



May 24, 2023

19610 AAC IEEE 802 112 WFF (20MHz, MCSS, 90pc duty yorke)	UID	Rev	Communication System Name	Group	PAR (dB)	$Unc^{E} k = 2$
1961 AAC IEEE 802.11 as WIF (20MHz, MCSS, 90pc daily cycle) W.AN	10609	AAC	IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)	WLAN	8.57	±9.6
19512 AAC IEEE 80.21 tas WIFE (00 MHz, MCSS, 90pc day yoyle) W.AAN		_		WLAN	8.78	±9.6
19615 AAC IEEE 802.11 as WIF (20MHz, MCSS, 90pc day yorke)				WLAN	8.70	±9.6
19515 AAC IEEE 802.11 as WIF (20MHz, MCSS, 90pc duty cycle) W.AN 8.82 9.56	10612	AAC		WLAN	8.77	±9.6
19515 AAC IEEE 802.11 as WIFE (00MHz, MCSS, 90pc duty cycle) WLAN 8.82 92.6	10613	AAC	IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.6
10616 AAC IEEE 802 1-1ac WFF (GMHz, MCSS, 90pc duty cycle) WILAN 8.82 19.6	10614	AAC	IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)	WLAN	8.59	
19617 ACC REER 802 11 Na WIFL (40MHz, MCSS) 80pc daty gycle) WLAN 6.81 19.0	10615	-		WLAN	8.82	
10617 ACC IEEE 802 11se WFI (40 MHz, MCSS, 09pc duty cycle) WLAN 8.58 9.96	10616	AAC		WLAN	8.82	
10618 AAC IEEE 802 11se WFI (40 MHz, MCSS, 90pc duty cycle) WLAN 8.85 29.6	10617	AAC	IEEE 802.11ac WiFi (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.81	
10619 AAC IEEE 802 11as WFI (40 MHz, MCSA, 90pc duty cycle) WLAN 8.87 29.6	10618	AAC	IEEE 802.11ac WiFi (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.58	
1980 AC REE 802.11ac Wiff (40 MHz, MC54, 90pc dufy cycle) WLAN 8.77 2.96	10619	AAC	IEEE 802.11ac WiFi (40 MHz, MCS3, 90pc duty cycle)	WLAN	8.86	
10621 AC EEE 802.11ac Wiff (40 MHz, MCS6, 80pc duty cycle) WLAN 8.87 1.96	10620	AAC	IEEE 802.11ac WiFi (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.87	
10622 AAC EEE 80.211ac Wirl (40 MHz, MC58, 90pc duty cycle) W.AN 8.88 2.96, 6 10624 AAC EEE 80.211ac Wirl (40 MHz, MC58, 90pc duty cycle) W.AN 8.99 9.96, 10.925 AAC EEE 80.211ac Wirl (40 MHz, MC58, 90pc duty cycle) W.AN 8.99 9.96, 10.925 AAC EEE 80.211ac Wirl (40 MHz, MC58, 90pc duty cycle) W.AN 8.99 9.96, 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.89 9.96, 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 19.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 19.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.83 9.9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.83 9.9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.83 9.9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.9.6 10.925 AAC EEE 80.211ac Wirl (80 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.9.6 10.925 AAC EEE 80.211ac Wirl (160 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.9.6 10.925 AAC EEE 80.211ac Wirl (160 MHz, MC58, 90pc duty cycle) W.AN 8.81 9.9.6 10.925 AAC EEE 80.211ac Wirl (160 MHz, MC58, 90pc duty cycle)	10621	AAC		WLAN	8.77	
10628] AAC EEE 60.211ac Wirl (40 MHz, MCS7, 90pc duty cycle) MLAN 8.96 2.9.6 10626 AAC EEE 60.211ac Wirl (40 MHz, MCS8, 90pc duty cycle) MLAN 8.96 2.9.6 10626 AAC EEE 60.211ac Wirl (40 MHz, MCS8, 90pc duty cycle) MLAN 8.96 2.9.6 10627 AAC EEE 60.211ac Wirl (60 MHz, MCS8, 90pc duty cycle) MLAN 8.88 2.9.6 10627 AAC EEE 60.211ac Wirl (60 MHz, MCS1, 90pc duty cycle) MLAN 8.88 2.9.6 10627 AAC EEE 60.211ac Wirl (60 MHz, MCS1, 90pc duty cycle) MLAN 8.68 1.9.6 10628 AAC EEE 60.211ac Wirl (60 MHz, MCS1, 90pc duty cycle) MLAN 8.67 2.9.6 10629 AAC EEE 60.211ac Wirl (60 MHz, MCS3, 90pc duty cycle) MLAN 8.67 2.9.6 10639 AAC EEE 60.211ac Wirl (60 MHz, MCS3, 90pc duty cycle) MLAN 8.72 2.9.6 10639 AAC EEE 60.211ac Wirl (60 MHz, MCS3, 90pc duty cycle) MLAN 8.74 2.9.6 10639 AAC EEE 60.211ac Wirl (60 MHz, MCS3, 90pc duty cycle) MLAN 8.74 2.9.6 10639 AAC EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.74 2.9.6 10639 AAC EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.74 2.9.6 10639 AAC EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.74 2.9.6 10639 AAC EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAC EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (80 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (160 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (160 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (160 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE 60.211ac Wirl (160 MHz, MCS3, 90pc duty cycle) MLAN 8.80 2.9.6 10639 AAD EEE	10622	AAC		WLAN	8.68	
1962 AAC IEEE 802.11ac Wiff (60 MHz, MCS8, 90pc duty cycle) WLAN 8.95 19.6	10623	AAC	IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle)	WLAN		
1982 AAC IEEE 802.11a WIF (40 MHz, MCS8, 90pc duty cycle) WILAN 8.89 19.6				WLAN		
19626 AAC IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle) WLAN 8.83 19.6 19627 AAC IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle) WLAN 8.71 19.6 19629 AAC IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle) WLAN 8.85 19.6 19630 AAC IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle) WLAN 8.81 19.6 19631 AAC IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle) WLAN 8.81 19.6 19632 AAC IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle) WLAN 8.81 19.6 19633 AAC IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle) WLAN 8.81 19.6 19634 AAC IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle) WLAN 8.83 19.6 19635 AAC IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle) WLAN 8.83 19.6 19634 AAC IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle) WLAN 8.83 19.6 19635 AAC IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle) WLAN 8.81 19.6 19636 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.81 19.6 19637 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.85 19.6 19638 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.86 19.6 19639 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.86 19.6 19639 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.86 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.86 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.86 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 8.89 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 9.06 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 9.06 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) WLAN 9.06 19.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc	10625	AAC		WLAN		
19627 AAC IEEE 802.11ac Wiff (80 MHz, MCSS, 90pc duty cycle) WILAN 8.88 19.6	10626	AAC	IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle)	WLAN		
19629 AAC IEEE 802.11ac WiFi (190 MHz, MCSS, 90pc duty cycle) MLAN 8.71 19.6	10627	AAC	IEEE 802.11ac WiFi (80 MHz, MCS1, 90pc duty cycle)	WLAN		
	10628	AAC	IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle)	WLAN	_	
19630 AAC IEEE 802.11ac WiFi (80 MHz, MCSS, 90pc duty cycle) WLAN 8.81 49.6	10629					
19631 ACC IEEE 802.11ac WiFi (60 MHz, MCSS, 90pc duty cycle) WLAN			IEEE 802.11ac WiFi (80 MHz, MCS4, 90pc duty cycle)			
19632 ACC IEEE 802.11ac WiFi (60 MHz, MCSF, 90pc duty cycle) WLAN	10631	AAC	IEEE 802.11ac WiFi (80 MHz, MCS5, 90pc duty cycle)		_	
1963 AAC IEEE 802.11ac WiFI (80 MHz, MCS7, 90pc duty cycle) WLAN	10632	AAC	IEEE 802.11ac WiFi (80 MHz, MCS6, 90pc duty cycle)		_	
19635 AAC	10633	AAC	IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle)			
19635 AAC	10634	AAC	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)			
19636 AAD	10635	AAC	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)			
