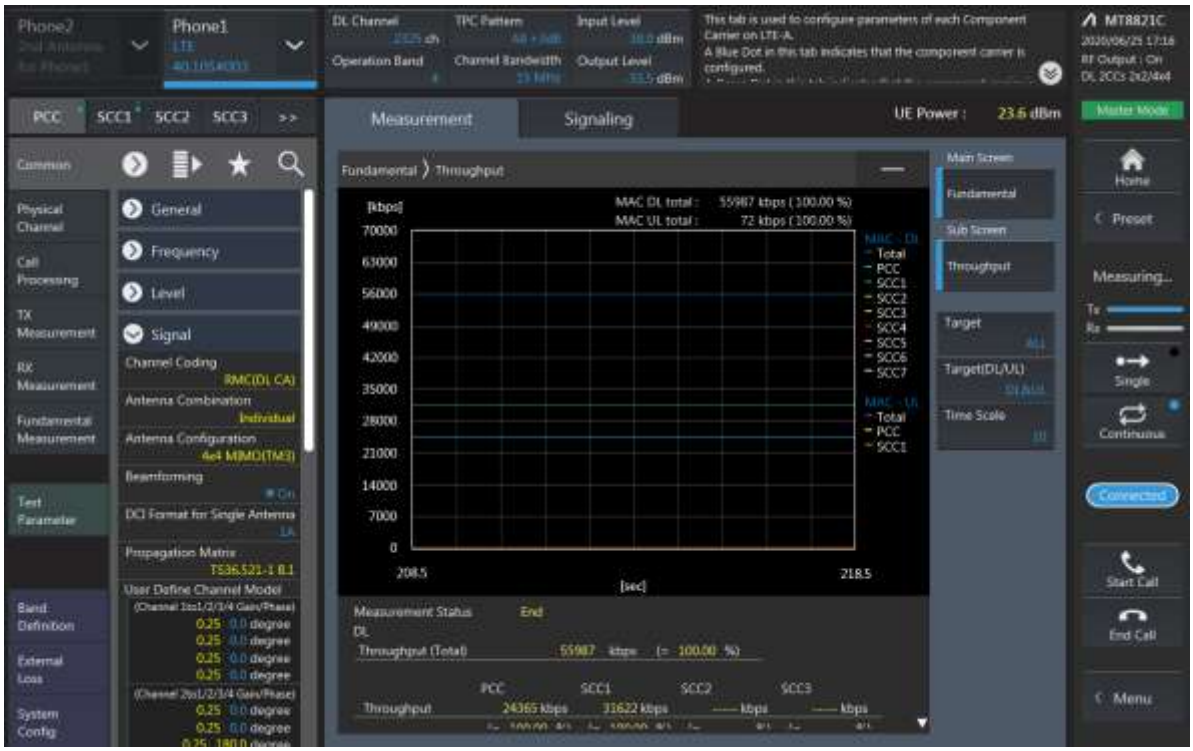


5CA Downlink Carrier aggregation Maximum conducted Powers

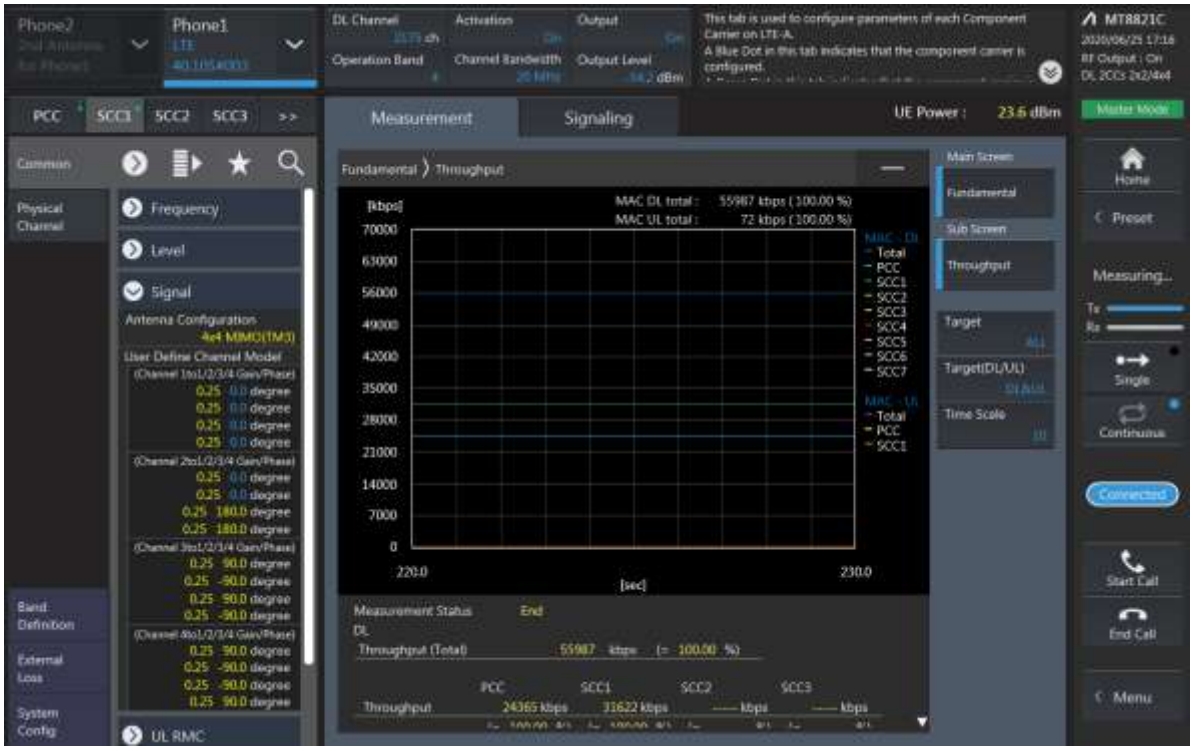
Combination	PCC									SCC				SCC				SCC				SCC				Tx Power		Delta (2)-(1)
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	
41C-41D PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	24.61	24.51	0.1
41C-41D PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	26.13	26.07	0.06

