

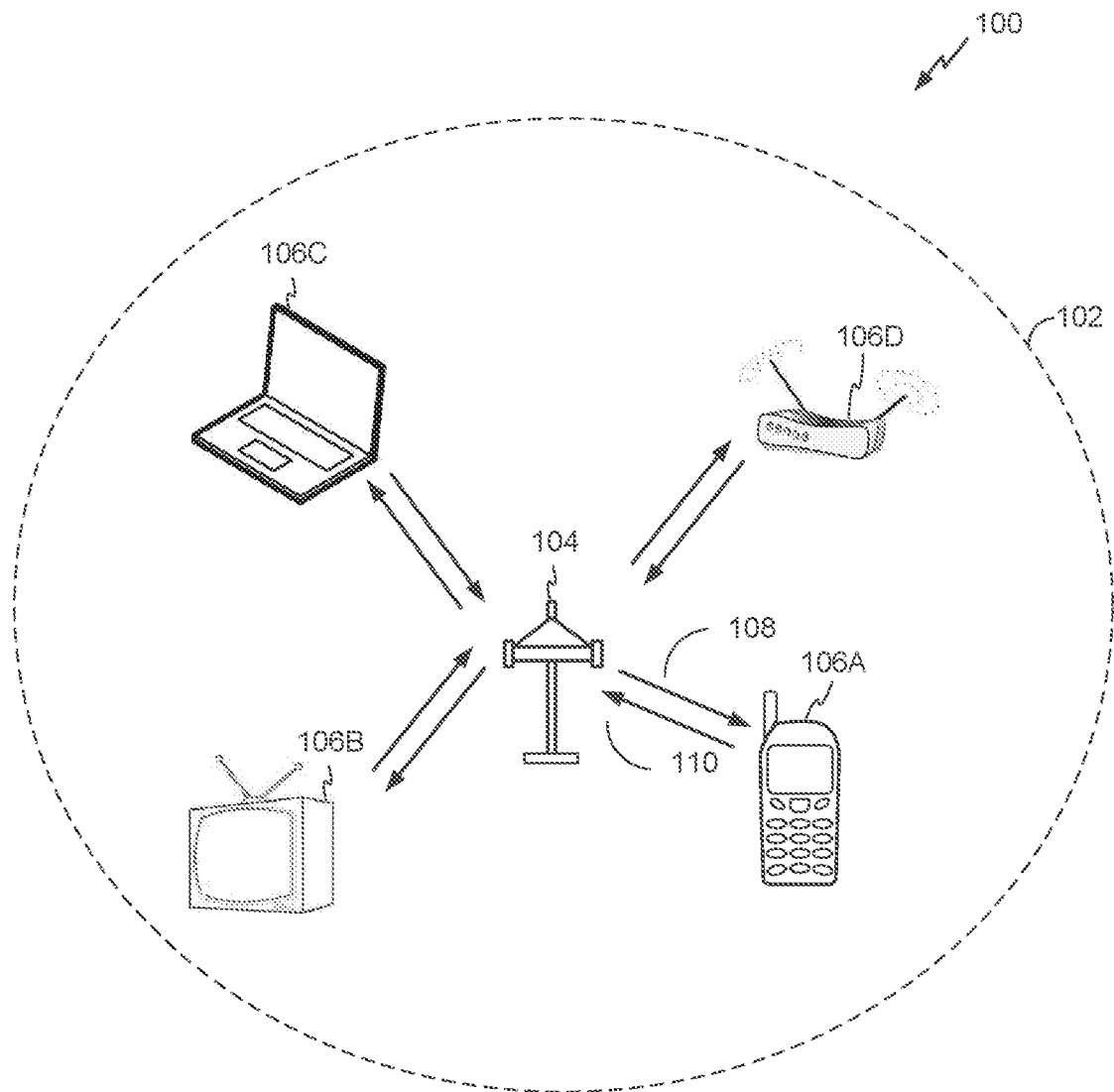


FIG. 1

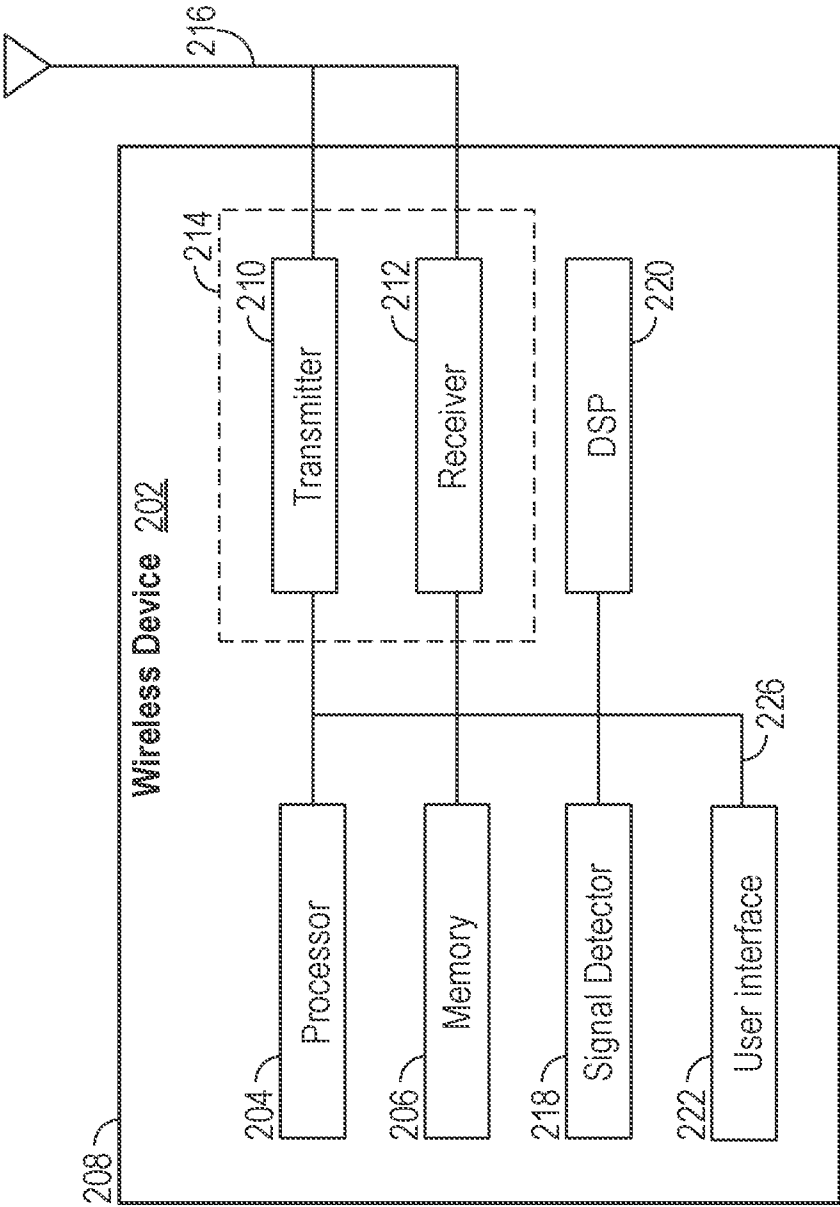


FIG. 2

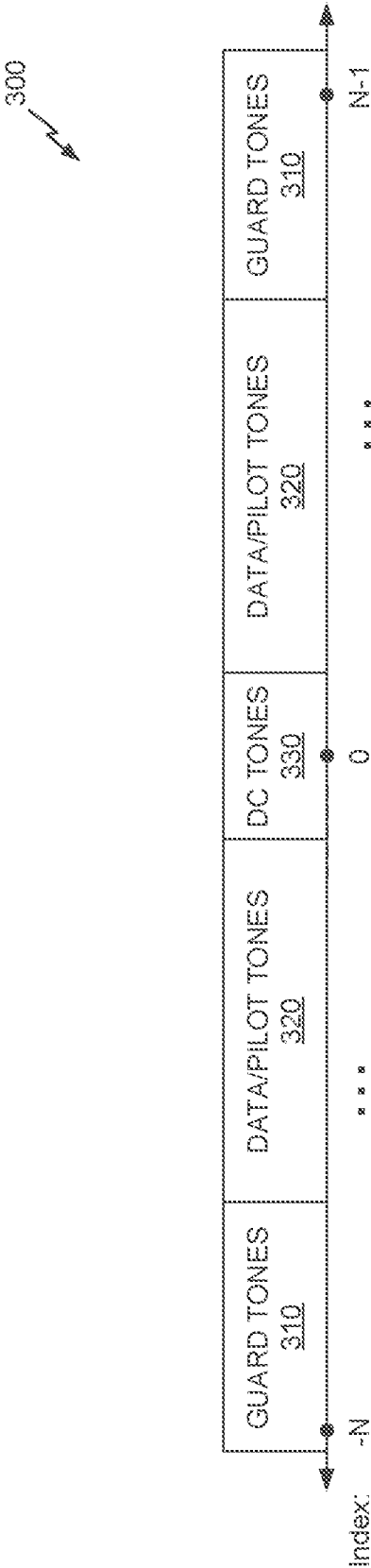


FIG. 3

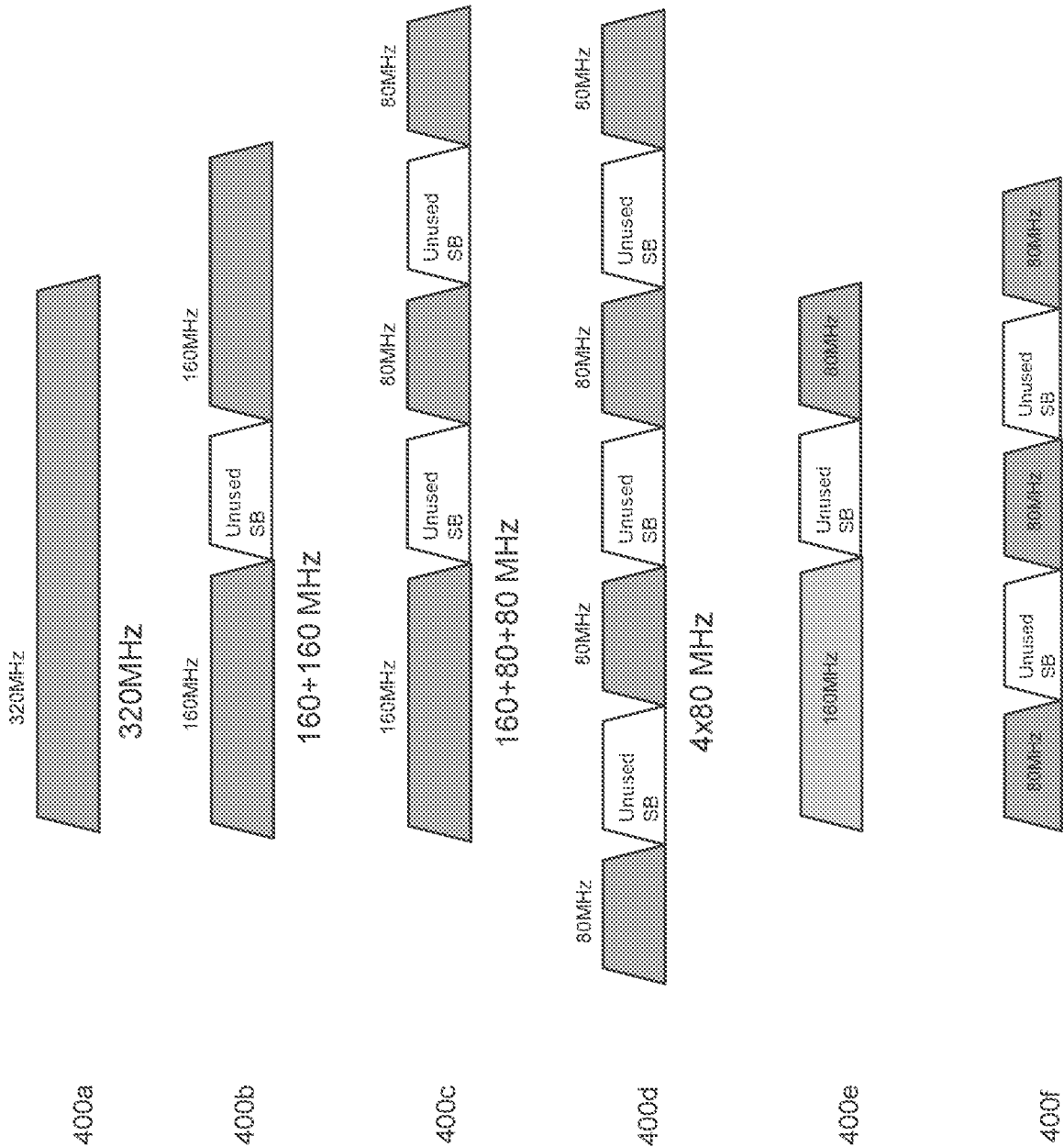


FIG. 4A

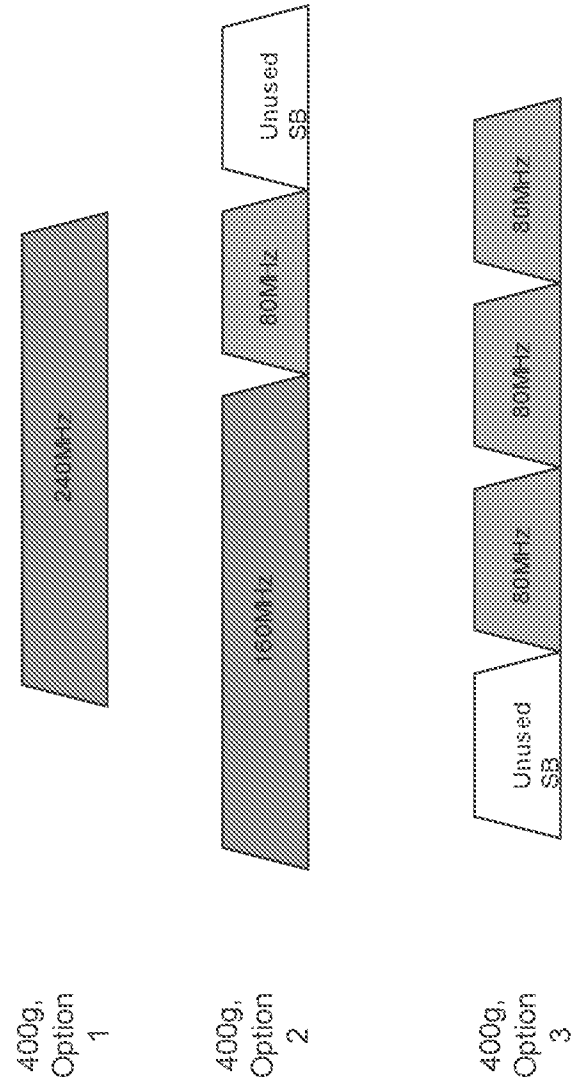


FIG. 4A (cont.)

	Sym Dur	Tone Spacing	80MHz z	150MHz z	320MHz z
Option 1	1x	312.5kHz	256	512	1024
Option 2	2x	156.25kHz	512	1024	2048
Option 3	4x	78.125kHz	1024	2048	4096

FIG. 5A

FFT Size	256	512	1024	2048	4096
Index Range	[-128, 127]	[-256, 255]	[-512, 511]	[-1024, 1023]	[-2048, 2047]

FIG. 5B

Sym Dur	80MHz		160MHz		320MHz	
	FF T Size	Tone Plan	FFT Size	Tone Plan	FFT Size	Tone Plan
1x	256	(1) 11ac 80MHz; (2) 11ax 20MHz uplocked by 4	512	(1) 11ac 160MHz; (2) 11ax 40MHz uplocked by 4	1024	(1) 11ax 80MHz uplocked by 4; (2) Duplicate two 11ac 160MHz
2x	512	(1) 11ac 160MHz downlocked by 2; (2) 11ax 40MHz uplocked by 2	1024	11ax 80MHz uplocked by 2	2048	(1) 11ax 160MHz uplocked by 2; (2) New 2048-pt tone plans
4x	1024	11ax 80MHz	2048	(1) 11ax 160MHz; (2) New 2048-pt tone plans	4096	(1) Duplicate two 11ax 160MHz; (2) New 4096-pt tone plans