19637 AAD IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle) WILAN 8.86 ±9.6 19638 AAD IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle) WILAN 8.86 ±9.6 19639 AAD IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle) WILAN 8.98 ±9.6 19640 AAD IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle) WILAN 8.99 ±9.6 19641 AAD IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle) WILAN 9.06 ±9.6 19642 AAD IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) WILAN 9.06 ±9.6 19643 AAD IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) WILAN 8.89 ±9.6 19644 AAD IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) WILAN 8.89 ±9.6 19645 AAD IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) WILAN 9.05 ±9.6 19646 AAI IEEF 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) WILAN 9.11 ±9.6 19646 AAI IEFT DO (SC-FDMA, 18 B, SMHz, DPSK, UL Subframe=2.7) ITE-TDD 11.96 ±9.6 19647 AAG ITE-TDD (SC-FDMA, 18 B, SMHz, DPSK, UL Subframe=2.7) ITE-TDD 11.96 ±9.6 19648 AAI ITE-TDD (SC-FDMA, 18 B, 20 MHz, CPSK, UL Subframe=2.7) ITE-TDD 11.96 ±9.6 19659 AAF ITE-TDD (DFDMA, 5 MHz, E-TM 3.1, Clipping 44%) ITE-TDD 5.91 ±9.6 19650 AAF ITE-TDD (DFDMA, 5 MHz, E-TM 3.1, Clipping 44%) ITE-TDD 7.42 ±9.6 19650 AAF ITE-TDD (DFDMA, 15 MHz, E-TM 3.1, Clipping 44%) ITE-TDD 7.42 ±9.6 19650 AAF Pulse Waveform (200Hz, 20%) Test 10.00 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 10.00 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 0.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 0.99 ±9.6 19670 AAC IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle) WILAN 8.77 ±9.6 19670 AAC IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle) WILAN 8.78 ±9.6 19670 AAC IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle) WILAN 8.78 ±9.6 19680 AAC IEEE 802.11ax (20 MHz, M	10636	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle)	WLAN	_	
19639 AAD IEEE 802.11ac WiFi (180 MHz, MCS2, 90pc duty cycle) WLAN 8.85 ±9.6	10637	AAD	IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle)			
19639 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 8.98 ±9.6 19640 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 8.98 ±9.6 19641 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.06 ±9.6 19642 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.06 ±9.6 19643 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.06 ±9.6 19644 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.05 ±9.6 19644 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.15 ±9.6 19645 AAD IEEE 802.11ac WiFi (180 MHz, MCSS, 90pc duty cycle) WLAN 9.11 ±9.6 19646 AAH ITE-TDD (SC-FDMA, 18 R, 54 MHz, C9SK, UL Subframe=2.7) LTE-TDD 11.96 ±9.6 19646 AAH LTE-TDD (SC-FDMA, 18 R, 54 MHz, C9SK, UL Subframe=2.7) LTE-TDD 11.96 ±9.6 19647 AAG LTE-TDD (SC-FDMA, 18 R, 20 MHz, E-TM 3.1, Clipping 44%) LTE-TDD (SD-FDMA, 5 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.91 ±9.6 19652 AAF LTE-TDD (CPDMA, 5 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.91 ±9.6 19655 AAF LTE-TDD (CPDMA, 5 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.96 ±9.6 19655 AAF LTE-TDD (CPDMA, 20 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.96 ±9.6 19656 AAE LTE-TDD (CPDMA, 20 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.96 ±9.6 19656 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 80%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 80%) Test 6.99 ±9.6 19660 AAB Pulse Waveform (200Hz, 80%) Test 6.99 ±9.6 19660 AAC IEEE 802.11ax (20 MHz, MCSS, 90pc duty cycle) WLAN 8.57 ±9.6 19660 AAC IEEE 802.11ax (20 MHz, MCS	10638	AAD	IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle)	WLAN		
19640 AAD	10639	AAD	IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle)	WLAN		
19641 AAD	10640	AAD	IEEE 802.11ac WiFi (160 MHz, MCS4, 90pc duty cycle)	WLAN		
19642 AAD	10641	AAD	IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle)			
10643 AAD	10642	AAD		WLAN		
10644 AAD	10643	AAD	IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle)			
10645 AAD	10644		IEEE 802.11ac WiFi (160 MHz, MCS8, 90pc duty cycle)	WLAN		
10646		AAD		WLAN	9.11	
10647 AAG		AAH		LTE-TDD	11.96	
10648	10647	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD		
10852	10648			CDMA2000		
10653				LTE-TDD		
10854 AAE LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%) LTE-TDD 6.96 ±9.6	10653	AAF	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD		
10655 AAF	10654	AAE	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD		
10659 AAB Pulse Waveform (200Hz, 10%) Test 10.00 ±9.6	10655		LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD		
10659 AAB Pulse Waveform (200Hz, 20%) Test 6.99 ±9.6	10658	AAB	Pulse Waveform (200Hz, 10%)	Test	10.00	
1966 AAB	10659			Test		
Test 2.22 ±9.6	10660					
Test 0.97 ±9.6	10661					
10670 AAA Bluetooth Low Energy Bluetooth 2.19 ±9.6 10671 AAC IEEE 802.11ax (20 MHz, MCS0, 90pc duty cycle) WLAN 8.57 ±9.6 10672 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.78 ±9.6 10673 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.78 ±9.6 10674 AAC IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle) WLAN 8.74 ±9.6 10675 AAC IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle) WLAN 8.90 ±9.6 10676 AAC IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle) WLAN 8.77 ±9.6 10677 AAC IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle) WLAN 8.73 ±9.6 10678 AAC IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle) WLAN 8.78 ±9.6 10679 AAC IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle) WLAN 8.89 ±9.6 10680 AAC IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle) WLAN 8.80 ±9.6 10681 AAC IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle) WLAN 8.80 ±9.6 10682 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.82 ±9.6 10683 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.83 ±9.6 10684 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.83 ±9.6 10685 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.82 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) WLAN 8.42 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.26 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.26 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.26 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.33 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.33 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.33 ±9.6 10686 AAC IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) WLAN 8.33 ±9.6 10687 AAC IEEE 802.1	10662					
10671	10670			Bluetooth		
10672	10671					
10673	10672					
10674	10673			WLAN	_	
10675 AAC	10674					
10676 AAC	10675		(2.2
10677 AAC	10676					
10679 AAC	10677					
10679 AAC	10678		IEEE 802.11ax (20 MHz, MCS7, 90pc duty cycle)			
10680 AAC	10679		IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)			
10681 AAC IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle)	10680					
10682 AAC	10681		IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle)		_	
10683 AAC	10682	11.01.11.11.11	IEEE 802.11ax (20 MHz, MCS11, 90pc duty cycle)		_	
10684 AAC IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle) WLAN 8.26 ±9.6 10685 AAC IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle) WLAN 8.33 ±9.6	10683	AAC	IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle)			
10685 AAC IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle) WLAN 8.33 ±9.6	10684	AAC	IEEE 802.11ax (20 MHz, MCS1, 99pc duty cycle)			
10686 AAC IEEE 802 11av (20 MHz MCC2 00cc duty cucle)	10685	AAC			_	
	10686	AAC	IEEE 802.11ax (20 MHz, MCS3, 99pc duty cycle)			