LTE Down Link 2CA 4x4 MIMO Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



SCC Setting : Channel/ RB/ BW/ Modulation and call Connection

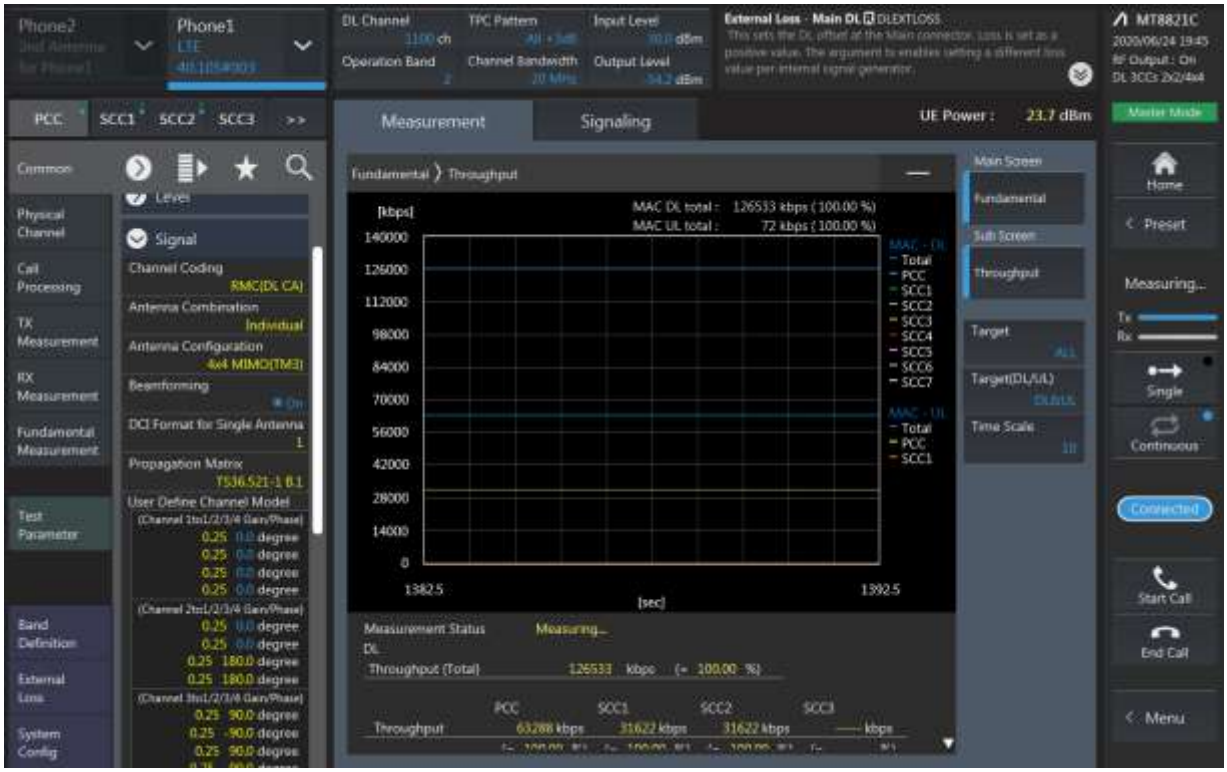


LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

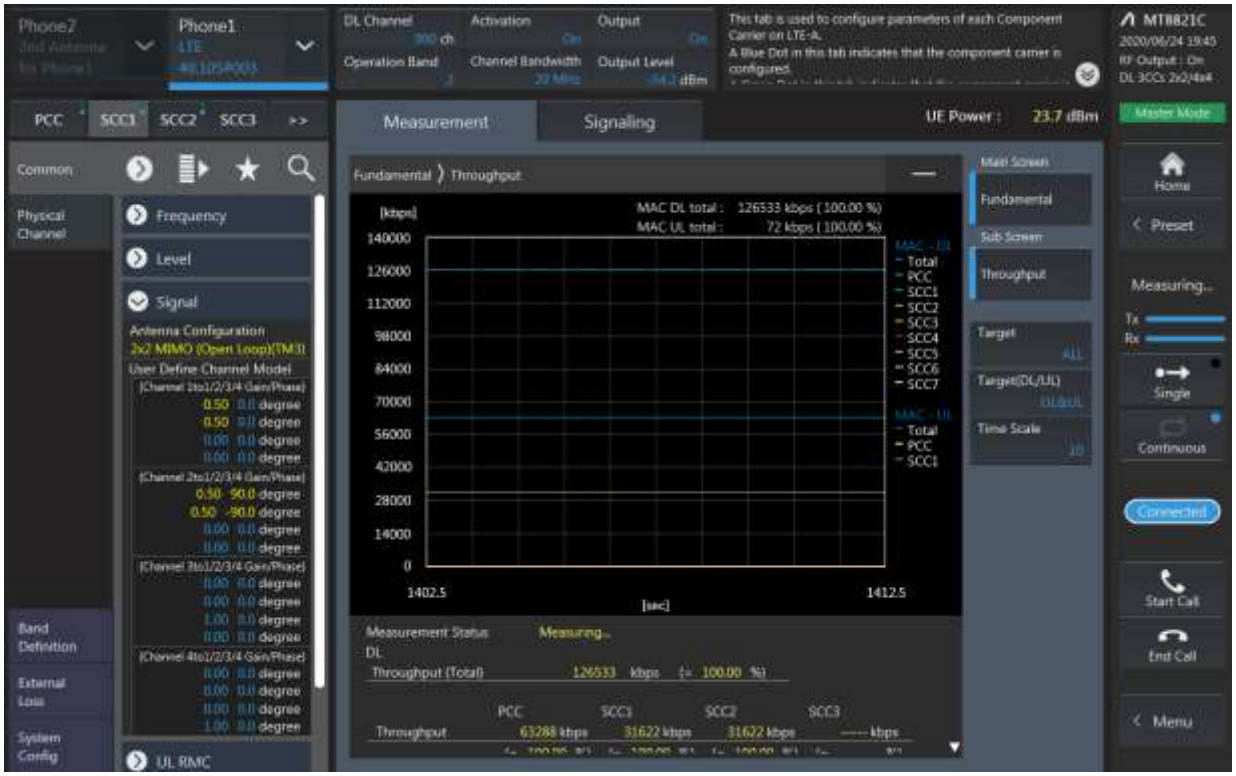
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Delta (2)-(1)
[4A]-5A(0,1)	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	5	10	2525	881.5	23.35	23.19	-0.16
[4A]-5A(0)	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	10	2175	2132.5	24.21	24.15	-0.06
[4A]-5A(1)	5	5	20625	846.5	2625	891.5	QPSK	1	12	4	20	2175	2132.5	24.21	24.13	-0.08
[4A]-17A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	17	10	5790	740	23.35	23.26	-0.09
[4A]-17A	17	5	23790	710	5790	740	QPSK	1	12	4	10	2175	2132.5	23.84	23.68	-0.16
5A-[41A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	41	20	40620	2593	24.21	24.09	-0.12
5A-[41A]	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	5	10	2525	881.5	24.61	24.55	-0.06
[66B]	66	10	132022	1715	66486	2115	QPSK	1	24	66	10	66585	2124.9	23.25	23.18	-0.07
[66C]	66	10	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	23.25	23.11	-0.14

LTE Down Link 3CA 4x4 MIMO Call Setup

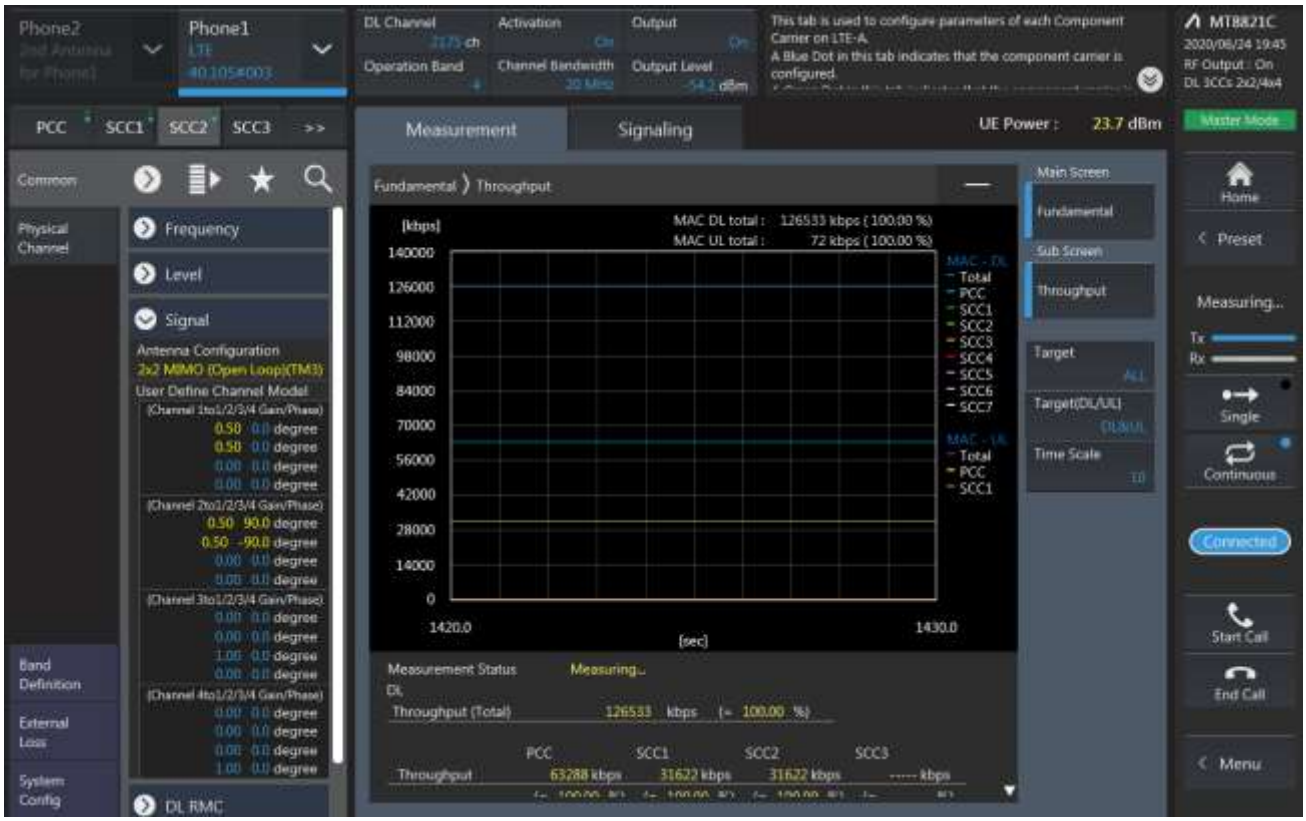
PCC Setting: Channel /RB/BW/Modulation



CC1 Setting : Channel /RB/BW/Modulation



SCC2 Setting (Channel /RB/BW/Modulation)and call Connection

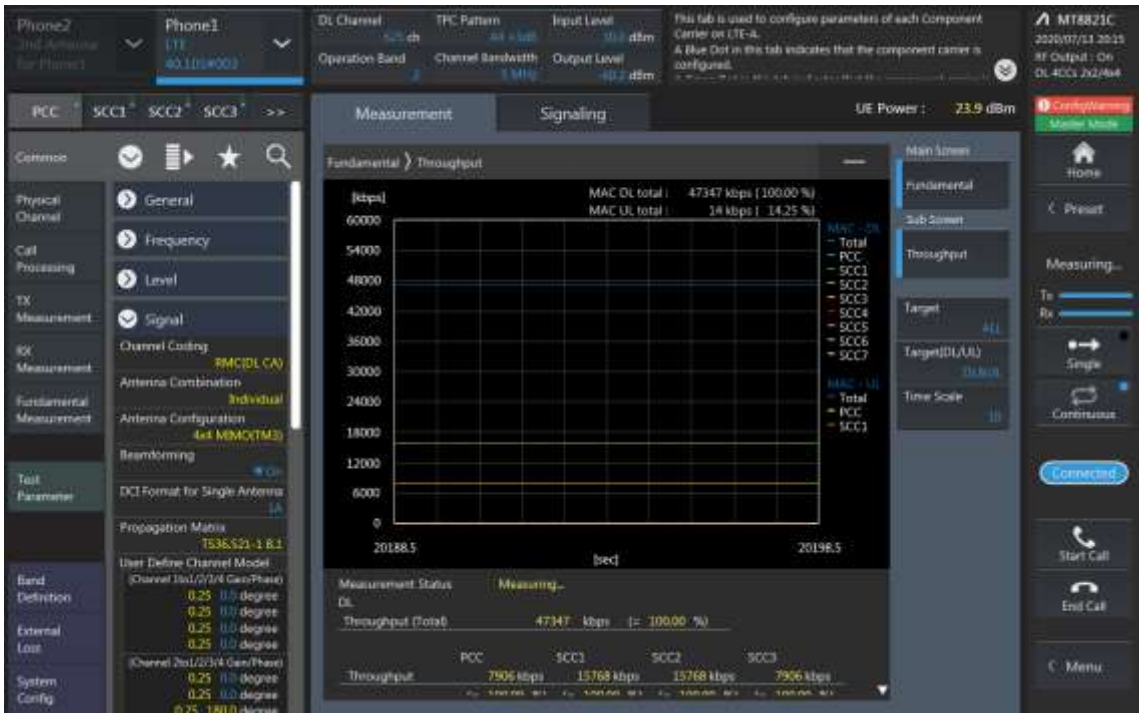


LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

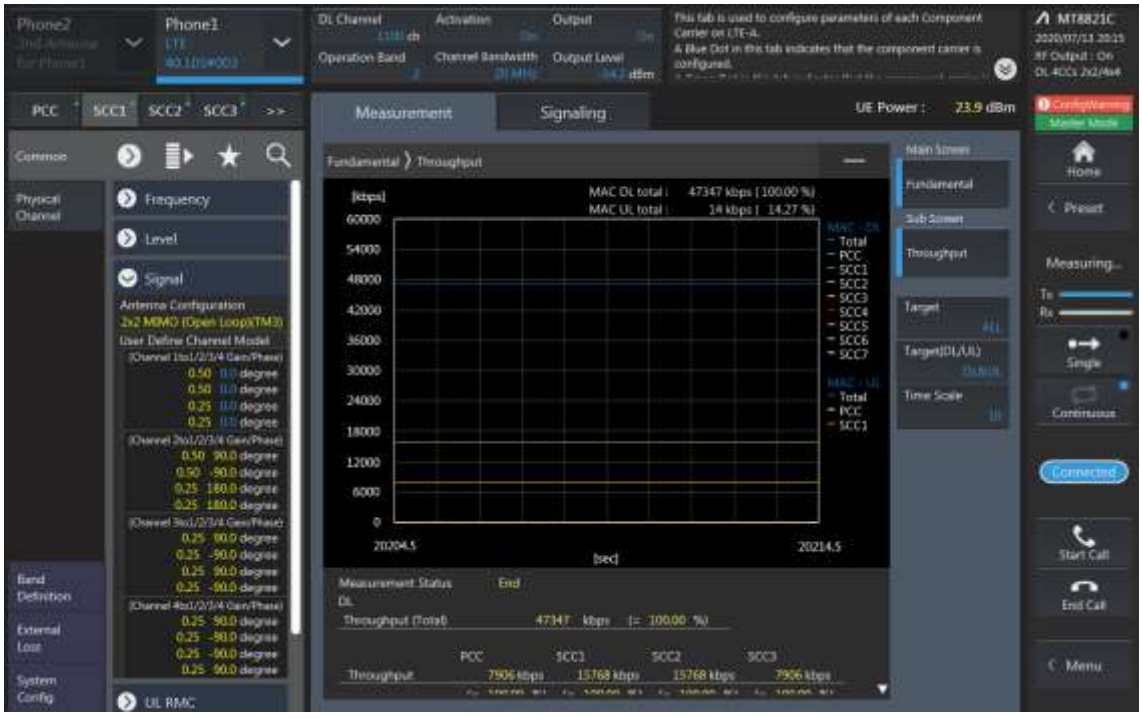
Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Delta (2)-(1)
2A-[4A]-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	22.89	22.88	-0.01
2A-[4A]-5A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.35	23.35	0.00
2A-[4A]-5A	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	24.21	24.17	-0.04
2A-[4A]-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	22.89	22.84	-0.05
2A-[4A]-13A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.35	23.33	-0.02
2A-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	49	2	20	900	1960	4	20	2175	2132.5	23.50	23.45	-0.05
2A-5A-[66A]	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	22.89	22.82	-0.07
2A-5A-[66A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	2	20	900	1960	66	20	66786	2145	24.21	24.14	-0.07
2A-5A-[66A]	66	10	132022	1715	66486	2115	QPSK	1	24	2	20	900	1960	5	10	2525	881.5	23.25	23.21	-0.04
[4A]-4A-12A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	4	20	2300	2145	12	10	5095	737.5	23.35	23.28	-0.07
4A-[4A]-12A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	4	20	2300	2145	12	10	5095	737.5	23.35	23.34	-0.01
[4A]-[4A]-12A	4	5	19975	1712.5	1975	2112.5	QPSK	1	0	4	20	2300	2145	12	10	5095	737.5	23.35	23.27	-0.08
[4A]-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	23.97	23.90	-0.07
4A-[4A]-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	23.97	23.89	-0.08
[4A]-[4A]-12A	12	10	23095	707.5	5095	737.5	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	23.97	23.93	-0.04
5A-[66A]-66A	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	24.21	24.18	-0.03
5A-66A-[66A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	24.21	24.18	-0.03
5A-[66A]-[66A]	5	5	20625	846.5	2625	891.5	QPSK	1	12	66	20	66786	2145	66	20	67236	2190	24.21	24.17	-0.04
5A-[66A]-66A	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	5	10	2525	881.5	23.25	23.24	-0.01
5A-66A-[66A]	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	5	10	2525	881.5	23.25	23.24	-0.01
5A-[66A]-[66A]	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	5	10	2525	881.5	23.25	23.19	-0.06
12A-[66A]-66A	12	10	23095	707.5	5095	737.5	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	23.97	23.93	-0.04
12A-66A-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	23.97	23.90	-0.07
12A-[66A]-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	23.97	23.94	-0.03
12A-[66A]-66A	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	12	10	5095	737.5	23.25	23.22	-0.03
12A-66A-[66A]	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	12	10	5095	737.5	23.25	23.21	-0.04
12A-[66A]-[66A]	66	20	132022	1715	66486	2115	QPSK	1	24	66	20	66630	2129.4	12	10	5095	737.5	23.25	23.19	-0.06
26A-[41C]	26	5	26715	816.5	8715	861.5	QPSK	1	12	41	20	40620	2593	41	20	40818	2612.8	23.86	23.84	-0.02