FIG. 5C

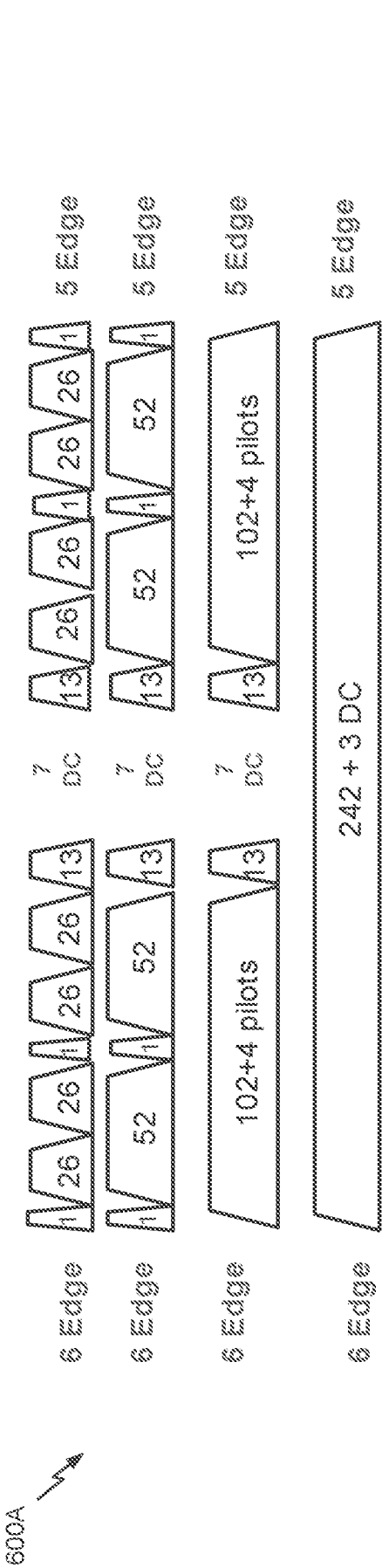


FIG. 6A

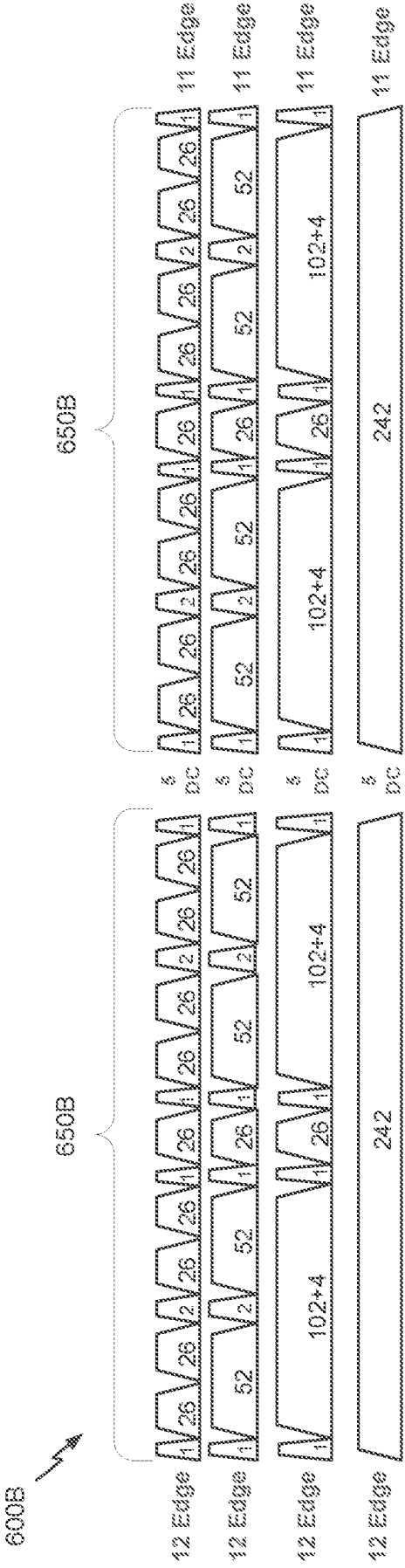


FIG. 6B

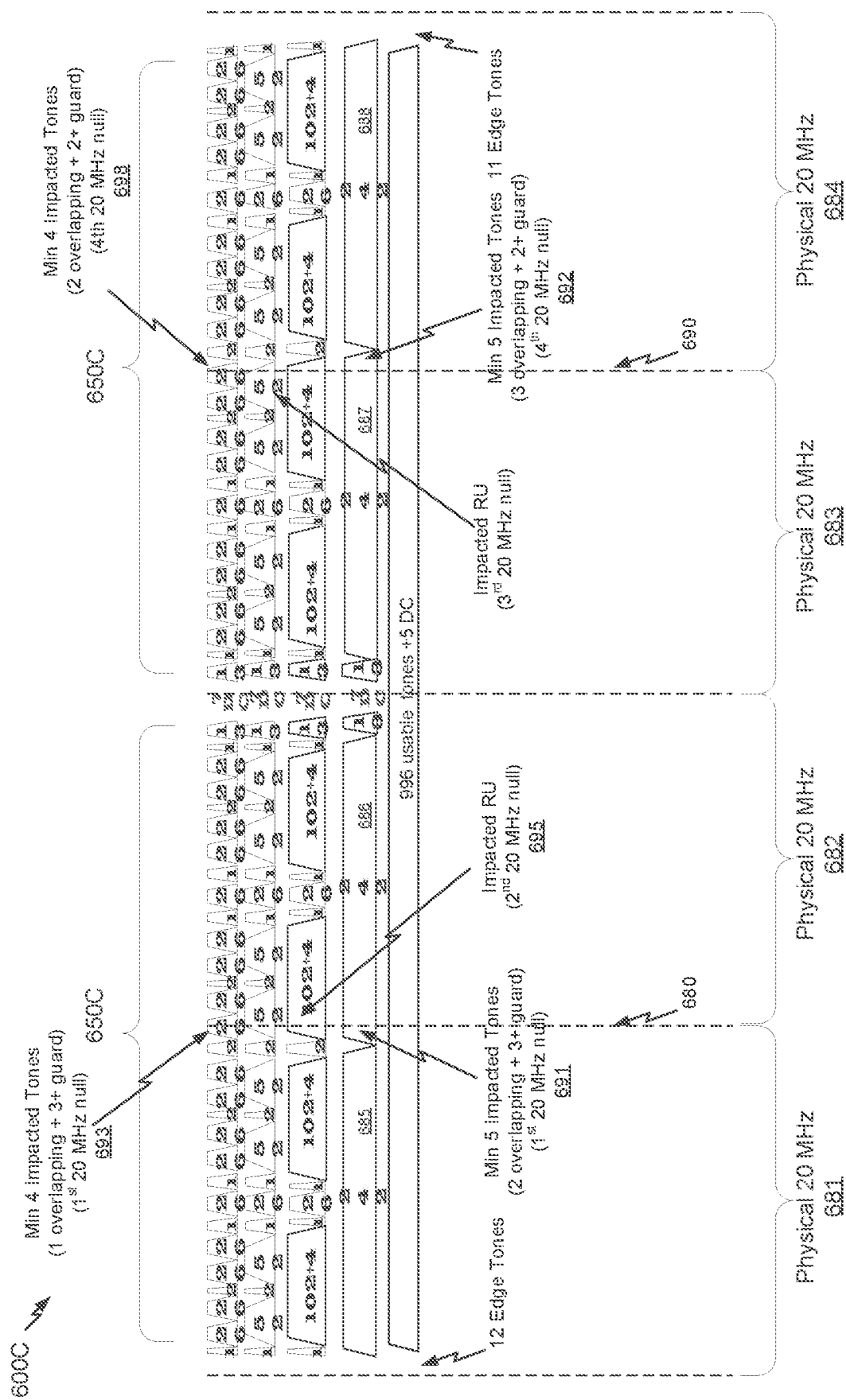


FIG. 6C

600D

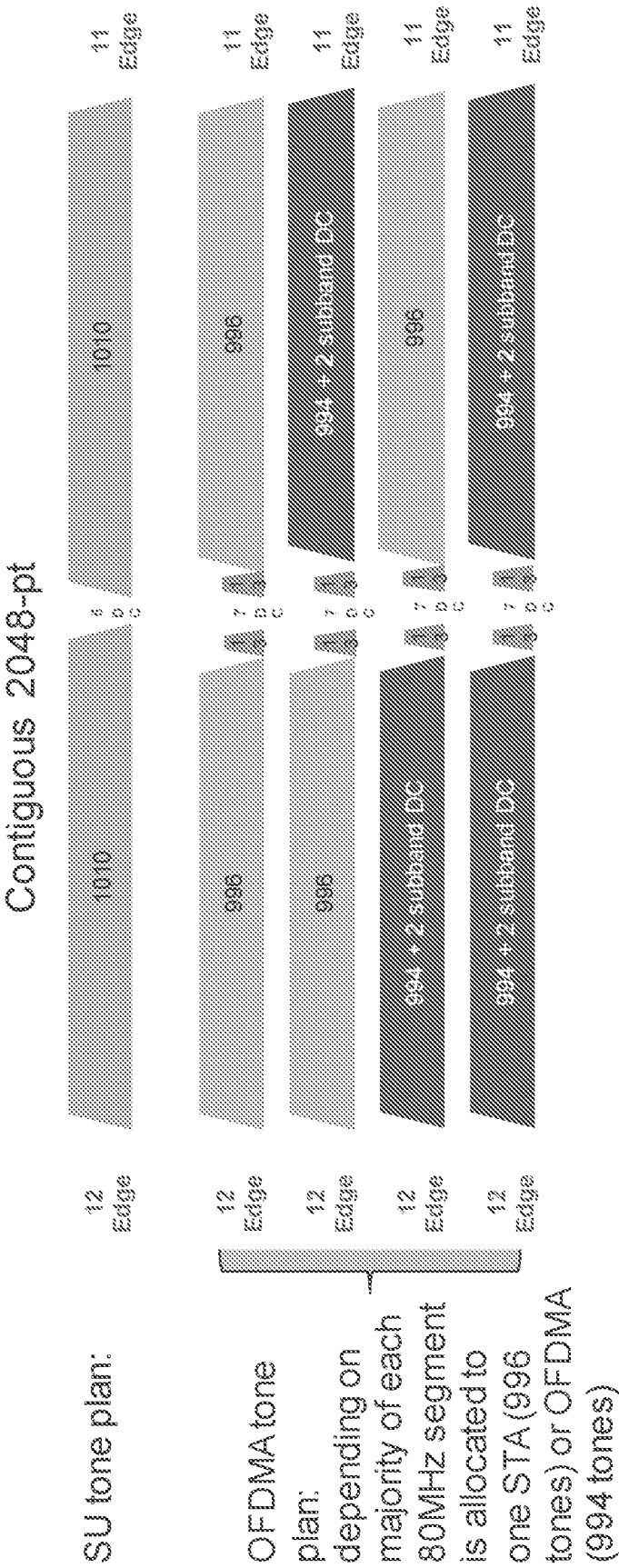