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k =
10687	AAC	IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)	WLAN	8.45	±9.6
10688	AAC	IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)	WLAN	8.29	±9.6
10689	AAC	IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle)	WLAN	8.55	±9.6
10690	AAC	IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
10691	AAC	IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)	WLAN	8.25	±9.6
10692	AAC	IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)	WLAN	8.29	
10693	AAC	IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.6
10694	AAC	IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle)	WLAN		±9.6
10695	AAC	IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle)		8.57	±9.6
10696	AAC	IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.78	±9.6
10697	AAC	IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.91	±9.6
10698	AAC	IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.61	±9.6
10699	AAC	IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.89	±9.6
10700	AAC		WLAN	8.82	±9.6
10701	AAC	IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.73	±9.6
-		IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle)	WLAN	8.86	±9.6
10702	AAC	IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle)	WLAN	8.70	±9.6
10703	AAC	IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
10704	AAC	IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.6
10705	AAC	IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.6
10706	AAC	IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle)	WLAN	8.66	±9.6
10707	AAC	IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.32	±9.6
10708	AAC	IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6
10709	AAC	IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6
10710	AAC	IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle)	WLAN	8.29	_
10711	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN		±9.6
10712	AAC	IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)		8.39	±9.6
0713	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	8.67	±9.6
10714	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	8.33	±9.6
10715	AAC		WLAN	8.26	±9.6
		IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	8.45	±9.6
0716	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.6
10717	AAC	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	8.48	±9.6
10718	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	8.24	±9.6
10719	AAC	IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9.6
10720	AAC	IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle)	WLAN	8.87	±9.6
10721	AAC	IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)	WLAN	8.76	±9.6
10722	AAC	IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.55	±9.6
10723	AAC	IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.6
10724	AAC	IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.90	±9.6
10725	AAC	IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6
10726	AAC	IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle)	WLAN	8.72	±9.6
10727	AAC	IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.66	
0728	AAC	IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)	WLAN	2000000	±9.6
0729	AAC	IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle)		8.65	±9.6
0730	AAC	IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle)	WLAN	8.64	±9.6
0731	AAC	IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle)	WLAN	8.67	±9.6
0732			WLAN	8.42	±9.6
	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	8.46	±9.6
0733	AAC	IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)	WLAN	8.40	±9.6
0734	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)	WLAN	8.25	±9.6
0735	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.6
0736	AAC	IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)	WLAN	8.27	±9.6
0737	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6
0738	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)	WLAN	8.42	±9.6
0739	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)	WLAN	8.29	±9.6
0740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	8.48	±9.6
0741	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle)	WLAN	8.40	±9.6
0742	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle)	WLAN	8.43	±9.6
0743	AAC	IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle)	WLAN		
0744	AAC	IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle)	WLAN	8.94	±9.6
0745	AAC	IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle)		9.16	±9.6
0746	AAC	IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle)	WLAN	8.93	±9.6
0746	AAC		WLAN	9.11	±9.6
		IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.6
0748	AAC	IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6
0749	AAC	IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle)	WLAN	8.90	±9.6
0750	AAC	IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6
0751	AAC	IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
0752	AAC	IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6