LTE Down Link 4CA 4x4 MIMO Call Setup

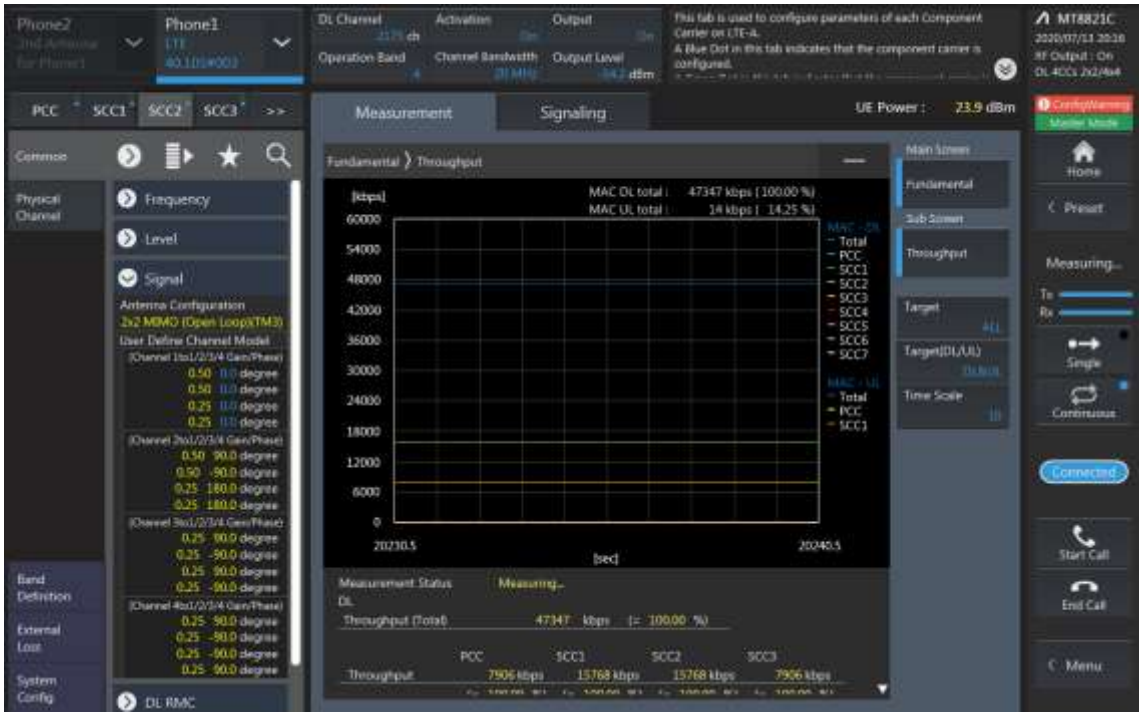
PCC Setting: Channel /RB/BW/Modulation



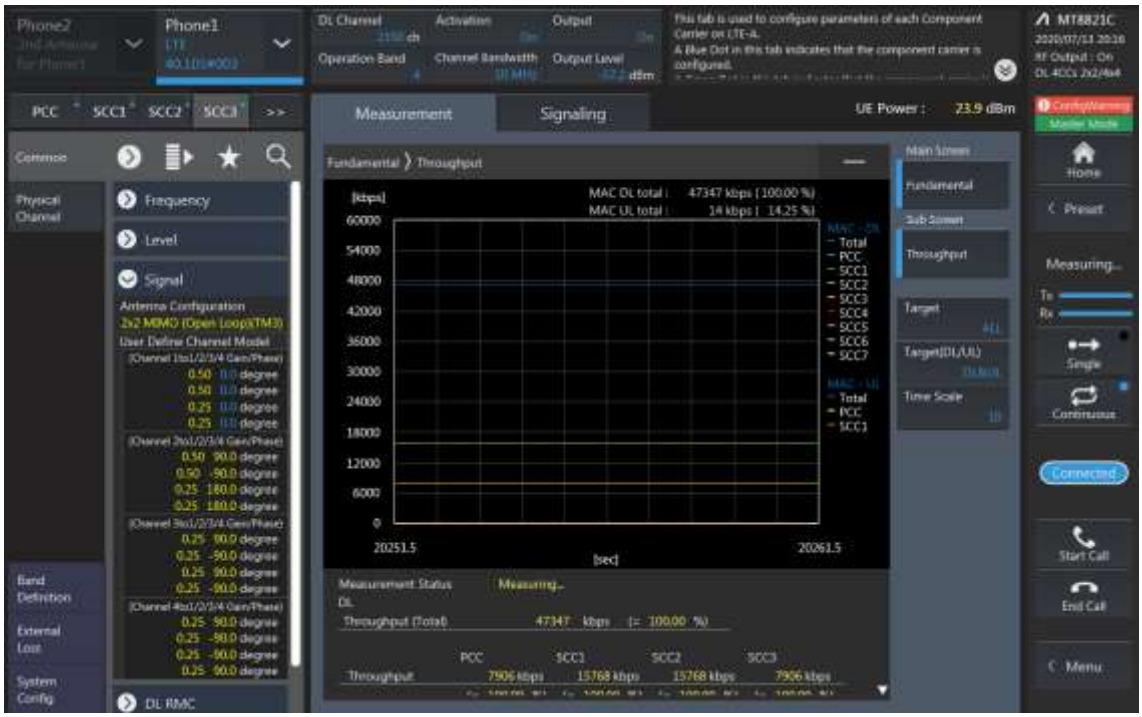
SCC1 Setting : Channel /RB/BW/Modulation



SCC2 Setting (Channel /RB/BW/Modulation) and call Connection



SCC3 Setting (Channel /RB/BW/Modulation) and call Connection

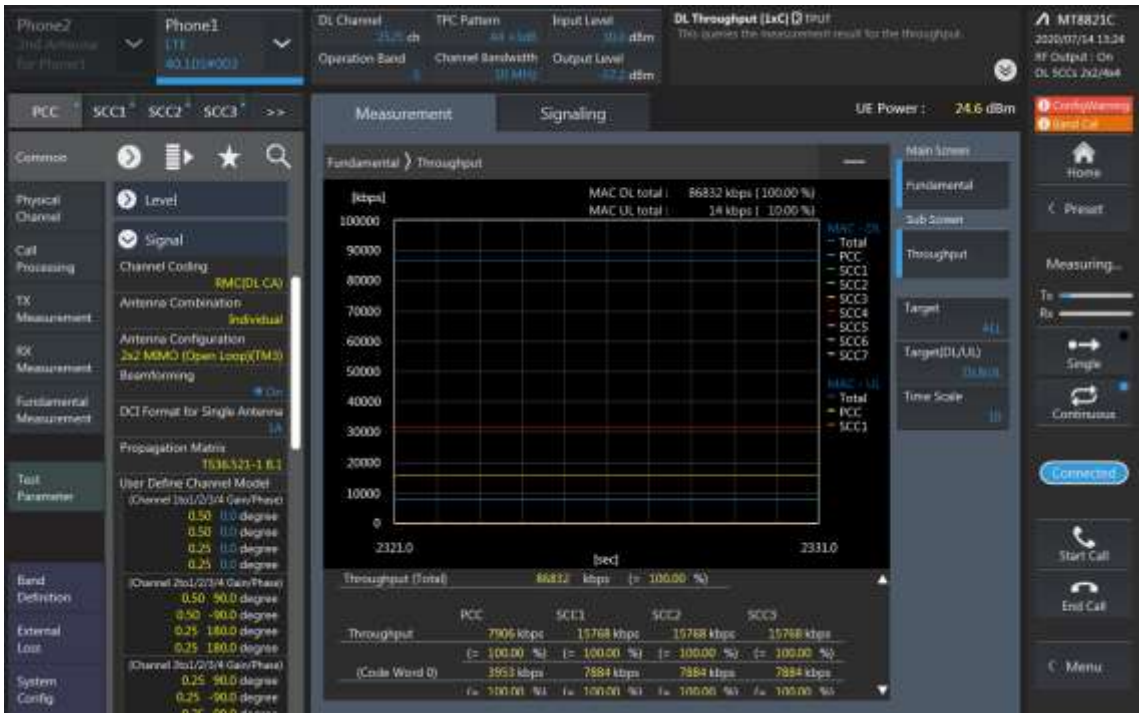


LTE Downlink 4CA 4X4 MIMO Maximum Conducted Power

Combination	PCC									SCC				SCC				SCC				Tx Power		Delta (2)-(1)
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	
[41E] PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	40620	2593	41	20	40422	2573.2	24.61	24.55	-0.06
[41E] PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	40620	2593	41	20	40422	2573.2	26.13	26.01	-0.12