FIG. 6D

600E

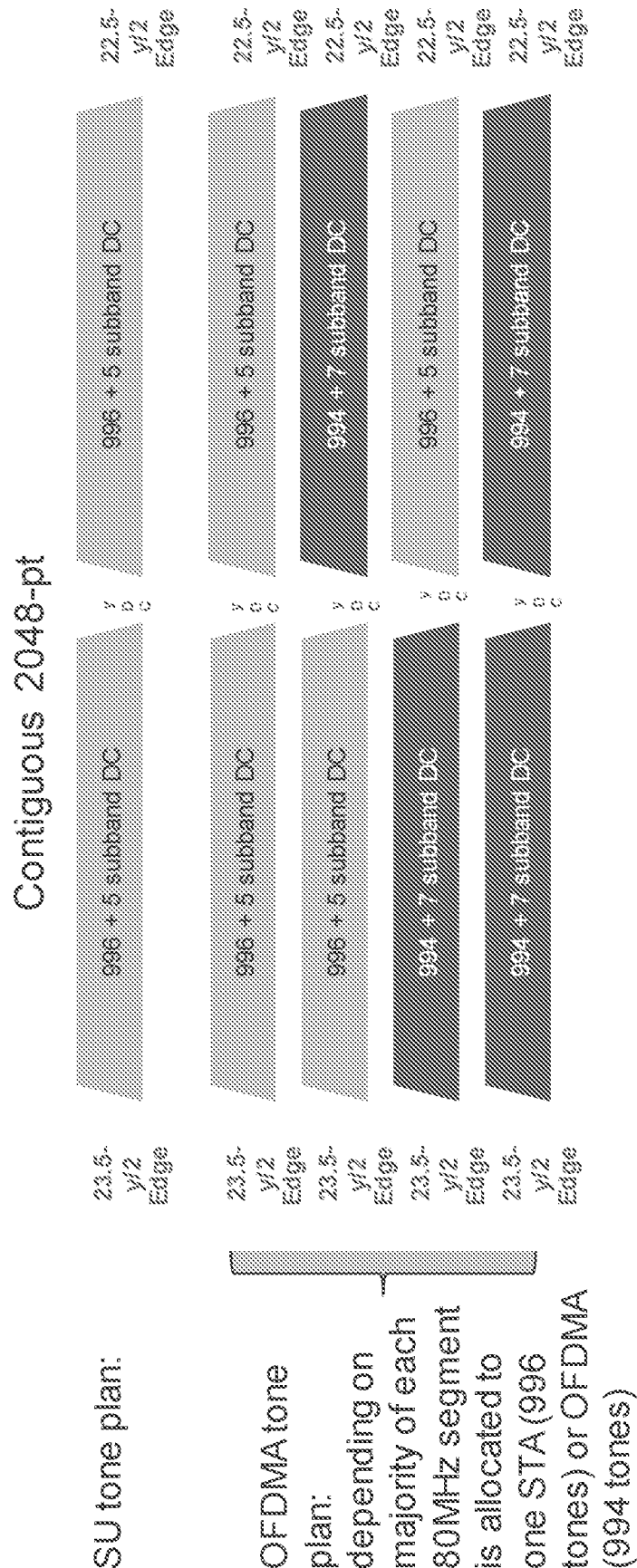
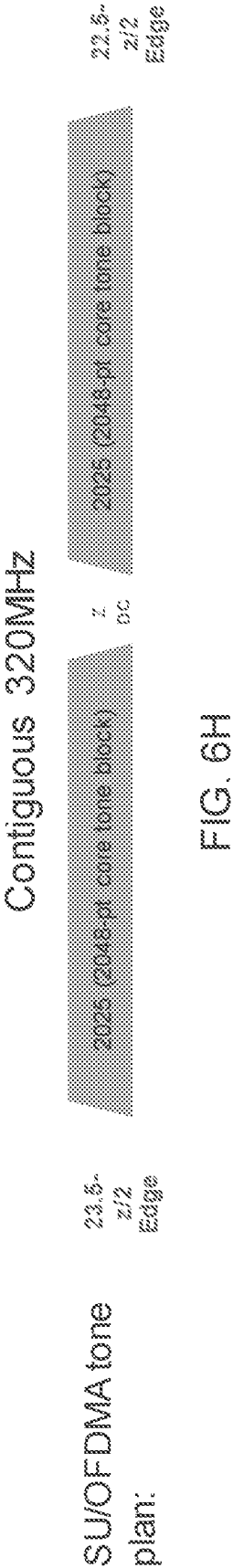
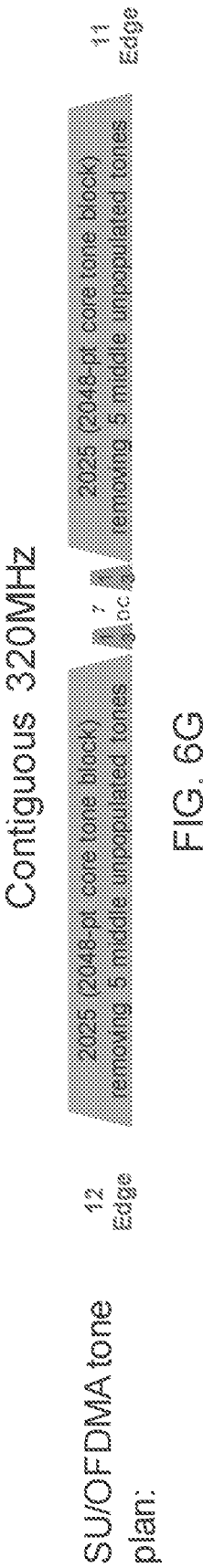
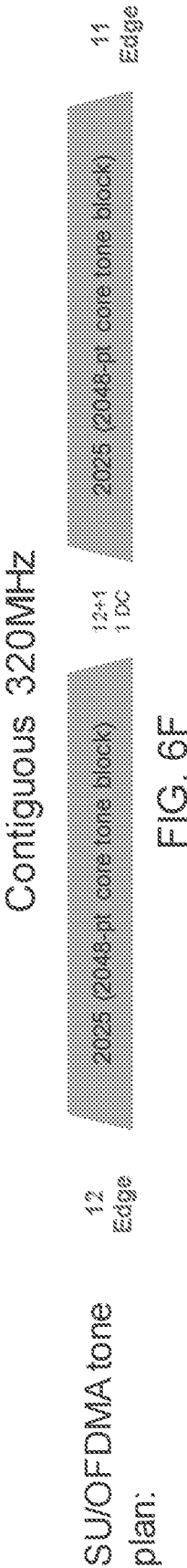