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10753	AAC	IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±9.6
10754	AAC	IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle)	WLAN	8.94	±9.6
10755	AAC	IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle)	WLAN	8.64	±9.6
10756	AAC	IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle)	WLAN	8.77	±9.6
10757	AAC	IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle)	WLAN	8.77	±9.6
10758	AAC	IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)	WLAN	8.69	±9.6
10759	AAC	IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)	WLAN	8.58	±9.6
10760	AAC	IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle)	WLAN	8.49	±9.6
10761	AAC	IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6
10762	AAC	IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle)	WLAN	8.49	±9.6
10763	AAC	IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle)	WLAN	8.53	±9.6
10764	AAC	IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle)	WLAN	8.54	±9.6
10765	AAC	IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle)	WLAN	8.54	±9.6
10766	AAC	IEEE 802.11ax (160 MHz, MCS11, 99pc duty cycle)	WLAN	8.51	±9.6
10767	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	±9.6
10768	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
10769	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
10770	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10771	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10772	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6
10773	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	±9.6
10774	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10775	AAD	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6
10776	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6
10778	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	±9.6
10779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	±9.6
10780	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6
10781	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6
10782	AAD	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	±9.6
10783	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6
10784	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	±9.6
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	AAD	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
10797	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6
10798	AAD	5G NR (CP-OFDM, 1 RB, 50 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 (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6
10799	AAD	5G NR (CP-OFDM, 1 RB, 80 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 (CP-OFDM, 1 RB, 90 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 (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	±9.6
10805	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) 5G NR (CP-OFDM, 50% RB, 10 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 (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10809	AAD		5G NR FR1 TDD	8.37	±9.6
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz) 5G NR (CP-OFDM, 50% RB, 40 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 (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10817	AAE	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz) 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, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	±9.6
10821	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	±9.6
10822	AAD	5G NR (CP-OFDM, 100% RB, 25 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	8.41	±9.6
. 5020	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	±9.6
10824	AAU		5G NR FR1 TDD	8.39	±9.6
10824	AAD	5G NR (CP-OEDM 100% PR 60 MH- OBEY 20 HI-)	FO UP PRI PT		
10824 10825 10827	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD 5G NR FR1 TDD	8.41 8.42	±9.6 ±9.6