LTE Down Link 5CA 4x4 MIMO Call Setup

PCC Setting: Channel /RB/BW/Modulation

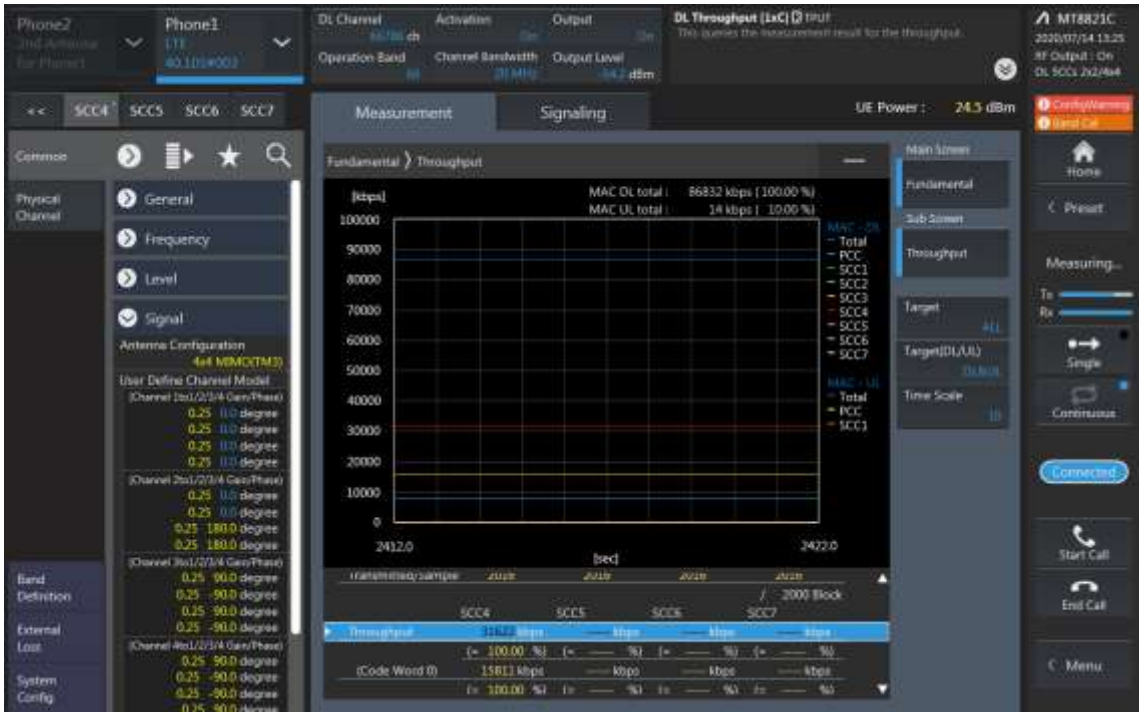


SCC1 Setting : Channel /RB/BW/Modulation

SCC2 Setting (Channel /RB/BW/Modulation) and call Connection

SCC3 Setting (Channel /RB/BW/Modulation) and call Connection

SCC4 Setting (Channel /RB/BW/Modulation) and call Connection



LTE Downlink 5CA 4X4 MIMO Maximum Conducted Power

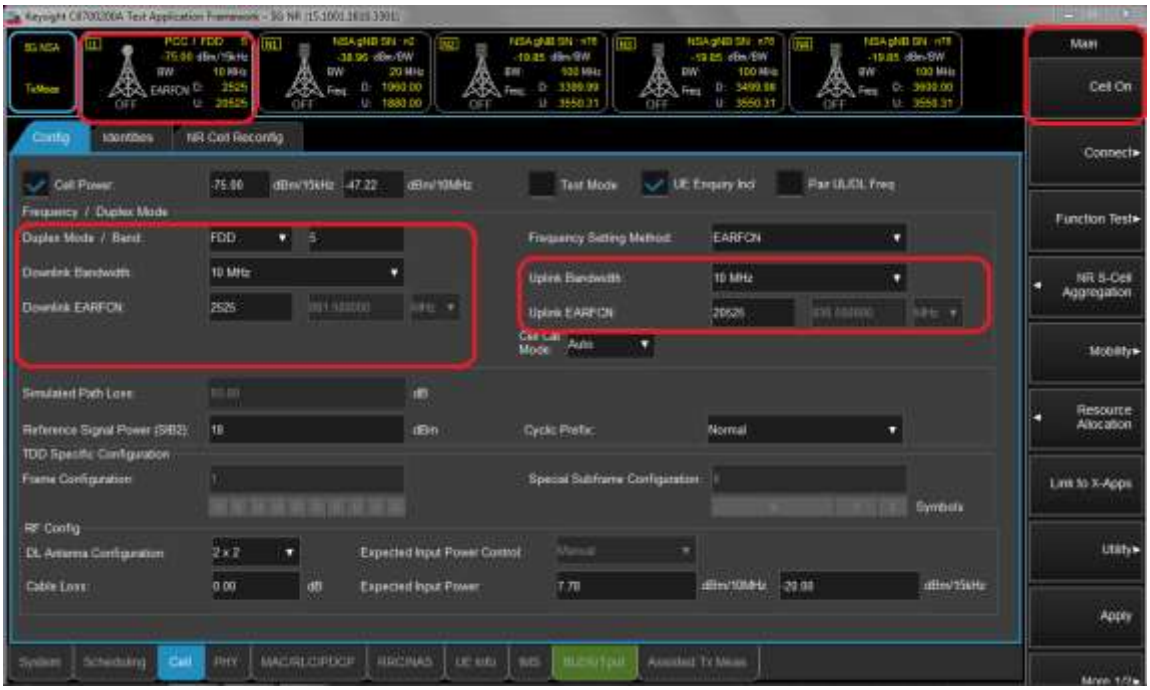
Combination	PCC									SCC				SCC				SCC				SCC				Tx Power		Delta (2)-(1)
	Band	BW	PCC UL Ch.	PCC UL Freq.	PCC DL Ch.	PCC DL Freq.	Modulation	RB	RB offset	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	Band	BW	SCC DL Ch.	SCC DL Freq.	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	
[41C]-41D PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	24.61	24.50	0.11
41C-[41D] PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	24.61	24.55	0.06
[41C]-[41D] PC3	41	20	41055	2636.5	41055	2636.5	QPSK	1	99	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	24.61	24.58	0.03
[41C]-41D PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	26.13	26.02	0.11
41C-[41D] PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	26.13	25.98	0.15
[41C]-[41D] PC2	41	20	41055	2636.5	41055	2636.5	QPSK	1	0	41	20	40818	2612.8	41	20	39750	2506	41	20	39948	2525.8	41	20	40146	2545.6	26.13	26.11	0.02

2. 5G NR Call Box Setup

Procedure used to establish output Power measurement for NR Bands

Select operating band, BW and Channel.

- Click Cell on button in the right of Test application screen.
- Turn the LTE Cell On using “ON/OFF” Key.

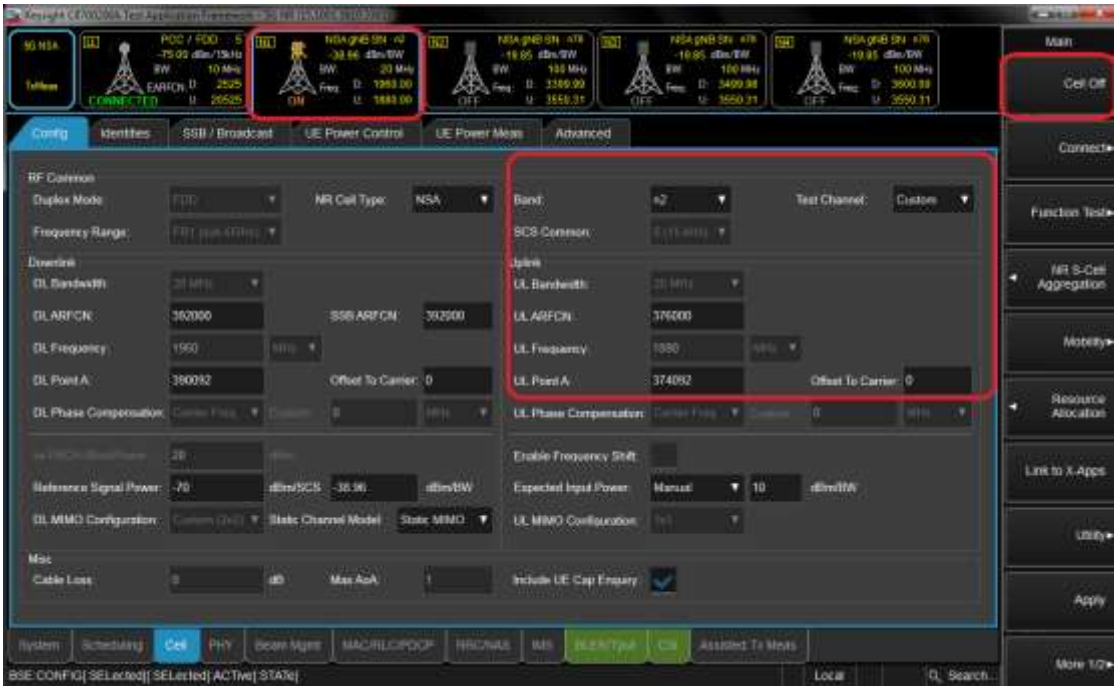


- Turn the Airplane Mode On and then turn the Airplane mode off.
- Select All down bits for UL Power control Mode in LTE.

Setup for NR Band

- Select waveform for Setting NR Band (PHY->PUSCH->Enable Transform Precoder)
  - Enable : DFT-s-OFDM, Disable : CP-OFDM

- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using “ON/OFF” Key.

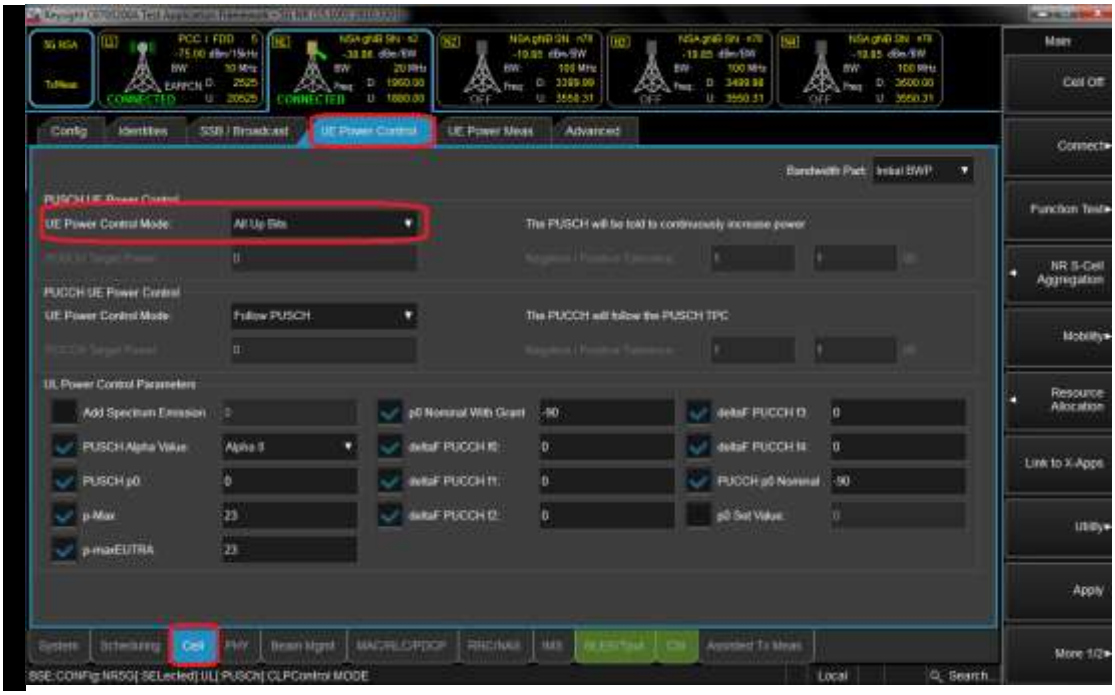


Connect NR S-Cell Aggregation

- Click NR S-Cell Aggregation
- Check the Cell 1's DL and UL box(PCC) and than Click Apply.
- Check the message summary If message shows NR Msg 5, It is connected.