FIG. 6E



* RUs' tone indices, Null, Data & Pilot subcarrier indices

Channel Width	RU Size	Subcarrier Indices
160 MHz Option 1	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lower 80 MHz -512 , subcarrier indices in upper 80 MHz $+512$
160 MHz Option 2	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lower 80 MHz $-500.5-y/2$, subcarrier indices in upper 80 MHz $+500.5+y/2$, where y is odd, $5 \leq y \leq 23$
320 MHz Option 1a	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lowest 80 MHz -1536 , subcarrier indices in second lowest 80 MHz -512 , subcarrier indices in second upmost 80 MHz $+512$, subcarrier indices in upmost 80 MHz $+1536$
320 MHz Option 1b	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lowest 80 MHz $-1524.5-y/2$, subcarrier indices in second lowest 80 MHz $-523.5+y/2$, subcarrier indices in second upmost 80 MHz $+523.5-y/2$, subcarrier indices in upmost 80 MHz $+1524.5+y/2$, where y is odd, $5 \leq y \leq 23$
320 MHz Option 2a	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lowest 80 MHz $-1524.5-z/2$, subcarrier indices in second lowest 80 MHz $-500.5-z/2$, subcarrier indices in second upmost 80 MHz $+500.5+z/2$, subcarrier indices in upmost 80 MHz $+1524.5+z/2$, where z is odd, $5 \leq z \leq 23$
320 MHz Option 2b	$26, 52, 106, 242, 484, 996$	Subcarrier indices in lowest 80 MHz $-1513-y/2-z/2$, subcarrier indices in second lowest 80 MHz $-512+y/2-z/2$, subcarrier indices in second upmost 80 MHz $+512-y/2+z/2$, subcarrier indices in upmost 80 MHz $+1513+y/2+z/2$, where y & z are odd, $5 \leq y \leq 23$, $5 \leq z \leq 23$