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10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	±9.6
0830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	±9.6
0831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	±9.6
0832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	±9.6
0833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
0834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	±9.6
0835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
0836	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	±9.6
0837	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	±9.6
0839	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
0840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	±9.6
0841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	±9.6
0843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	±9.6
0844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
0846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
0854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
0855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6
0856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6
0857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	±9.6
0858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6
0859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
0860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
0861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	±9.6
0863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
0864	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6
0865	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
0866	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	±9.6
0869	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
0870	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	±9.6
0871	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
0872	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	±9.6
0873	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6
0874	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
0875	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6
0876	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	±9.6
0877	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	±9.6
0878	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6
0879	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±9.6
0880	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	±9.6
0881	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
0882	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	±9.6
0883	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	±9.6
0884	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	±9.6
0885	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6
0886	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
0887	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6
8880	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±9.6
0889	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	±9.6
0890	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	±9.6
0891	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	±9.6
892	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6
0897	AAC	5G NR (DFT-s-OFDM, 1 RB, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	±9.6
0898	AAB	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	±9.6
0899	AAB	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	±9.6
900	AAB	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
902	AAB	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0903	AAB	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0904	AAB	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0905	AAB	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0906	AAB	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0907	AAC	5G NR (DFT-s-OFDM, 50% RB, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	±9.6
908	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	±9.6
909	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	±9.6
0910	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	UncE k =
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
0914	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	±9.6
0915	AAB	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6
0916	AAB	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	
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		±9.6
10919	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)		5.86	±9.6
10920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	±9.6
10921	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	±9.6
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10923	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±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	5.84	±9.6
10926	AAB		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
		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	
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD		±9.6
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15kHz)		5.90	±9.6
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	±9.6
10941	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	±9.6
10942	AAC		5G NR FR1 FDD	5.83	±9.6
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.6
	-	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	
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)			±9.6
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	8.42	±9.6
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)		8.14	±9.6
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	±9.6
0959	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 KHz)	5G NR FR1 FDD	8.61	±9.6
0960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 KHz)	5G NR FR1 FDD	8.33	±9.6
0961	AAB		5G NR FR1 TDD	9.32	±9.6
0962	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	±9.6
		5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	±9.6
0963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	±9.6
0964	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	±9.6
0965	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	±9.6
0966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	±9.6
0967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	±9.6
0968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	±9.6
0972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	±9.6
0973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	±9.6
0974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	
0978	AAA	ULLA BDR	ULLA		±9.6
0979	AAA	ULLA HDR4		1.16	±9.6
0980	AAA	ULLA HDR8	ULLA	8.58	±9.6
0981	AAA	ULLA HDRp4	ULLA	10.32	±9.6
	rum		ULLA	3.19	±9.6
0982	AAA	ULLA HDRp8	ULLA	3.43	±9.6

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AAA	Communication System Name Gr 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 56			
AAA			PAR (dB)	$Unc^{E} k = 2$
	5G NR DL (CP-OFDM TM 2.1 FOMUS 64 OAM 45111)	NR FR1 TDD	9.31	±9.6
AAA	5G NR DL (CP-OFDM TM 3.1 40 MHz 64 CAM 2014 L)	NR FR1 TDD	9.42	±9.6
AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-OAM, 20 kHz)	NR FR1 TDD	9.54	±9.6
AAA	5G NR DI (CP-OEDM TM 3.1 SOMUL CA CAMA SOLLI)		9.50	±9.6
AAA	5G NR DL (CP-OFDM TM 3.1. ZOMHZ 64 OAM 20HHZ)		9.53	±9.6
AAA	5G NR DI (CP-OFDM TM 2.1 90 MUT CA CAM COLLE)		9.38	±9.6
AAA	5G NR DL (CP-OFDM TM 3.1 DOMHE CA CAM DOLL)		9.33	±9.6
AAA	5G NR DL (CP-OFDM TM 3.1. 20 MHz, 64 OAM 45 Hz)		9.52	±9.6
AAA	5G NB DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 KHZ) 5G	NR FR1 TDD	10.24	±9.6
AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 KHz) 5G	NR FR1 TDD	10.73	±9.6
	5G NR DI (CR-OEDM TM 2 1 20MH- 24 CM 15-14-15-15-15-15-15-15-15-15-15-15-15-15-15-		8.70	±9.6
	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G	NR FR1 FDD	8.55	±9.6
	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G	NR FR1 FDD	8.46	±9.6
	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) 5G	NR FR1 FDD	8.51	±9.6
	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz) 5G	NR FR1 FDD	8.76	±9.6
	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G	NR FR1 FDD	8.95	±9.6
	5G NR DL (CP OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G	NR FR1 FDD	8.96	±9.6
	JEEE 803 11ho (200 MHz A 402 Co. A 40 C	NR FR1 FDD	8.68	±9.6
	IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle) WL	AN	8.47	±9.6
.,	IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle) WL	AN	8.45	±9.6
	IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL	AN	8.44	±9.6
	IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle) WL	AN	8.44	±9.6
	IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle) WL	AN		±9.6
	IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle) WL	AN		±9.6
	IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle) WL	AN		±9.6
	IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)	AN		±9.6
	IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)	AN		±9.6
7	IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)	30.5		±9.6
	IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle)			
AAA	IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)			±9.6
AAA	IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)			±9.6
AAA	IEEE 802 11he (320 MHz, MCS0, 00no duty availa)			±9.6
	AAA AAA AAA AAA AAA AAA AAA AAA AAA AA	AAA 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) 5G AAA 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) 5G AAA 1EEE 802.11be (320 MHz, MCS1, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320 MHz, MCS3, 99pc duty cycle) WL AAA 1EEE 802.11be (320	AAA 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G NR FR1 TDD AAA 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD AAA 15G NR FR1 FDD 5G NR FR1 FDD <	AAA 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD 9.53 AAA 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD 9.33 AAA 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD 9.33 AAA 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) 5G NR FR1 TDD 9.52 AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G NR FR1 TDD 10.24 AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G NR FR1 TDD 10.73 AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD 8.70 AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD 8.55 AAA 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz) 5G NR FR1 FDD 8.46 AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD 8.51 AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD 8.51 AAA 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) 5G NR FR1 FDD 8.95 AAA 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)