Max Power setting

- Click "Cell in the bottom of screen.
- Click "UE Power control" than change UE Power control mode to All Up bits.



Selecting Start RB/Count/MCS

- Select the each test configurating (Start RB, Count, MCS).

View Tx Power

- Click “Link to X-Apps.”(Please refer to Figure-7)
- Select “Channel Power”.

Appendix J. – NR Band *Pmax* Conducted Power

[NR Band n41 Conducted Power_ P_{max} (Power Class 3)]

NR Band n41 _10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						500202	509400	518598	527802	537000	
						2501.01 ㎒	2547 ㎒	2592.99 ㎒	2639.01 ㎒	2685 ㎒	
10 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.43	23.60	23.99	24.35	24.46	0
				1	12	23.48	23.63	24.13	24.30	24.35	0
				1	22	23.44	23.84	24.24	24.38	24.34	0
				12	0	23.07	23.27	23.49	24.01	23.93	0.5
				12	6	23.51	23.75	24.01	24.38	24.34	0
				12	12	23.06	23.40	23.77	23.97	24.05	0.5
				24	0	22.96	23.22	23.57	23.89	23.89	0.5
			QPSK	1	1	23.41	23.71	24.01	24.43	24.37	0
				1	12	23.42	23.66	24.03	24.45	24.45	0
				1	22	23.56	24.01	24.11	24.40	24.36	0
				12	0	22.40	22.72	23.13	23.46	23.31	1
				12	6	23.47	23.81	24.16	24.52	24.52	0
				12	12	22.70	22.90	23.14	23.43	23.48	1
				24	0	22.62	22.82	23.21	23.53	23.43	1
			16QAM	1	1	22.31	22.70	23.11	23.35	23.38	1
			64QAM	1	1	20.79	21.18	21.50	21.84	21.90	2.5
			256QAM	1	1	18.53	19.11	19.45	19.53	19.73	4.5
		CP	QPSK	1	1	21.71	22.14	22.55	22.81	22.87	1.5

NR Band n41 _15 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						500700	509664	518598	527562	536496	
						2503.5 ㎒	2548.32 ㎒	2592.99 ㎒	2637.81 ㎒	2682.48 ㎒	
15 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.46	23.78	24.23	24.24	24.30	0
				1	18	23.37	23.83	24.26	23.99	24.06	0
				1	36	23.47	23.94	24.17	24.10	24.05	0
				18	0	23.01	23.47	23.93	23.87	23.87	0.5
				18	9	23.55	23.86	24.20	24.16	24.27	0
				18	18	23.10	23.49	23.87	23.67	23.76	0.5
				36	0	22.96	23.40	23.86	23.69	23.78	0.5
			QPSK	1	1	23.59	23.91	24.33	24.09	24.32	0
				1	18	23.45	23.72	24.15	24.14	24.14	0
				1	36	23.59	23.84	24.30	24.16	24.18	0
				18	0	22.40	22.81	23.24	23.31	23.39	1
				18	9	23.45	23.93	24.30	24.21	24.16	0
				18	18	22.52	22.87	23.27	23.15	23.13	1
				36	0	22.63	22.80	23.32	23.22	23.30	1
			16QAM	1	1	22.83	22.67	23.07	23.04	23.04	1
			64QAM	1	1	21.07	21.30	21.64	21.66	21.81	2.5
			256QAM	1	1	19.19	19.15	19.39	19.37	19.50	4.5
		CP	QPSK	1	1	22.43	22.22	22.49	22.49	22.56	1.5

NR Band n41 _20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						501204	509898	518598	527298	535998	
						2506.02 ㎒	2549.49 ㎒	2592.99 ㎒	2636.49 ㎒	2679.99 ㎒	
20 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.48	23.73	24.18	24.15	24.29	0
				1	26	23.41	23.80	24.17	24.07	24.14	0
				1	49	23.54	23.88	24.23	24.12	24.13	0
				25	0	22.98	23.40	23.83	23.78	23.79	0.5
				25	13	23.52	23.86	24.29	24.20	24.19	0
				25	26	23.01	23.43	23.81	23.66	23.67	0.5
				50	0	23.05	23.37	23.80	23.72	23.74	0.5
			QPSK	1	1	23.56	23.82	24.25	24.17	24.30	0
				1	26	23.50	23.80	24.20	24.13	24.17	0
				1	49	23.59	23.86	24.25	24.15	24.17	0
				25	0	22.50	22.91	23.33	23.26	23.29	1
				25	13	23.53	23.87	24.30	24.20	24.17	0
				25	26	22.54	22.94	23.31	23.21	23.20	1
				50	0	22.59	22.88	23.34	23.25	23.24	1
			16QAM	1	1	22.88	22.68	23.01	23.03	23.11	1
			64QAM	1	1	21.11	21.33	21.68	21.68	21.81	2.5
			256QAM	1	1	19.26	19.10	19.47	19.37	19.55	4.5
		CP	QPSK	1	1	22.36	22.18	22.54	22.46	22.58	1.5

NR Band n41 _30 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						502200	510402	518598	526800	534996	
						2511 ㎒	2552.01 ㎒	2592.99 ㎒	2634 ㎒	2674.98 ㎒	
30 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.36	23.57	23.94	24.38	24.39	0
				1	39	23.42	23.71	24.06	24.39	24.36	0
				1	76	23.50	23.93	24.19	24.45	24.43	0
				36	0	22.98	23.23	23.52	23.91	23.86	0.5
				36	21	23.49	23.81	24.11	24.42	24.41	0
				36	42	23.10	23.39	23.67	23.99	23.97	0.5
				75	0	23.04	23.31	23.63	23.97	23.97	0.5
			QPSK	1	1	23.35	23.68	23.98	24.41	24.44	0
				1	39	23.47	23.76	24.09	24.42	24.44	0
				1	76	23.52	23.91	24.20	24.45	24.46	0
				36	0	22.48	22.76	23.08	23.41	23.40	1
				36	21	23.48	23.77	24.16	24.42	24.42	0
				36	42	22.65	22.92	23.17	23.52	23.44	1
				75	0	22.56	22.81	23.18	23.51	23.48	1
			16QAM	1	1	22.32	22.74	23.12	23.25	23.33	1
			64QAM	1	1	20.86	21.09	21.45	21.92	21.93	2.5
			256QAM	1	1	18.63	19.01	19.45	19.63	19.67	4.5
		CP	QPSK	1	1	21.74	22.22	22.64	22.86	22.86	1.5

NR Band n41 _40 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						503202	513468		523734	534000	
						2516.01 ㎒	2567.34 ㎒		2618.67 ㎒	2670 ㎒	
40 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.29	23.61		24.40	24.45	0
				1	53	23.40	23.78		24.26	24.31	0
				1	104	23.58	24.01		24.49	24.36	0
				50	0	22.89	23.30		23.83	23.86	0.5
				50	28	23.46	23.85		24.34	24.37	0
				50	56	23.12	23.44		23.95	23.89	0.5
				100	0	22.99	23.37		23.93	23.88	0.5
			QPSK	1	1	23.36	23.60		24.42	24.48	0
				1	53	23.36	23.81		24.30	24.37	0
				1	104	23.65	24.06		24.44	24.38	0
				50	0	22.41	22.81		23.33	23.37	1
				50	28	23.45	23.89		24.35	24.37	0
				50	56	22.59	23.00		23.38	23.40	1
				100	0	22.48	22.93		23.43	23.31	1
			16QAM	1	1	22.13	22.80		23.24	23.33	1
			64QAM	1	1	20.81	21.06		21.85	21.99	2.5
			256QAM	1	1	18.52	19.27		19.62	19.68	4.5
		CP	QPSK	1	1	21.62	22.32		22.78	22.80	1.5

NR Band n41 _50 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						504204		518598		532998	
						2521.02 ㎒		2592.99 ㎒		2664.99 ㎒	
50 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.60		24.08		24.36	0
				1	67	23.72		24.38		24.34	0
				1	131	24.02		24.32		24.38	0
				64	0	23.16		23.70		23.88	0.5
				64	35	23.78		24.38		24.44	0
				64	69	23.36		23.84		23.89	0.5
				128	0	23.30		23.82		23.93	0.5
			QPSK	1	1	23.66		24.12		24.35	0
				1	67	23.79		24.39		24.42	0
				1	131	24.00		24.37		24.41	0
				64	0	22.67		23.24		23.37	1
				64	35	23.78		24.36		24.40	0
				64	69	22.87		23.42		23.35	1
				128	0	22.78		23.35		23.46	1
			16QAM	1	1	22.39		22.38		22.66	1
			64QAM	1	1	21.13		21.65		21.80	2.5
			256QAM	1	1	18.92		18.74		19.17	4.5
		CP	QPSK	1	1	21.96		21.84		22.19	1.5

NR Band n41 _60 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						505200		518598		531996		
						2526 ㎒		2592.99 ㎒		2659.98 ㎒		
60 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.52		23.97		24.25		0
				1	81	23.65		24.36		24.25		0
				1	160	23.95		24.26		24.24		0
				81	0	23.17		23.75		23.84		0.5
				81	41	23.68		24.42		24.25		0
				81	81	23.34		23.85		23.82		0.5
				162	0	23.34		23.83		23.77		0.5
			QPSK	1	1	23.56		24.05		24.25		0
				1	81	23.65		24.39		24.22		0
				1	160	23.96		24.28		24.24		0
				81	0	22.69		23.24		23.36		1
				81	41	23.67		24.39		24.24		0
				81	81	22.86		23.46		23.27		1
				162	0	22.85		23.38		23.26		1
			16QAM	1	1	21.76		22.31		22.49		1
			64QAM	1	1	21.02		21.54		21.71		2.5
			256QAM	1	1	18.07		18.60		19.03		4.5
		CP	QPSK	1	1	21.14		21.70		22.10		1.5

