

IEEE 802.11ax Data Rates														
MOD	MOD ORDER (M^{Order})	CODE RATE (C^{Rate})	20 MHz			40 MHz			80 MHz			160 MHz		
			3200 ns GI	1600 ns GI	800ns GI	3200 ns GI	1600 ns GI	800 ns GI	3200 ns GI	1600 ns GI	800 ns GI	3200 ns GI	1600 ns GI	800 ns GI
BPSK	1	1/2	7.3	8.1	8.6	14.6	16.3	17.2	30.6	34.0	36.0	61.3	68	72
QPSK	2	1/2	14.6	16.3	17.2	29.3	32.5	34.4	61.3	68.1	72.1	122.5	136	144
QPSK	2	3/4	21.9	24.4	25.8	43.9	48.8	51.6	91.9	102.1	108.1	183.8	204	216
16QAM	4	1/2	29.3	32.5	34.4	58.5	65.0	68.8	122.5	136.1	144.1	245.0	272	288
16QAM	4	3/4	43.9	48.8	51.6	87.8	97.5	103.2	183.8	204.2	216.2	367.5	408	432
64QAM	6	2/3	58.5	65.0	68.8	117.0	130.0	137.6	245.0	272.2	288.2	490.0	544	576
64QAM	6	3/4	65.8	73.1	77.4	131.6	146.3	154.9	275.6	306.3	324.3	551.3	613	649
64QAM	6	5/6	73.1	81.3	86.0	146.3	162.5	172.1	306.3	340.3	360.3	612.5	681	721
256QAM	8	3/4	87.8	97.5	103.2	175.5	195.0	206.5	367.5	408.3	432.4	735.0	817	865
256QAM	8	5/6	97.5	108.3	114.7	195.0	216.7	229.4	408.3	453.7	480.4	816.7	907	961
1024QAM	10	3/4	109.7	121.9	129.0	219.4	243.8	258.1	459.4	510.4	540.4	918.8	1021	1081
1024QAM	10	5/6	121.9	135.4	143.4	243.8	270.8	286.8	510.4	567.1	600.5	1020.8	1134	1201

Number of Sub-Carriers				
CBW	$N^{CBW}_{DataSubCarriers}$	Pilot	Unused	Total
20 MHz	234	8	14	256
40 MHz	468	16	28	512
80 MHz	980	16	28	1024
160 MHz	1960	32	56	2048

Guard Interval & Symbol Time		
OFDM Symbol Time (μs)	GI (μs)	Total OFDM Symbol Time (μs)
12.8	3.2	16
	1.6	14.4
	0.8	13.6

Resource Units in 802.11ax				
RU Type	20 MHz	40MHz	80MHz	160MHz
26-Tones	9	18	37	74
52-Tones	4 ⁺¹	8 ⁺²	16 ⁺⁵	32 ⁺¹⁰
106-Tones	2 ⁺¹	4 ⁺²	8 ⁺⁵	16 ⁺¹⁰
242-Tones	1	2	4 ⁺¹	8 ⁺²
484-Tones	NA	1	2 ⁺¹	4 ⁺²
996-Tones	NA	NA	1	2

802.11ax Signal Characteristics Compared to 802.11n / 802.11ac				
	Units	802.11n	802.11ac	802.11ax
Frequency Band	GHz	2.4 & 5	5 Only	2.4 & 5
Channel BandWidth (CBW)	MHz	20, 40	20, 40, 80, 80+80, 160	20, 40, 80, 80+80, 160
RF Waveform		OFDM	OFDM	OFDM & OFDMA
SubCarrier Spacing	KHz	312.5	312.5	78, 125
OFDM Symbol Time	μs	3.2	3.2	12.8
Guard Interval	μs	0.4 or 0.8	0.4 or 0.8	0.8, 1.6 or 3.2
Total Symbol Time	μs	4	3.6 or 4	13.6, 14.4 or 16.0
NSC in 20 MHz		64 (52D / 4P / 8U)	64 (52D/4P/8U)	256 (234D / 8P / 14U)
Modulation Scheme		BPSK, QPSK, 16QAM, 64QAM	BPSK, QPSK, 16QAM, 64QAM, 256QAM	BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
MU-MIMO	MU-MIMO	N/A	Downlink	Downlink/Uplink