FIG. 7

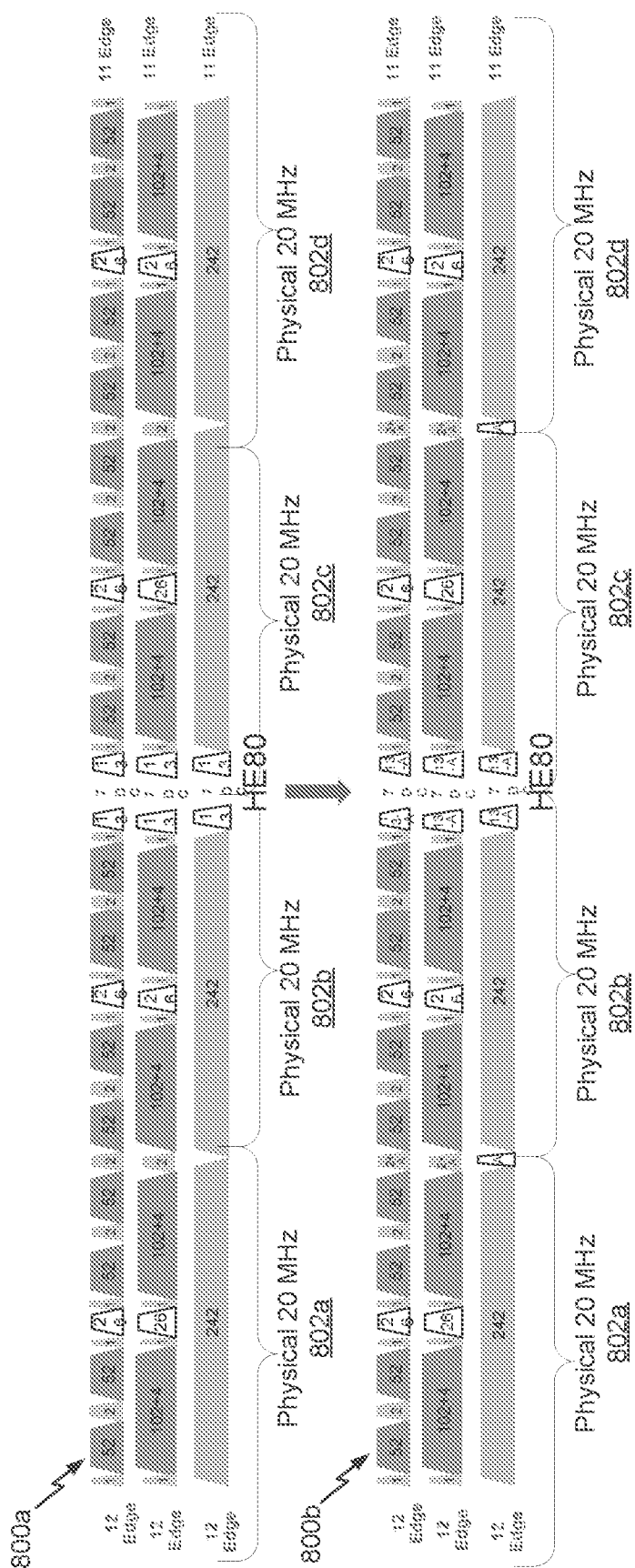


FIG. 8A

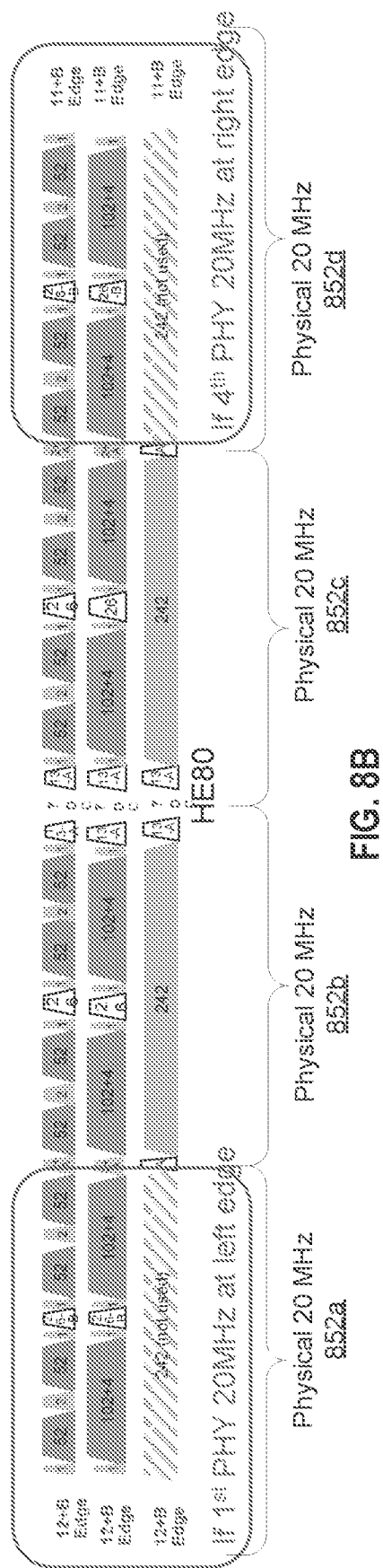


FIG. 8B

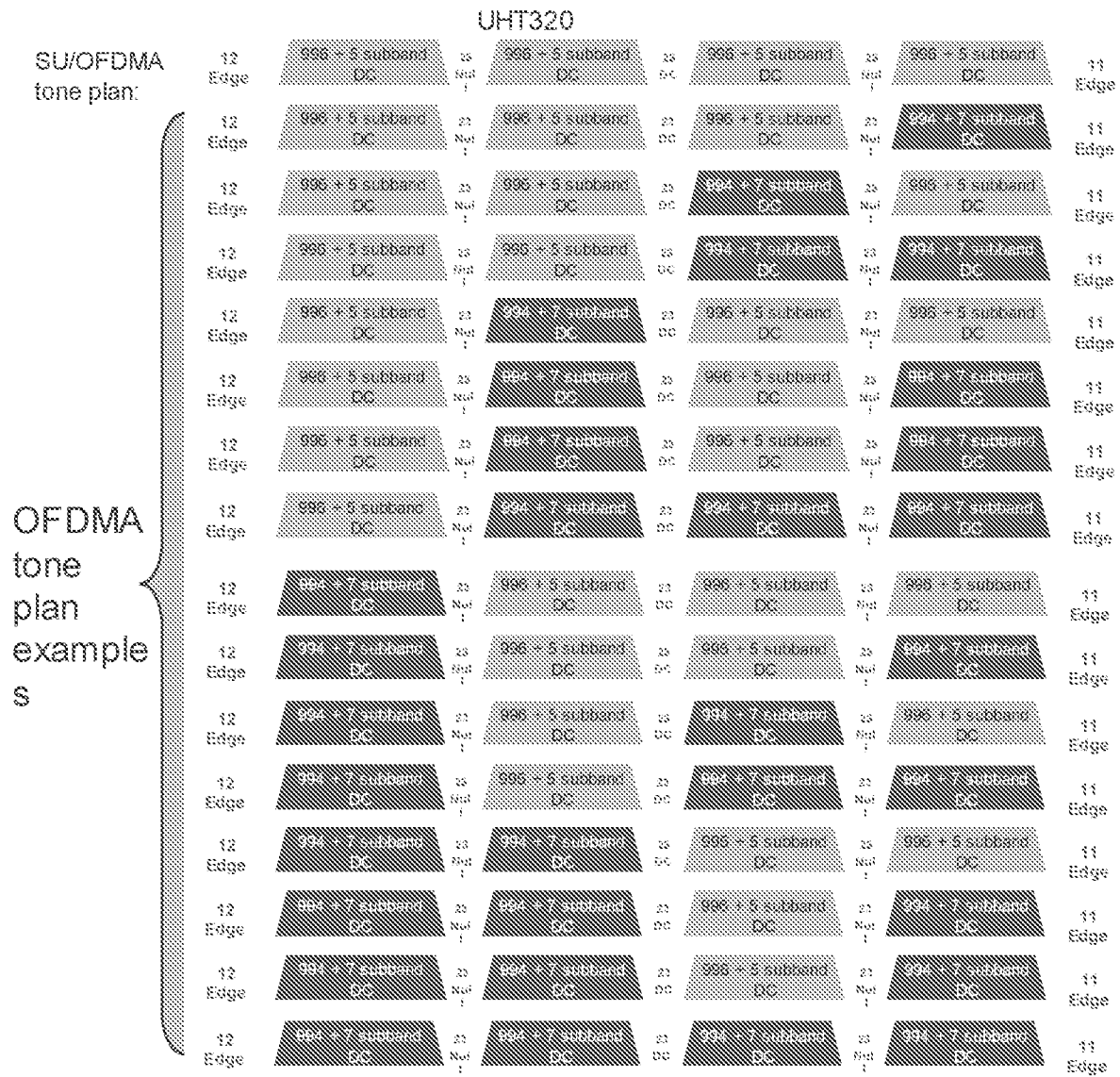
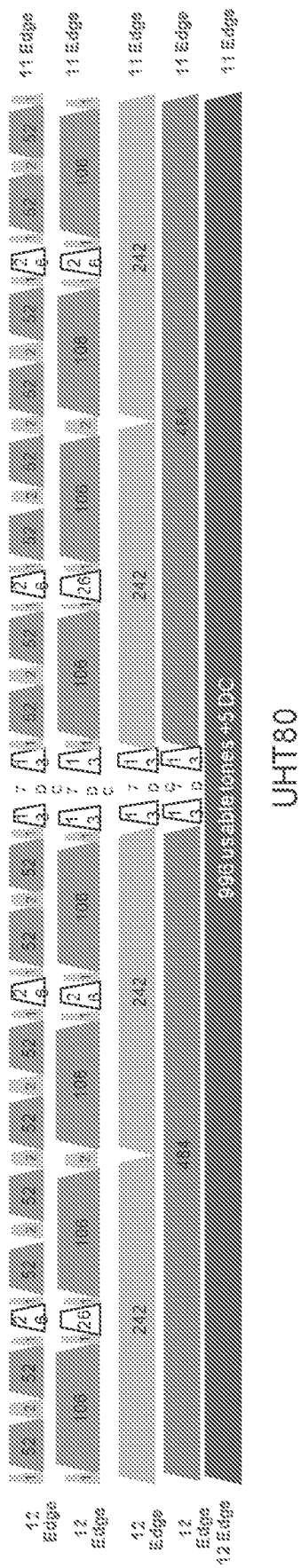