NR Band n41 _70 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						506208				530994	
						2531.04 ㎒				2654.97 ㎒	
70 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.45				24.17	0
				1	81	23.64				24.31	0
				1	160	23.81				24.23	0
				81	0	23.13				23.81	0.5
				81	41	23.69				24.33	0
				81	81	23.22				23.84	0.5
				162	0	23.26				23.84	0.5
			QPSK	1	1	23.56				24.22	0
				1	81	23.65				24.30	0
				1	160	23.85				24.21	0
				81	0	22.71				23.35	1
				81	41	23.72				24.35	0
				81	81	22.75				23.31	1
				162	0	22.75				23.33	1
			16QAM	1	1	22.32				23.03	1
			64QAM	1	1	20.93				21.70	2.5
			256QAM	1	1	18.63				19.40	4.5
		CP	QPSK	1	1	21.77				22.54	1.5

NR Band n41 _80 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						507204				529998	
						2536.02 ㎒				2649.99 ㎒	
80 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.41				24.17	0
				1	109	23.54				24.21	0
				1	215	23.98				24.14	0
				108	0	23.00				23.80	0.5
				108	55	23.64				24.23	0
				108	109	23.28				23.77	0.5
				216	0	23.16				23.73	0.5
			QPSK	1	1	23.45				24.19	0
				1	109	23.59				24.21	0
				1	215	24.02				24.15	0
				108	0	22.52				23.32	1
				108	55	23.64				24.21	0
				108	109	22.80				23.21	1
				216	0	22.66				23.25	1
			16QAM	1	1	22.21				22.91	1
			64QAM	1	1	20.85				21.67	2.5
			256QAM	1	1	18.56				19.38	4.5
		CP	QPSK	1	1	21.71				22.54	1.5

NR Band n41 _90 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						508200				528996	
						2541 ㎒				2644.98 ㎒	
90 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.42				24.14	0
				1	123	23.66				24.29	0
				1	243	24.11				24.17	0
				120	0	23.14				23.80	0.5
				120	63	23.75				24.36	0
				120	125	23.40				23.79	0.5
				243	0	23.22				23.86	0.5
			QPSK	1	1	23.42				24.18	0
				1	123	23.68				24.34	0
				1	243	24.14				24.21	0
				120	0	22.70				23.31	1
				120	63	23.70				24.34	0
				120	125	22.91				23.31	1
				243	0	22.70				23.39	1
			16QAM	1	1	22.19				23.03	1
			64QAM	1	1	20.84				21.58	2.5
			256QAM	1	1	18.57				19.34	4.5
		CP	QPSK	1	1	21.73				22.46	1.5

NR Band n41 _100 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
								518598			
								2592.99 ㎒			
100 ㎒	30	DFT-s	pi/2 BPSK	1	1			23.73			0
				1	137			24.18			0
				1	271			24.17			0
				135	0			23.52			0.5
				135	69			24.19			0
				135	138			23.77			0.5
				270	0			23.64			0.5
			QPSK	1	1			23.73			0
				1	137			24.20			0
				1	271			24.19			0
				135	0			23.06			1
				135	69			24.15			0
				135	138			23.29			1
				270	0			23.13			1
			16QAM	1	1			22.46			1
			64QAM	1	1			21.14			2.5
			256QAM	1	1			18.94			4.5
		CP	QPSK	1	1			22.08			1.5

[NR Band n66 Conducted Power _ P_{max} (Upper Ant.]

NR Band n66 _5 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						342500	349000	355500	
						1712.5 ㎒	1745 ㎒	1777.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.25	22.66	22.72	0
				1	13	23.42	22.72	22.76	0
				1	23	23.32	22.72	22.77	0
				12	0	22.86	22.23	22.27	0.5
				12	7	23.42	22.74	22.79	0
				12	13	22.88	22.29	22.31	0.5
				25	0	22.92	22.27	22.32	0.5
			QPSK	1	1	23.33	22.74	22.77	0
				1	13	23.46	22.78	22.82	0
				1	23	23.38	22.76	22.80	0
				12	0	22.42	21.76	21.83	1
				12	7	23.46	22.76	22.84	0
				12	13	22.40	21.81	21.80	1
				25	0	22.43	21.74	21.81	1
			16QAM	1	1	22.25	21.74	21.80	1
			64QAM	1	1	21.01	20.40	20.43	2.5
			256QAM	1	1	18.23	17.68	17.65	4.5
		CP	QPSK	1	1	21.76	21.21	21.24	1.5

NR Band n66 _ 10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						343000	349000	355000	
						1715 ㎒	1745 ㎒	1775 ㎒	
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.94	22.79	22.81	0
				1	26	23.58	23.47	22.85	0
				1	50	23.06	22.91	22.85	0
				25	0	22.86	22.71	22.37	0.5
				25	14	23.56	23.41	22.87	0
				25	27	22.86	22.71	22.37	0.5
				50	0	22.89	22.76	22.39	0.5
			QPSK	1	1	23.01	22.88	22.88	0
				1	26	23.66	23.51	22.91	0
				1	50	23.09	22.92	22.91	0
				25	0	22.36	22.22	21.87	1
				25	14	23.59	23.43	22.84	0
				25	27	22.39	22.22	21.90	1
				50	0	22.43	22.26	21.85	1
			16QAM	1	1	21.95	21.87	21.85	1
			64QAM	1	1	20.62	20.48	20.49	2.5
			256QAM	1	1	17.78	17.65	17.65	4.5
		CP	QPSK	1	1	21.43	21.30	21.28	1.5

NR Band n66 _ 15 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						343500	349000	354500	
						1717.5 ㎒	1745 ㎒	1772.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.05	22.86	22.82	0
				1	40	22.94	22.86	22.83	0
				1	77	22.98	22.97	22.94	0
				36	0	22.55	22.44	22.35	0.5
				36	22	23.02	22.88	22.85	0
				36	43	22.56	22.45	22.47	0.5
				75	0	22.58	22.47	22.41	0.5
			QPSK	1	1	23.10	22.94	22.90	0
				1	40	23.01	22.89	22.88	0
				1	77	23.02	23.05	23.01	0
				36	0	22.06	21.96	21.89	1
				36	22	23.04	22.93	22.88	0
				36	43	22.09	21.97	21.95	1
				75	0	22.07	21.94	21.90	1
			16QAM	1	1	22.03	21.87	21.87	1
			64QAM	1	1	20.75	20.53	20.55	2.5
			256QAM	1	1	17.80	17.79	17.75	4.5
		CP	QPSK	1	1	21.60	21.38	21.38	1.5

NR Band n66 _ 20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.90	22.87	22.86	0
				1	53	22.94	22.85	22.81	0
				1	104	22.98	22.97	22.95	0
				50	0	22.55	22.40	22.41	0.5
				50	28	23.05	22.94	22.90	0
				50	56	22.49	22.51	22.48	0.5
				100	0	22.57	22.43	22.44	0.5
			QPSK	1	1	23.14	22.96	22.91	0
				1	53	23.00	22.89	22.91	0
				1	104	23.05	23.04	23.00	0
				50	0	22.06	21.91	21.91	1
				50	28	23.08	22.93	22.94	0
				50	56	22.03	21.97	21.98	1
				100	0	22.05	21.97	21.95	1
			16QAM	1	1	22.07	21.90	21.86	1
			64QAM	1	1	20.80	20.61	20.56	2.5
			256QAM	1	1	17.81	17.72	17.71	4.5
		CP	QPSK	1	1	21.57	21.43	21.40	1.5

NR Band n66 _ 30 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							349000		
							1745 ㎒		
30 ㎒	15	DFT-s	pi/2 BPSK	1	1		23.11		0
				1	80		23.03		0
				1	158		23.03		0
				80	0		22.57		0.5
				80	40		23.10		0
				80	80		22.64		0.5
				160	0		22.59		0.5
			QPSK	1	1		23.18		0
				1	80		23.08		0
				1	158		23.10		0
				80	0		22.11		1
				80	40		23.10		0
				80	80		22.15		1
				160	0		22.16		1
			16QAM	1	1		22.14		1
			64QAM	1	1		20.83		2.5
			256QAM	1	1		17.97		4.5
		CP	QPSK	1	1		21.61		1.5

NR Band n66 _ 40 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							349000		
							1745 ㎒		
40 ㎒	15	DFT-s	pi/2 BPSK	1	1		23.09		0
				1	108		23.05		0
				1	214		23.02		0
				108	0		22.54		0.5
				108	54		23.11		0
				108	108		22.69		0.5
				216	0		22.59		0.5
			QPSK	1	1		23.13		0
				1	108		23.09		0
				1	214		23.08		0
				108	0		22.08		1
				108	54		23.13		0
				108	108		22.16		1
				216	0		22.13		1
			16QAM	1	1		22.07		1
			64QAM	1	1		20.77		2.5
			256QAM	1	1		18.09		4.5
		CP	QPSK	1	1		21.60		1.5

[NR Band n77 Conducted Power _ P_{max}] – Power Class 3

NR Band n77_ 10㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						647000	650600	654200	657800	661400	665000	
						3705 ㎒	3759 ㎒	3813 ㎒	3867 ㎒	3921 ㎒	3975 ㎒	
10 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.79	24.18	24.25	23.95	23.49	23.17	0
				1	12	23.85	24.14	24.27	23.93	23.52	23.13	0
				1	22	23.89	24.10	24.17	23.82	23.44	23.20	0
				12	0	23.32	23.65	23.78	23.47	23.00	22.73	0.5
				12	6	23.83	24.09	24.27	24.00	23.45	23.16	0
				12	12	23.35	23.66	23.75	23.42	22.97	22.75	0.5
				24	0	23.30	23.62	23.76	23.45	22.99	22.74	0.5
			QPSK	1	1	23.81	24.13	24.32	23.94	23.48	23.19	0
				1	12	23.87	24.07	24.25	23.96	23.49	23.12	0
				1	22	23.88	24.08	24.20	23.94	23.45	23.29	0
				12	0	22.84	23.11	23.24	22.96	22.47	22.18	1
				12	6	23.87	24.14	24.22	23.93	23.45	23.21	0
				12	12	22.82	23.11	23.20	22.91	22.45	22.32	1
				24	0	22.83	23.15	23.26	22.92	22.50	22.17	1
			16QAM	1	1	22.73	23.05	23.19	22.92	22.47	22.08	1
			64QAM	1	1	21.54	21.90	22.09	21.73	21.23	20.89	2.5
			256QAM	1	1	19.19	19.58	19.70	19.33	18.86	18.59	4.5
		CP	QPSK	1	1	22.36	22.64	22.84	22.50	21.97	21.58	1.5