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

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ANNEX E DIPOLE CALIBRATION CERTIFICATE

Dipole 835 MHz

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





C

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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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

Client

CTTL (Auden)

Certificate No: CD835V3-1023_Aug22

Dbject	CD835V3 - SN: 1	023	
Calibration procedure(s)	QA CAL-20.v7 Calibration Proce	dure for Validation Sources in air	
Calibration date:	August 25, 2022		
The measurements and the uncerta	ainties with confidence pr	anal standards, which realize the physical unit obability are given on the following pages and y facility: environment temperature $(22 \pm 3)^{\circ}$ C	d are part of the certificate.
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
OWEI SEIISOI IVIII 251	The state of the s		
ower concer NRP-701		04-Apr-22 (No. 217-03525)	
	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
deference 20 dB Attenuator type-N mismatch combination	SN: BH9394 (20k) SN: 310982 / 06327	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528)	Apr-23 Apr-23
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21)	Apr-23 Apr-23 Dec-22 Dec-22
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (in house)	Apr-23 Apr-23 Dec-22
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards Power meter Agilent 4419B	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21)	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781 ID # SN: GB42420191	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (in house) 09-Oct-09 (in house check Oct-20)	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check In house check: Oct-23
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781 ID # SN: GB42420191 SN: US38485102	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (In house) 09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20)	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check In house check: Oct-23 In house check: Oct-23
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781 ID # SN: GB42420191 SN: US38485102 SN: US37295597	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (in house) 09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20)	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check In house check: Oct-23 In house check: Oct-23 In house check: Oct-23
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781 ID # SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477 Name	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (In house) 09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-23
Reference 20 dB Attenuator Type-N mismatch combination Probe EF3DV3 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06	SN: BH9394 (20k) SN: 310982 / 06327 SN: 4013 SN: 781 ID # SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	04-Apr-22 (No. 217-03527) 04-Apr-22 (No. 217-03528) 28-Dec-21 (No. EF3-4013_Dec21) 22-Dec-21 (No. DAE4-781_Dec21) Check Date (In house) 09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20)	Apr-23 Apr-23 Dec-22 Dec-22 Scheduled Check In house check: Oct-23

Certificate No: CD835V3-1023_Aug22

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





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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

References

[1] ANSI-C63.19-2019 (ANSI-C63.19-2011) American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna
 (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes.
 In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a
 distance of 15 mm above the top metal edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All
 figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector
 is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a
 directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a Vector Network Analyzer.
 The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E-field distribution: E field is measured in the x-y-plane with an isotropic E-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 15 mm (in z) above the metal top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, in the plane above the dipole surface.

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%.

Certificate No: CD835V3-1023_Aug22 Page 2 of 5



Measurement Conditions

ni page 1.	
DASY5	V52.10.4
HAC Test Arch	
15 mm	
dx, dy = 5 mm	
835 MHz ± 1 MHz	
< 0.05 dB	
	DASY5 HAC Test Arch 15 mm dx, dy = 5 mm 835 MHz ± 1 MHz

Maximum Field values at 835 MHz

E-field 15 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW input power	112.2 V/m = 41.00 dBV/m
Maximum measured above low end	100 mW input power	108.6 V/m = 40.72 dBV/m
Averaged maximum above arm	100 mW input power	110.4 V/m ± 12.8 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters

Frequency	Return Loss	Impedance
800 MHz	17.4 dB	41.1 Ω - 8.5 jΩ
835 MHz	25.5 dB	$53.8 \Omega + 4.0 j\Omega$
880 MHz	16.5 dB	63.3 Ω - 10.7 jΩ
900 MHz	16.3 dB	51.0 Ω - 15.6 jΩ
945 MHz	26.8 dB	$46.5 \Omega + 2.8 j\Omega$