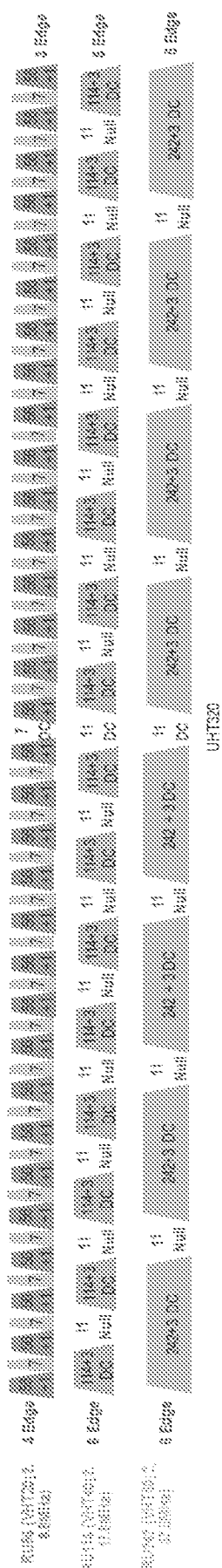


FIG. 9A





TOOL

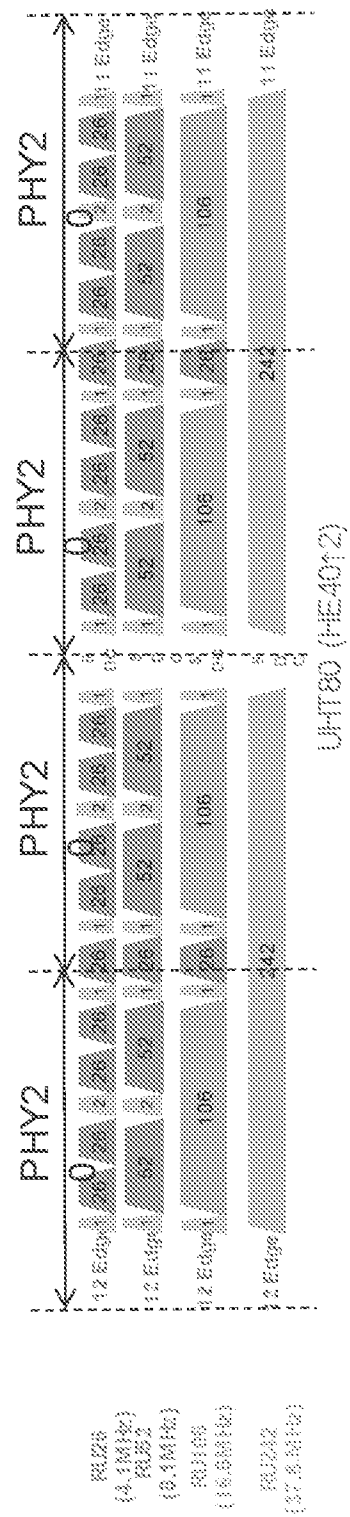
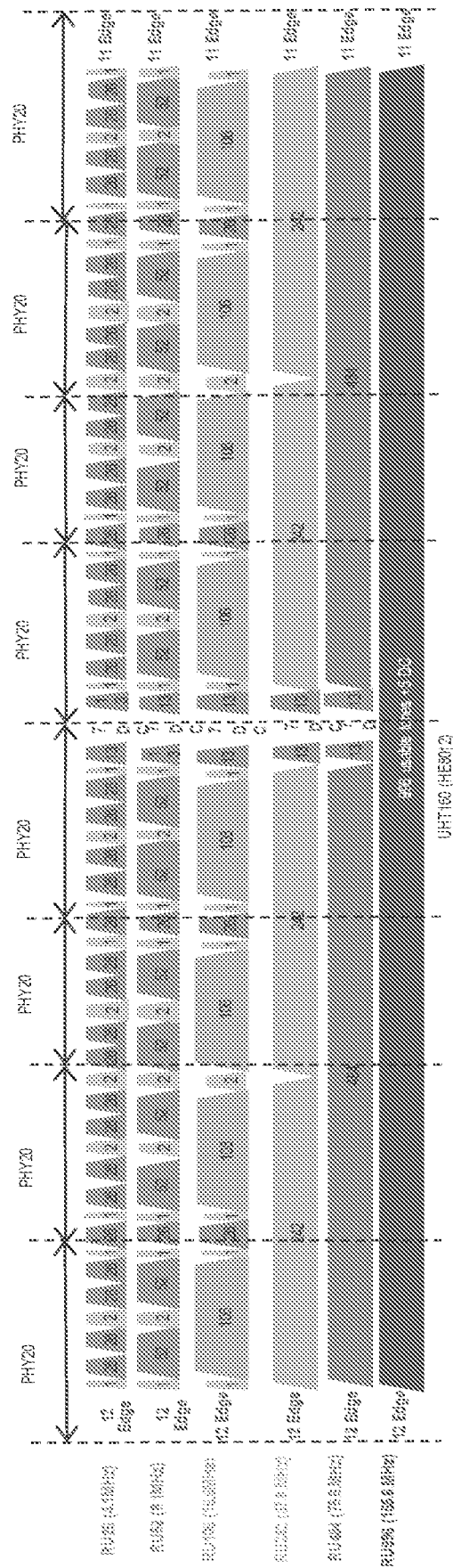
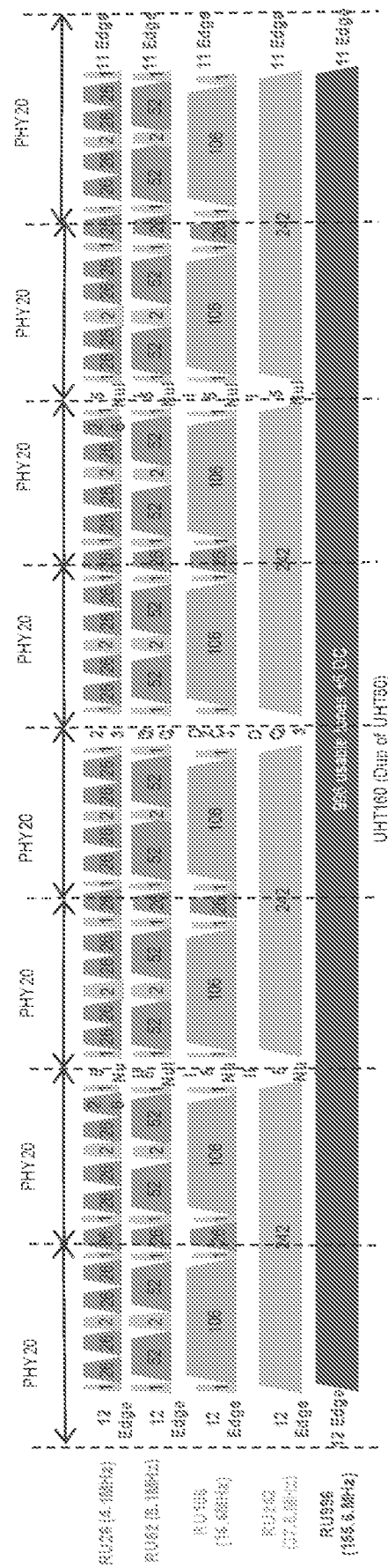