NR Band n77_ 15㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						647168	650700	654232	657766	661300	664832	
						3707.52 ㎒	3760.5 ㎒	3813.49 ㎒	3866.5 ㎒	3919.5 ㎒	3972.48 ㎒	
15 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.93	24.26	24.44	24.20	23.77	23.39	0
				1	18	23.84	24.22	24.41	24.01	23.65	23.38	0
				1	36	23.97	24.32	24.46	24.13	23.72	23.42	0
				18	0	23.47	23.67	23.91	23.67	23.21	22.94	0.5
				18	9	23.93	24.25	24.46	24.11	23.63	23.42	0
				18	18	23.49	23.80	23.95	23.62	23.21	22.96	0.5
				36	0	23.47	23.77	24.02	23.67	23.20	22.95	0.5
			QPSK	1	1	23.95	24.23	24.52	24.25	23.78	23.48	0
				1	18	23.91	24.26	24.45	24.12	23.63	23.40	0
				1	36	23.98	24.27	24.44	24.19	23.72	23.45	0
				18	0	22.96	23.18	23.45	23.22	22.70	22.48	1
				18	9	23.92	24.26	24.47	24.14	23.68	23.40	0
				18	18	23.05	23.25	23.50	23.14	22.68	22.46	1
				36	0	23.01	23.24	23.50	23.17	22.67	22.38	1
			16QAM	1	1	22.84	23.27	23.54	23.32	22.72	22.57	1
			64QAM	1	1	21.67	21.88	22.12	21.98	21.44	21.13	2.5
			256QAM	1	1	19.35	19.61	19.84	19.65	19.18	18.83	4.5
		CP	QPSK	1	1	22.41	22.65	23.03	22.71	22.18	21.99	1.5

NR Band n77_ 20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						647334	650800	654266	657734	661200	664666	
						3710.01 ㎒	3762 ㎒	3813.99 ㎒	3866.01 ㎒	3918 ㎒	3969.99 ㎒	
20 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	24.04	24.21	24.48	24.22	23.77	23.39	0
				1	26	23.98	24.24	24.46	24.10	23.59	23.33	0
				1	49	24.07	24.29	24.42	24.11	23.69	23.44	0
				25	0	23.53	23.83	23.94	23.72	23.19	22.93	0.5
				25	13	24.04	24.31	24.46	24.18	23.73	23.38	0
				25	26	23.57	23.83	23.94	23.67	23.23	22.93	0.5
				50	0	23.53	23.78	24.07	23.70	23.17	22.91	0.5
			QPSK	1	1	24.03	24.23	24.53	24.23	23.73	23.42	0
				1	26	23.92	24.25	24.48	24.16	23.63	23.40	0
				1	49	24.01	24.27	24.49	24.15	23.67	23.48	0
				25	0	22.94	23.35	23.46	23.18	22.73	22.40	1
				25	13	23.95	24.26	24.51	24.13	23.69	23.42	0
				25	26	23.03	23.28	23.49	23.16	22.73	22.47	1
				50	0	22.99	23.34	23.50	23.22	22.72	22.40	1
			16QAM	1	1	22.91	23.15	23.39	23.18	22.55	22.43	1
			64QAM	1	1	21.38	22.01	22.22	22.02	21.41	21.18	2.5
			256QAM	1	1	19.39	19.58	19.86	19.59	19.12	18.76	4.5
		CP	QPSK	1	1	22.56	22.77	22.96	22.71	22.20	21.93	1.5

NR Band n77_ 30 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						647668	651000	654334	657666	661000	664332	
						3715.02 MHz	3765 MHz	3815.01 MHz	3864.99 MHz	3915 MHz	3964.98 MHz	
30 ㎒	30	DFT-s	pi/2 BPSK	1	1	23.07	23.65	24.36	24.51	23.76	23.39	0
				1	39	23.04	23.84	24.30	24.27	23.62	23.49	0
				1	76	23.77	23.96	24.43	24.11	23.59	23.47	0
				36	0	23.18	23.35	23.88	24.01	23.36	23.01	0.5
				36	21	23.71	23.94	24.33	24.31	23.61	23.57	0
				36	42	23.28	23.48	23.83	23.75	23.15	23.08	0.5
				75	0	23.22	23.33	23.88	23.81	23.20	22.97	0.5
			QPSK	1	1	23.60	23.66	24.39	24.49	23.85	23.42	0
				1	39	23.72	23.87	24.32	24.28	23.62	23.45	0
				1	76	23.73	23.93	24.43	24.24	23.64	23.51	0
				36	0	22.63	22.78	23.35	23.42	22.83	22.54	1
				36	21	23.71	23.91	24.31	24.29	23.64	23.46	0
				36	42	22.78	22.96	23.42	23.22	22.66	22.52	1
				75	0	22.67	22.86	23.42	23.33	22.72	22.47	1
			16QAM	1	1	22.50	22.65	23.28	23.39	22.78	22.47	1
			64QAM	1	1	21.33	21.37	22.07	22.20	21.51	21.22	2.5
			256QAM	1	1	19.03	19.02	19.69	19.87	19.21	18.81	4.5
		CP	QPSK	1	1	22.13	22.22	22.75	22.99	22.36	21.84	1.5

NR Band n77_40 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						648000	651200	654400	657600	660800	664000	
						3720 ㎒	3768 ㎒	3816 ㎒	3864 ㎒	3912 ㎒	3960 ㎒	
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.70	23.85	24.35	24.61	24.11	23.38	0
				1	53	23.82	23.93	24.35	24.29	23.74	23.50	0
				1	104	23.87	23.93	24.36	24.01	23.68	23.58	0
				50	0	22.57	23.30	23.84	23.93	23.43	22.74	0.5
				50	28	23.79	24.07	24.40	24.30	23.77	23.38	0
				50	56	23.37	23.45	23.78	23.75	23.24	23.03	0.5
				100	0	23.30	23.45	23.91	23.88	23.30	22.96	0.5
			QPSK	1	1	23.87	23.76	24.44	24.62	24.08	23.25	0
				1	53	23.92	24.00	24.32	24.36	23.74	23.52	0
				1	104	23.87	23.79	24.42	24.09	23.67	23.50	0
				50	0	22.78	22.77	23.31	23.38	23.00	22.34	1
				50	28	23.85	24.02	24.45	24.28	23.87	23.49	0
				50	56	22.99	22.94	23.45	23.21	22.73	22.51	1
				100	0	22.82	23.00	23.50	23.30	22.85	22.50	1
			16QAM	1	1	22.91	22.99	23.60	23.78	23.05	22.37	1
			64QAM	1	1	21.53	21.40	22.10	22.39	21.76	21.27	2.5
			256QAM	1	1	19.21	19.16	19.69	19.92	19.47	18.82	4.5
		CP	QPSK	1	1	22.19	22.22	22.85	23.03	22.55	21.87	1.5

NR Band n77_ 50㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						648334	652166	656000		659834	663666	
						3725.01 ㎒	3782.49 ㎒	3840 ㎒		3897.51 ㎒	3954.99 ㎒	
50㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.88	24.12	24.23		23.92	23.35	0
				1	67	23.91	24.28	24.17		23.61	23.19	0
				1	131	23.93	24.27	24.06		23.37	23.43	0
				64	0	23.51	23.84	23.77		23.36	22.71	0.5
				64	35	24.11	24.30	24.27		23.57	23.31	0
				64	69	23.34	23.72	23.77		23.12	22.69	0.5
				128	0	23.15	23.82	23.82		23.18	22.69	0.5
			QPSK	1	1	23.79	24.17	24.23		23.84	23.34	0
				1	67	23.79	24.20	24.26		23.60	23.25	0
				1	131	23.70	24.33	24.13		23.47	23.47	0
				64	0	22.67	23.27	23.23		22.85	22.29	1
				64	35	23.79	24.32	24.26		23.76	23.36	0
				64	69	22.66	23.28	23.22		22.59	22.23	1
				128	0	22.95	23.27	23.24		22.60	22.17	1
			16QAM	1	1	22.29	22.92	23.19		22.80	22.39	1
			64QAM	1	1	21.14	21.88	22.03		21.70	20.94	2.5
			256QAM	1	1	19.16	19.38	19.56		19.25	18.57	4.5
		CP	QPSK	1	1	22.26	22.60	22.75		22.45	21.77	1.5

NR Band n77_60㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						648668	653556			658444	663332	
						3730.02 ㎒	3803.34 ㎒			3876.66 ㎒	3949.98 ㎒	
60㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.88	24.20			24.17	23.33	0
				1	81	23.03	24.22			23.81	23.31	0
				1	160	23.90	24.21			23.62	23.35	0
				81	0	23.38	23.83			23.61	22.95	0.5
				81	41	23.98	24.32			23.87	23.45	0
				81	81	23.42	23.81			23.33	22.91	0.5
				162	0	23.41	23.87			23.45	22.90	0.5
			QPSK	1	1	23.90	24.23			24.14	23.47	0
				1	81	23.89	24.30			23.84	23.25	0
				1	160	23.90	24.12			23.66	23.53	0
				81	0	22.97	23.32			23.07	22.57	1
				81	41	23.95	24.32			23.95	23.36	0
				81	81	22.96	23.29			22.72	22.35	1
				162	0	22.95	23.25			22.89	22.40	1
			16QAM	1	1	22.85	23.17			23.12	22.46	1
			64QAM	1	1	21.61	22.05			21.93	21.05	2.5
			256QAM	1	1	19.19	19.55			19.62	18.76	4.5
		CP	QPSK	1	1	22.43	22.61			22.82	21.91	1.5

NR Band n77_70 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						649000	654336			658334	663000	
						3750 ㎒	3804.99 ㎒			3875.01 ㎒	3945 ㎒	
70 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.39	24.14			23.99	23.42	0
				1	95	23.82	24.18			23.80	23.17	0
				1	187	23.89	24.09			23.54	23.41	0
				90	0	23.27	23.68			23.54	22.78	0.5
				90	50	23.85	24.17			23.85	23.29	0
				90	99	23.36	23.71			23.10	22.74	0.5
				180	0	23.38	23.69			23.34	22.89	0.5
			QPSK	1	1	23.80	24.13			24.07	23.48	0
				1	95	23.91	24.18			23.81	23.20	0
				1	187	23.84	23.99			23.52	23.29	0
				90	0	22.79	23.22			23.03	22.34	1
				90	50	23.87	24.19			23.83	23.30	0
				90	99	22.89	23.17			22.59	22.25	1
				180	0	22.86	23.16			22.86	22.26	1
			16QAM	1	1	22.72	23.05			23.03	22.48	1
			64QAM	1	1	21.56	21.90			21.85	21.20	2.5
			256QAM	1	1	19.07	19.47			19.39	18.77	4.5
		CP	QPSK	1	1	22.23	22.58			22.44	21.86	1.5

NR Band n77_ 80㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						649334		656000		662666		
						3740.01 ㎒		3840 ㎒		3939.99 ㎒		
80 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.80		24.12		23.57		0
				1	109	23.87		24.21		23.39		0
				1	215	23.78		23.82		23.32		0
				108	0	23.43		23.70		22.98		0.5
				108	55	23.92		24.15		23.43		0
				108	109	23.36		23.57		22.73		0.5
				216	0	23.40		23.61		22.87		0.5
			QPSK	1	1	23.88		24.08		23.61		0
				1	109	23.94		24.17		23.32		0
				1	215	23.83		23.73		23.33		0
				108	0	22.97		23.20		22.46		1
				108	55	23.89		24.11		23.39		0
				108	109	22.89		23.02		22.32		1
				216	0	22.93		23.18		22.42		1
			16QAM	1	1	22.82		22.99		22.56		1
			64QAM	1	1	21.55		21.86		21.28		2.5
			256QAM	1	1	19.11		19.35		18.86		4.5
		CP	QPSK	1	1	22.29		22.56		22.02		1.5