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

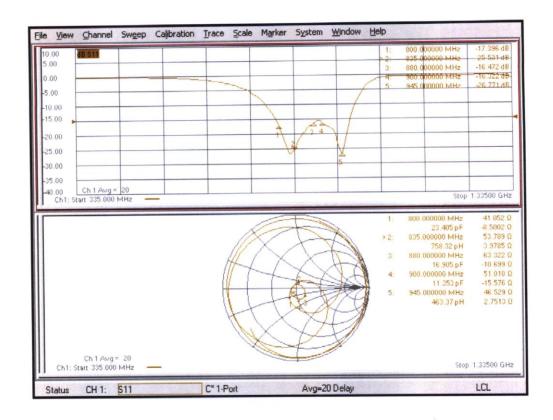
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Certificate No: CD835V3-1023_Aug22



Impedance Measurement Plot



Certificate No: CD835V3-1023_Aug22

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DASY5 E-field Result

Date: 25.08.2022

Test Laboratory: SPEAG Lab2

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN: 1023

Communication System: UID 0 - CW ; Frequency: 835 MHz Medium parameters used: $\sigma=0$ S/m, $\epsilon_r=1;\, \rho=0$ kg/m³

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EF3DV3 SN4013; ConvF(1, 1, 1) @ 835 MHz; Calibrated: 28.12.2021
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.12.2021
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

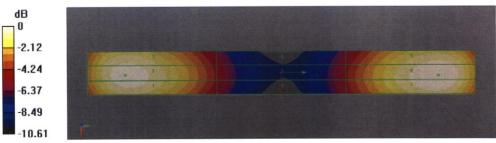
$Dipole\ E-Field\ measurement\ @\ 835MHz/E-Scan\ -\ 835MHz\ d=15mm/Hearing\ Aid\ Compatibility\ Test\ (41x361x1):$

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 132.6 V/m; Power Drift = 0.02 dB
Applied MIF = 0.00 dB
RF audio interference level = 41.00 dBV/m

Emission category: M3

MIF scaled E-field

Grid 1 M3 40.66 dBV/m	 Grid 3 M3 40.44 dBV/m
Grid 4 M4 35.87 dBV/m	Grid 6 M4 35.61 dBV/m
Grid 7 M3 40.95 dBV/m	Grid 9 M3 40.62 dBV/m



0 dB = 112.2 V/m = 41.00 dBV/m

Certificate No: CD835V3-1023_Aug22

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Dipole 1880 MHz

Calibration Laboratory of Schmid & Partner

Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura **Swiss Calibration Service**

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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

Client CTTL (Auden)

Certificate No: CD1880V3-1018_Aug22

bject	CD1880V3 - SN:	1018	
alibration procedure(s)	QA CAL-20.v7 Calibration Proce	dure for Validation Sources in air	
Calibration date:	August 25, 2022		
This calibration conficate document	ts the traceability to natio	onal standards, which realize the physical unit	s of measurements (SI).
he measurements and the uncerta	inties with confidence pr	obability are given on the following pages and	d are part of the certificate.
all calibrations have been conducte	d in the closed laborator	y 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
/pe-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
robe EF3DV3	SN: 4013	28-Dec-21 (No. EF3-4013_Dec21)	Dec-22
AE4	SN: 781	22-Dec-21 (No. DAE4-781_Dec21)	Dec-22
			Scheduled Check
econdary Standards	ID#	Check Date (in house)	
	ID # SN: GB42420191	09-Oct-09 (in house check Oct-20)	In house check: Oct-23
Power meter Agilent 4419B			In house check: Oct-23
Power meter Agilent 4419B Power sensor HP E4412A	SN: GB42420191	09-Oct-09 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23
Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A	SN: GB42420191 SN: US38485102	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20)	In house check: Oct-23
Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06	SN: GB42420191 SN: US38485102 SN: US37295597	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23
Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23
Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22 Signature
Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22 Signature
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by:	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22

Certificate No: CD1880V3-1018_Aug22

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





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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

References

ANSI-C63.19-2019 (ANSI-C63.19-2011) American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 15 mm above the top metal edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the
- Feed Point Impedance and Return Loss: These parameters are measured using a Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles
- E-field distribution: E field is measured in the x-y-plane with an isotropic E-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 15 mm (in z) above the metal top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any nonparallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, in the plane above the dipole surface.

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%.