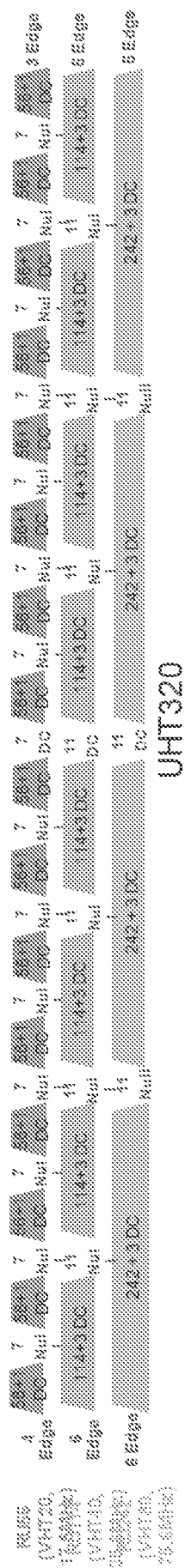
FIG. 10B



COLE



90



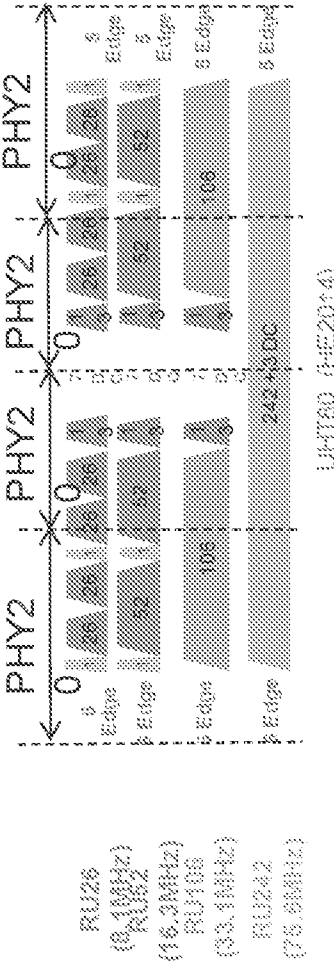
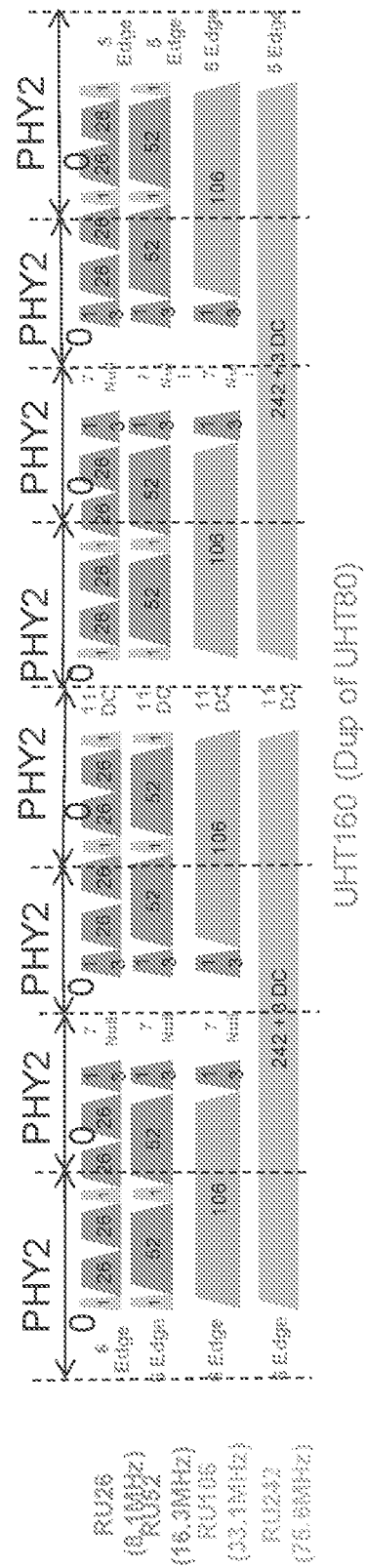