NR Band n77_ 90㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						649668		656000		662332		
						3745.02 ㎒		3840 ㎒		3934.98 ㎒		
90 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.78		24.11		23.71		0
				1	123	23.80		24.16		23.40		0
				1	243	23.96		23.79		23.16		0
				120	0	23.39		23.67		23.12		0.5
				120	63	23.84		24.21		23.45		0
				120	125	23.40		23.50		22.73		0.5
				243	0	23.34		23.57		23.00		0.5
			QPSK	1	1	23.78		24.10		23.70		0
				1	123	23.88		24.24		23.46		0
				1	243	23.99		23.85		23.21		0
				120	0	22.92		23.13		22.65		1
				120	63	23.89		24.24		23.44		0
				120	125	22.89		22.92		22.25		1
				243	0	22.84		23.04		22.43		1
			16QAM	1	1	22.74		23.00		22.74		1
			64QAM	1	1	21.49		21.90		21.41		2.5
			256QAM	1	1	19.04		19.41		18.97		4.5
		CP	QPSK	1	1	22.22		22.57		22.09		1.5

NR Band n77_ 100㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	23.82				23.71		0
				1	137	23.97				23.40		0
				1	271	23.82				23.38		0
				135	0	23.47				23.04		0.5
				135	69	23.97				23.41		0
				135	138	23.39				22.72		0.5
				270	0	23.41				22.97		0.5
			QPSK	1	1	23.91				23.74		0
				1	137	23.96				23.46		0
				1	271	23.85				23.40		0
				135	0	23.04				22.57		1
				135	69	23.91				23.42		0
				135	138	22.86				22.34		1
				270	0	22.89				22.44		1
			16QAM	1	1	22.89				22.79		1
			64QAM	1	1	21.57				21.51		2.5
			256QAM	1	1	19.12				19.06		4.5
		CP	QPSK	1	1	22.24				22.18		1.5

[NR Band n77 DOD Conducted Power_ P_{max}] – Power Class 3

NR Band n77_10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						630334	633334	636332	
						3445.01 ㎒	3500.01㎒	3544.98㎒	
10 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.13	24.38	24.63	0
				1	12	24.16	24.37	24.63	0
				1	22	24.23	24.38	24.64	0
				12	0	24.00	24.19	24.50	0.5
				12	6	24.17	24.40	24.69	0
				12	12	24.00	24.23	24.50	0.5
				24	0	23.98	24.15	24.52	0.5
			QPSK	1	1	24.20	24.37	24.63	0
				1	12	24.18	24.32	24.67	0
				1	22	24.22	24.35	24.72	0
				12	0	23.46	23.60	23.98	1
				12	6	24.19	24.39	24.62	0
				12	12	23.53	23.72	24.00	1
				24	0	23.48	23.63	23.98	1
			16QAM	1	1	23.51	23.54	23.83	1
			64QAM	1	1	22.24	22.42	22.68	2.5
			256QAM	1	1	19.77	19.91	20.26	4.5
		CP	QPSK	1	1	23.01	23.15	23.41	1.5

NR Band n77_15 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						630500	633334	636166	
						3457.5 ㎒	3500.01㎒	3542.49㎒	
15 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.25	24.43	24.58	0
				1	18	24.31	24.41	24.62	0
				1	36	24.45	24.50	24.78	0
				18	0	24.12	24.29	24.36	0.5
				18	9	24.30	24.49	24.68	0
				18	18	24.17	24.24	24.51	0.5
				36	0	24.12	24.26	24.49	0.5
			QPSK	1	1	24.26	24.42	24.55	0
				1	18	24.35	24.50	24.71	0
				1	36	24.43	24.57	24.75	0
				18	0	23.60	23.71	23.89	1
				18	9	24.30	24.43	24.70	0
				18	18	23.65	23.76	23.99	1
				36	0	23.61	23.77	23.95	1
			16QAM	1	1	23.58	23.85	23.92	1
			64QAM	1	1	22.22	22.49	22.54	2.5
			256QAM	1	1	19.81	20.08	20.15	4.5
		CP	QPSK	1	1	23.01	23.27	23.36	1.5

NR Band n77_20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						630668	633334	636000	
						3460.02㎒	3500.01㎒	3540㎒	
20 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.33	24.54	24.54	0
				1	26	24.36	24.47	24.52	0
				1	49	24.37	24.44	24.62	0
				25	0	24.21	24.22	24.22	0.5
				25	13	24.38	24.41	24.54	0
				25	26	24.20	24.29	24.47	0.5
				50	0	24.16	24.25	24.28	0.5
			QPSK	1	1	24.32	24.53	24.60	0
				1	26	24.43	24.49	24.50	0
				1	49	24.41	24.48	24.68	0
				25	0	23.69	23.72	23.76	1
				25	13	24.29	24.45	24.48	0
				25	26	23.73	23.75	23.99	1
				50	0	23.69	23.68	23.79	1
			16QAM	1	1	23.49	23.75	23.79	1
			64QAM	1	1	22.42	22.51	22.56	2.5
			256QAM	1	1	19.95	20.11	20.20	4.5
		CP	QPSK	1	1	23.16	23.28	23.37	1.5

NR Band n77_30 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						631000	633334	635666	
						3465㎒	3500.01㎒	3534.99㎒	
30 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.41	24.64	24.74	0
				1	39	24.28	24.46	24.68	0
				1	76	24.39	24.61	24.88	0
				36	0	24.22	24.36	24.50	0.5
				36	21	24.36	24.59	24.71	0
				36	42	24.22	24.37	24.61	0.5
				75	0	24.19	24.43	24.61	0.5
			QPSK	1	1	24.35	24.69	24.80	0
				1	39	24.30	24.55	24.73	0
				1	76	24.45	24.76	24.89	0
				36	0	23.68	23.88	24.04	1
				36	21	24.36	24.56	24.71	0
				36	42	23.70	23.91	24.05	1
				75	0	23.69	23.84	24.02	1
			16QAM	1	1	23.52	23.88	24.04	1
			64QAM	1	1	22.35	22.65	22.80	2.5
			256QAM	1	1	19.99	20.30	20.47	4.5
		CP	QPSK	1	1	23.21	23.44	23.60	1.5

NR Band n77_40 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						631334		635332	
						3470.01㎒		3529.98㎒	
40 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.48		24.72	0
				1	53	24.40		24.56	0
				1	104	24.67		24.82	0
				50	0	24.30		24.56	0.5
				50	28	24.49		24.58	0
				50	56	24.37		24.52	0.5
				100	0	24.24		24.56	0.5
			QPSK	1	1	24.52		24.52	0
				1	53	24.46		24.63	0
				1	104	24.70		24.96	0
				50	0	23.82		23.95	1
				50	28	24.41		24.63	0
				50	56	23.89		24.02	1
				100	0	23.85		24.05	1
			16QAM	1	1	23.66		23.91	1
			64QAM	1	1	22.35		22.63	2.5
			256QAM	1	1	20.14		20.31	4.5
		CP	QPSK	1	1	23.28		23.43	1.5

NR Band n77_50 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
						631668		635000	
						3475.02㎒		3525㎒	
50 ㎒	30	DFT-s	pi/2 BPSK	1	1	24.15		24.25	0
				1	67	24.13		24.22	0
				1	131	24.05		24.35	0
				64	0	23.97		24.12	0.5
				64	35	24.18		24.30	0
				64	69	24.02		24.19	0.5
				128	0	24.02		24.17	0.5
			QPSK	1	1	24.15		24.27	0
				1	67	24.20		24.26	0
				1	131	24.16		24.45	0
				64	0	23.44		23.61	1
				64	35	24.14		24.27	0
				64	69	23.42		23.67	1
				128	0	23.44		23.62	1
			16QAM	1	1	23.35		23.72	1
			64QAM	1	1	22.17		22.31	2.5
			256QAM	1	1	19.83		19.93	4.5
		CP	QPSK	1	1	22.89		23.00	1.5

NR Band n77_60 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01㎒		
60 ㎒	30	DFT-s	pi/2 BPSK	1	1		24.23		0
				1	81		24.37		0
				1	160		24.31		0
				81	0		24.13		0.5
				81	41		24.39		0
				81	81		24.13		0.5
				162	0		24.21		0.5
			QPSK	1	1		24.34		0
				1	81		24.46		0
				1	160		24.44		0
				81	0		23.64		1
				81	41		24.38		0
				81	81		23.66		1
				162	0		23.58		1
			16QAM	1	1		23.41		1
			64QAM	1	1		22.27		2.5
			256QAM	1	1		19.79		4.5
		CP	QPSK	1	1		23.07		1.5

NR Band n77_70 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01㎒		
70 ㎒	30	DFT-s	pi/2 BPSK	1	1		24.13		0
				1	95		24.19		0
				1	187		24.34		0
				90	0		24.10		0.5
				90	50		24.28		0
				90	99		24.13		0.5
				180	0		24.10		0.5
			QPSK	1	1		24.11		0
				1	95		24.26		0
				1	187		24.44		0
				90	0		23.59		1
				90	50		24.26		0
				90	99		23.67		1
				180	0		23.59		1
			16QAM	1	1		23.45		1
			64QAM	1	1		22.23		2.5
			256QAM	1	1		19.78		4.5
		CP	QPSK	1	1		22.95		1.5

NR Band n77_80 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01㎒		
80 ㎒	30	DFT-s	pi/2 BPSK	1	1		24.17		0
				1	109		24.22		0
				1	215		24.40		0
				108	0		24.10		0.5
				108	55		24.28		0
				108	109		24.16		0.5
				216	0		24.10		0.5
			QPSK	1	1		24.18		0
				1	109		24.23		0
				1	215		24.47		0
				108	0		23.57		1
				108	55		24.32		0
				108	109		23.67		1
				216	0		23.53		1
			16QAM	1	1		23.33		1
			64QAM	1	1		22.13		2.5
			256QAM	1	1		19.72		4.5
		CP	QPSK	1	1		22.93		1.5

NR Band n77_90 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01㎒		
90 ㎒	30	DFT-s	pi/2 BPSK	1	1		24.10		0
				1	123		24.22		0
				1	243		24.46		0
				120	0		24.08		0.5
				120	63		24.27		0
				120	125		24.18		0.5
				243	0		24.10		0.5
			QPSK	1	1		24.11		0
				1	123		24.27		0
				1	243		24.49		0
				120	0		23.55		1
				120	63		24.27		0
				120	125		23.61		1
				243	0		23.56		1
			16QAM	1	1		23.28		1
			64QAM	1	1		22.15		2.5
			256QAM	1	1		19.70		4.5
		CP	QPSK	1	1		22.88		1.5

NR Band n77_100 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		24.11		0
				1	137		24.27		0
				1	271		24.53		0
				135	0		24.10		0.5
				135	69		24.29		0
				135	138		24.18		0.5
				270	0		24.08		0.5
			QPSK	1	1		24.12		0
				1	137		24.21		0
				1	271		24.55		0
				135	0		23.58		1
				135	69		24.28		0
				135	138		23.68		1
				270	0		23.60		1
			16QAM	1	1		23.43		1
			64QAM	1	1		22.14		2.5
			256QAM	1	1		19.78		4.5
		CP	QPSK	1	1		22.92		1.5