Certificate No: CD1880V3-1018_Aug22





Measurement Conditions

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

DASY Version	DASY5	V52.10.4
Phantom	HAC Test Arch	
Distance Dipole Top - Probe Center	15 mm	
Scan resolution	dx, dy = 5 mm	
Frequency	1880 MHz ± 1 MHz	
Input power drift	< 0.05 dB	

Maximum Field values at 1880 MHz

E-field 15 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW input power	86.9 V/m = 38.78 dBV/m
Maximum measured above low end	100 mW input power	86.5 V/m = 38.74 dBV/m
Averaged maximum above arm	100 mW input power	86.7 V/m ± 12.8 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters

Frequency	Return Loss	Impedance
1730 MHz	27.8 dB	$54.2 \Omega + 0.7 j\Omega$
1880 MHz	22.1 dB	$54.7 \Omega + 6.7 j\Omega$
1900 MHz	23.0 dB	$55.8 \Omega + 4.8 j\Omega$
1950 MHz	32.4 dB	$52.4 \Omega + 0.1 j\Omega$
2000 MHz	19.5 dB	47.5 Ω + 10.0 jΩ

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

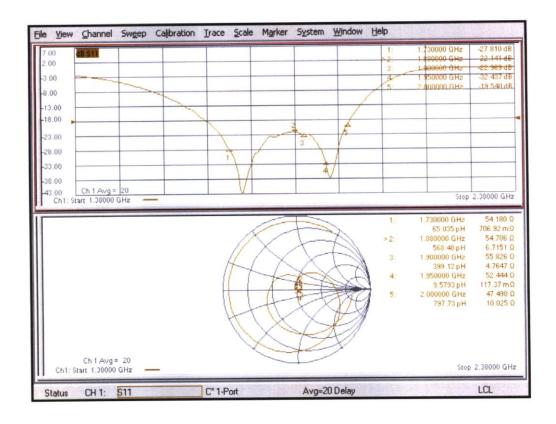
The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.



Impedance Measurement Plot



Certificate No: CD1880V3-1018_Aug22

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DASY5 E-field Result

Date: 25.08.2022

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN: 1018

Communication System: UID 0 - CW ; Frequency: 1880 MHz Medium parameters used: σ = 0 S/m, ϵ_r = 1; ρ = 0 kg/m³

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EF3DV3 SN4013; ConvF(1, 1, 1) @ 1880 MHz; Calibrated: 28.12.2021
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.12.2021
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

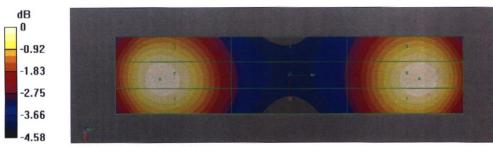
Dipole E-Field measurement @ 1880MHz/E-Scan - 1880MHz d=15mm/Hearing Aid Compatibility Test (41x181x1):

Interpolated grid: dx=0.5000 mm, dy=0.5000 mm Device Reference Point: 0, 0, -6.3 mm Reference Value = 157.1 V/m; Power Drift = 0.01 dB Applied MIF = 0.00 dB RF audio interference level = 38.78 dBV/m

Emission category: M2

MIF scaled E-field

Grid 1 M2 38.66 dBV/m	100 100 100 100 100 100 100 100 100 100	Grid 3 M2 38.45 dBV/m
Grid 4 M2 36.05 dBV/m		
	Grid 8 M2 38.78 dBV/m	Grid 9 M2 38.49 dBV/m



0 dB = 86.94 V/m = 38.78 dBV/m

Certificate No: CD1880V3-1018_Aug22

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Dipole 2450 MHz

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





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Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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

Client

CTTL (Auden)

Certificate No: CD2450V3-1021_Aug22

Object	CD2450V3 - SN: 1021		
Calibration procedure(s)	QA CAL-20.v7 Calibration Proce	dure for Validation Sources in air	
Calibration date:	August 25, 2022		
he measurements and the uncertain	inties with confidence pr	anal standards, which realize the physical unit obability are given on the following pages and ϕ facility: environment temperature (22 \pm 3)°C	d are part of the certificate.
	1	Cal Date (Certificate No.)	Scheduled Calibration
Primary Standards	ID # SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power meter NRP	SN: 104778 SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
ower sensor NRP-Z91	SN: 103244 SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
ower sensor NRP-Z91		04-Apr-22 (No. 217-03527)	Apr-23
eference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
ype-N mismatch combination	SN: 310982 / 06327 SN: 4013	28-Dec-21 (No. EF3-4013_Dec21)	Dec-22
Probe EF3DV3 DAE4	SN: 781	22-Dec-21 (No. DAE4-781_Dec21)	Dec-22
DALT			Scheduled Check
	ID#	Check Date (in house)	Scheduled Check
Secondary Standards	ID # SN: GB42420191	Check Date (in house) 09-Oct-09 (in house check Oct-20)	In house check: Oct-23
Secondary Standards Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-20)	
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A	SN: GB42420191 SN: US38485102	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23
econdary Standards ower meter Agilent 4419B ower sensor HP E4412A ower sensor HP 8482A	SN: GB42420191 SN: US38485102 SN: US37295597	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06	SN: GB42420191 SN: US38485102	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-23
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20)	In house check: Oct-23
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20)	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22 Signature
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by:	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477 Name Leif Klysner	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function Laboratory Technician	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22 Signature
Secondary Standards Power meter Agilent 4419B Power sensor HP E4412A Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	SN: GB42420191 SN: US38485102 SN: US37295597 SN: 837633/005 SN: US41080477	09-Oct-09 (in house check Oct-20) 05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20) 10-Jan-19 (in house check Oct-20) 31-Mar-14 (in house check Oct-20) Function	In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-23 In house check: Oct-22

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