FIG. 1B



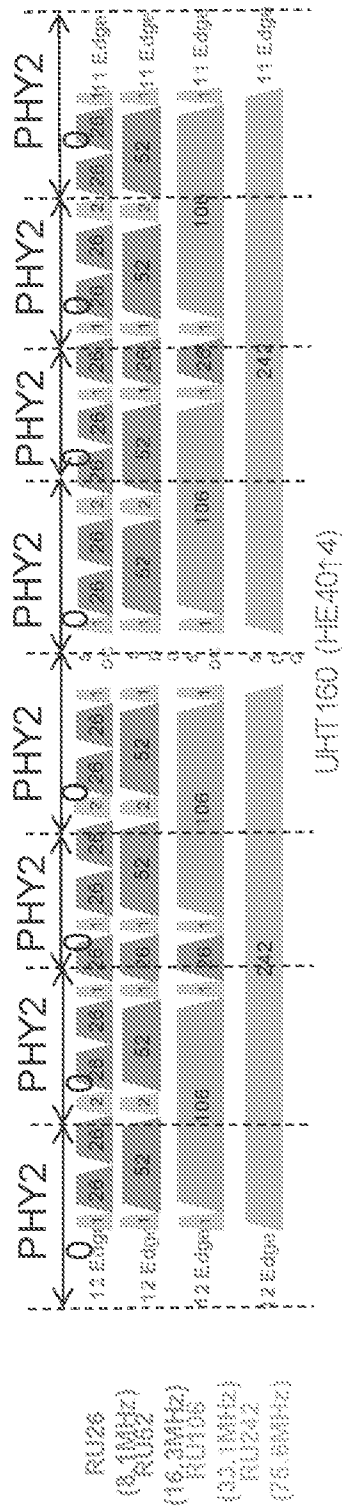


FIG. 11D

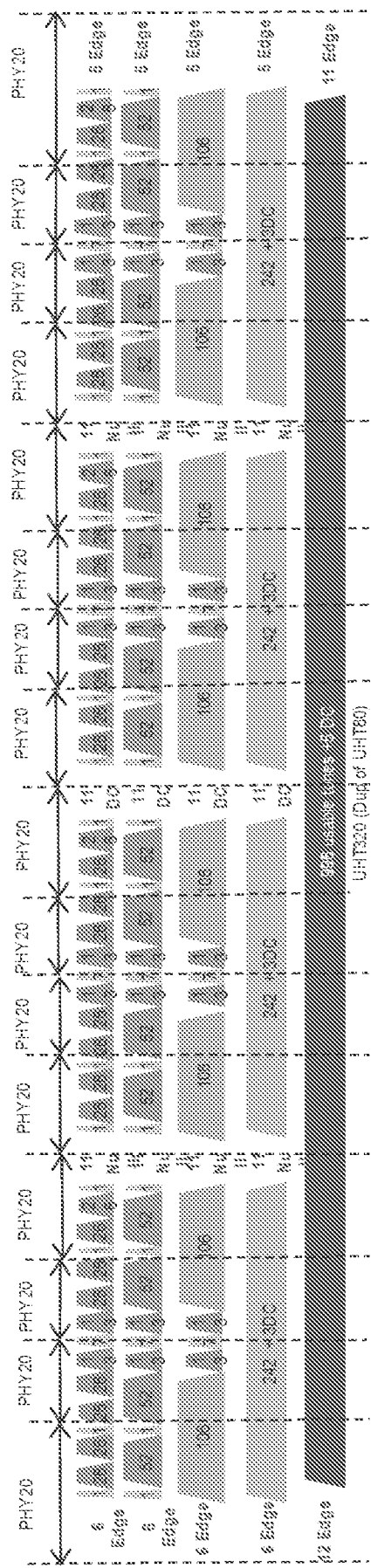
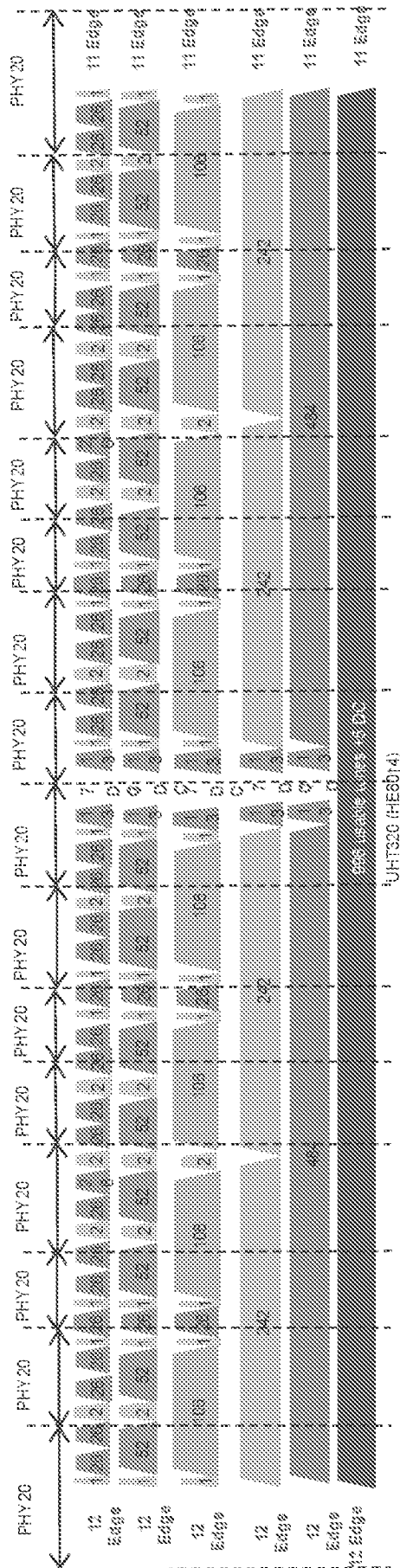
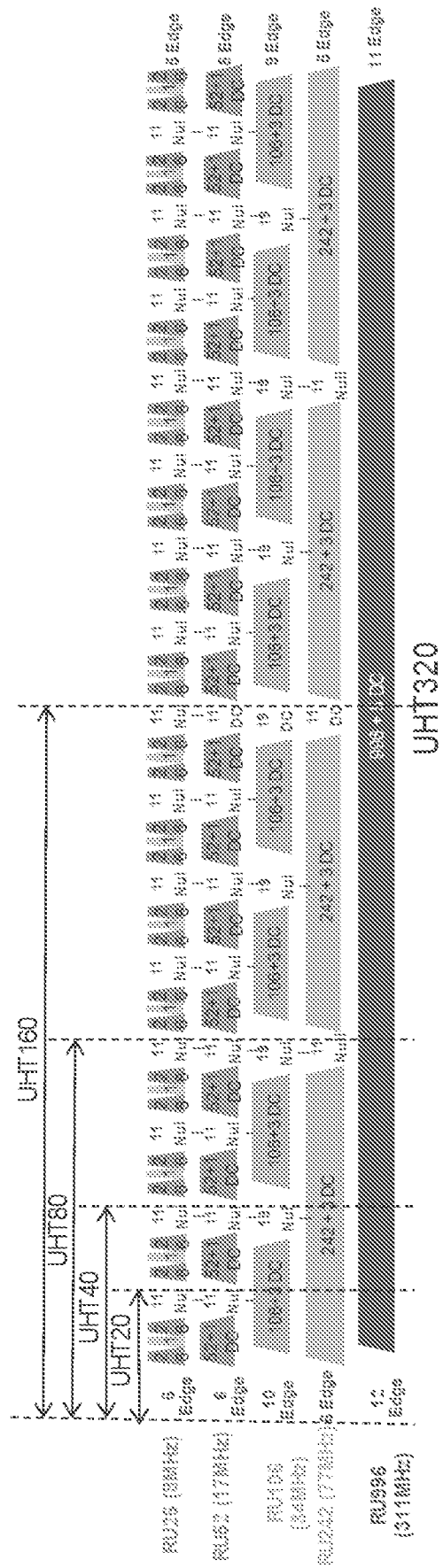


FIG. 11E







NATIONAL BUREAU OF STANDARDS

Sym Dur	80MHz		160MHz		320MHz	
	FFT	Tone Plan	FFT	Tone Plan	FFT	Tone Plan
1x (VHT based)	256	(1) VHT80; (2) New derived from VHT20/40/80	512	(1) VHT160; (2) New derived from VHT20/40/80	1024	(1) Formed by VHT20/40/80 in PHY20/40/80, depending on OFDMA allocations
1x (HE based)		(1) HE20 uplocked by 4 (2) Modified from (1)		(1) Duplicate two HE20 uplocked by 4; (2) HE40 uplocked by 4; (3) Modified from (2)		(1) Duplicate four HE20 uplocked by 4; (2) HE80 uplocked by 4; (3) Modified from (2)
4x	1024	HE80	2048	(1) HE160; (2) Modified tone plans based on (1)	4096	(1) Duplicate two HE160; (2) Modified tone plans based on (1)
2x (VHT based)	512	(1) VHT160 downlocked by 2; (2) New derived from VHT40/80	1024	(1) Duplicate two VHT160 downlocked by 2; (2) New derived from VHT40/80	2048	(1) Duplicate four VHT160 downlocked by 2; (2) Formed by VHT20/40/80 downlocked by 2 in PHY10/20/40, depending on OFDMA allocations
2x (HE based)		HE40 uplocked by 2		(1) HE80 uplocked by 2; (2) Duplicate two HE40 uplocked by 2		(1) HE160 uplocked by 2; (2) Duplicate four HE40 uplocked by 2

FIG. 12

Sym Dur	20MHz (64 FFT)	40MHz (128 FFT)	80MHz (256 FFT)	160MHz (512 FFT)	320MHz (1024 FFT)
1x (VHT based)	VHT20	VHT40	VHT80	VHT160	Formed by VHT20/40/80 in PHY20/40/80, depending on OFDMA allocations
1x (HE based)	N/A	N/A	HE20 upclocked by 4	(1) Duplicate two HE20 upclocked by 4; (2) HE40 upclocked by 4	(1) Duplicate four HE20 upclocked by 4; (2) HE80 upclocked by 4
1x (new)	New 64-pt design	New 128-pt design	New 256-pt design	New 512-pt design	New 1024-pt design

FIG. 13A

Sym. Dur.	20MHz (128 FFT)	40MHz (256 FFT)	80MHz (512 FFT)	160MHz (1024 FFT)	320MHz (2048 FFT)
2x (VHT based)	VHT40 downclocked by 2	VHT80 downclocked by 2	VHT160 downclocked by 2	Duplicate two VHT160 downclocked by 2	(1) Duplicate four VHT160 downclocked by 2 (2) Formed by VHT20/40/80 downclocked by 2 in PHY10/20/40, depending on OFDMA allocations
2x (HE based)	N/A	HE20 upclocked by 2	HE40 upclocked by 2	(1) HE80 upclocked by 2; (2) Duplicate two HE40 upclocked by 2	(1) HE160 upclocked by 2; (2) Duplicate four HE40 upclocked by 2
2x (new)	New 128-pt design	New 256-pt design	New 512-pt design	New 1024-pt design	New 2048-pt design

FIG. 13B

Sym Dur	20MHz (256 FFT)	40MHz (512 FFT)	80MHz (1024 FFT)	160MHz (2048 FFT)	320MHz (4096 FFT)
4x (HE based)	HE20	HE40	HE80	(1) HE160, (2) Modified tone plans based on (1)	(1) Duplicate two HE160; (2) Modified tone plans based on (1)
4x (new)	New 256-pt design	New 512-pt design	New 1024-pt design	New 2048-pt design	New 4096-pt design

FIG. 13C