

FIG. 1

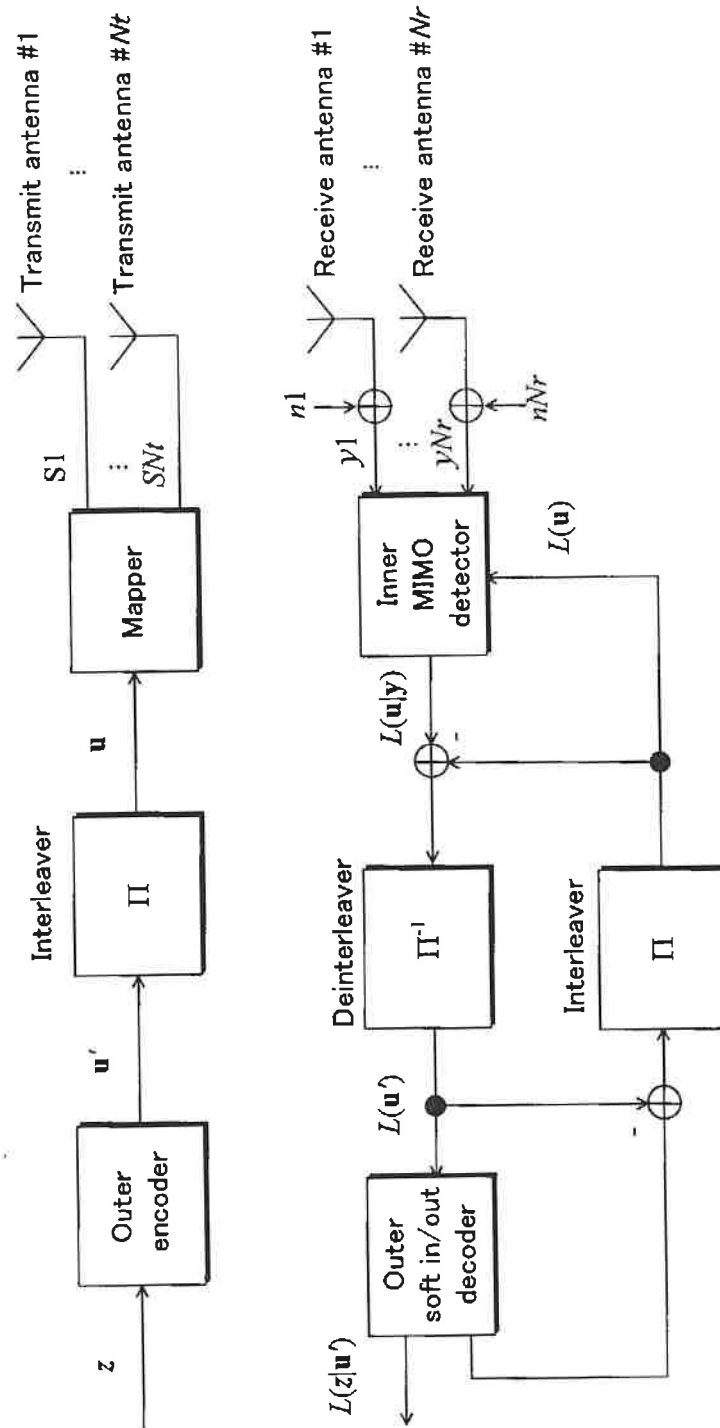


FIG. 2

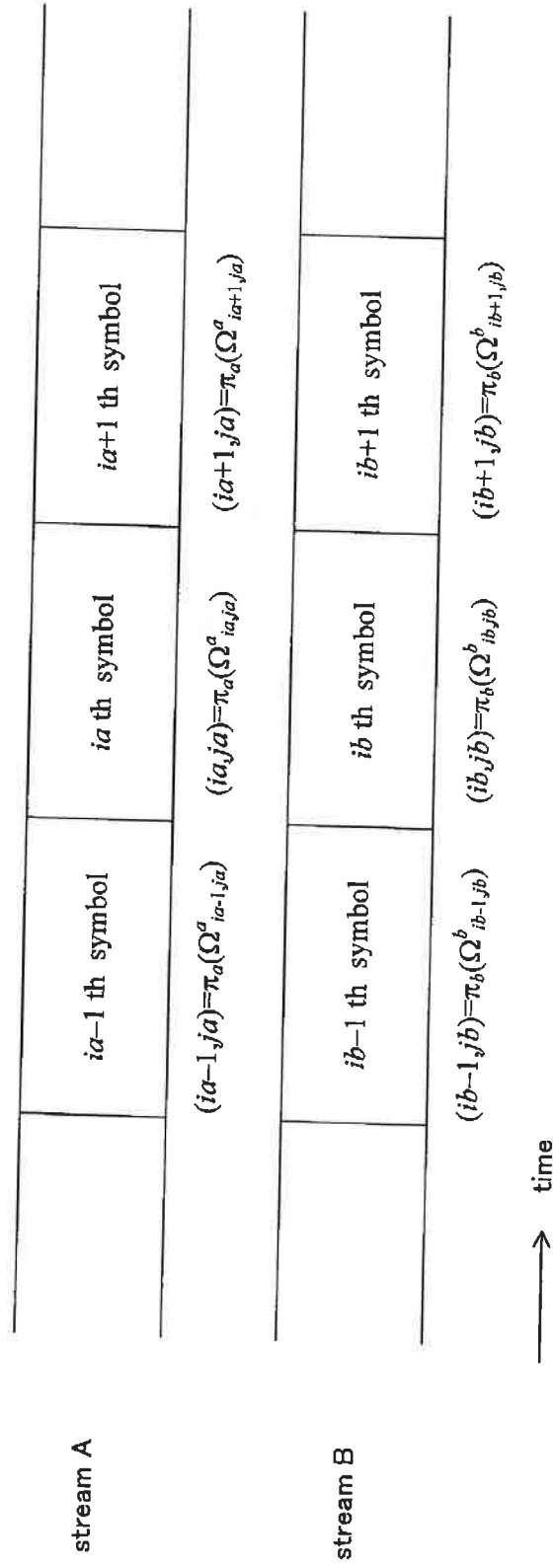


FIG. 3

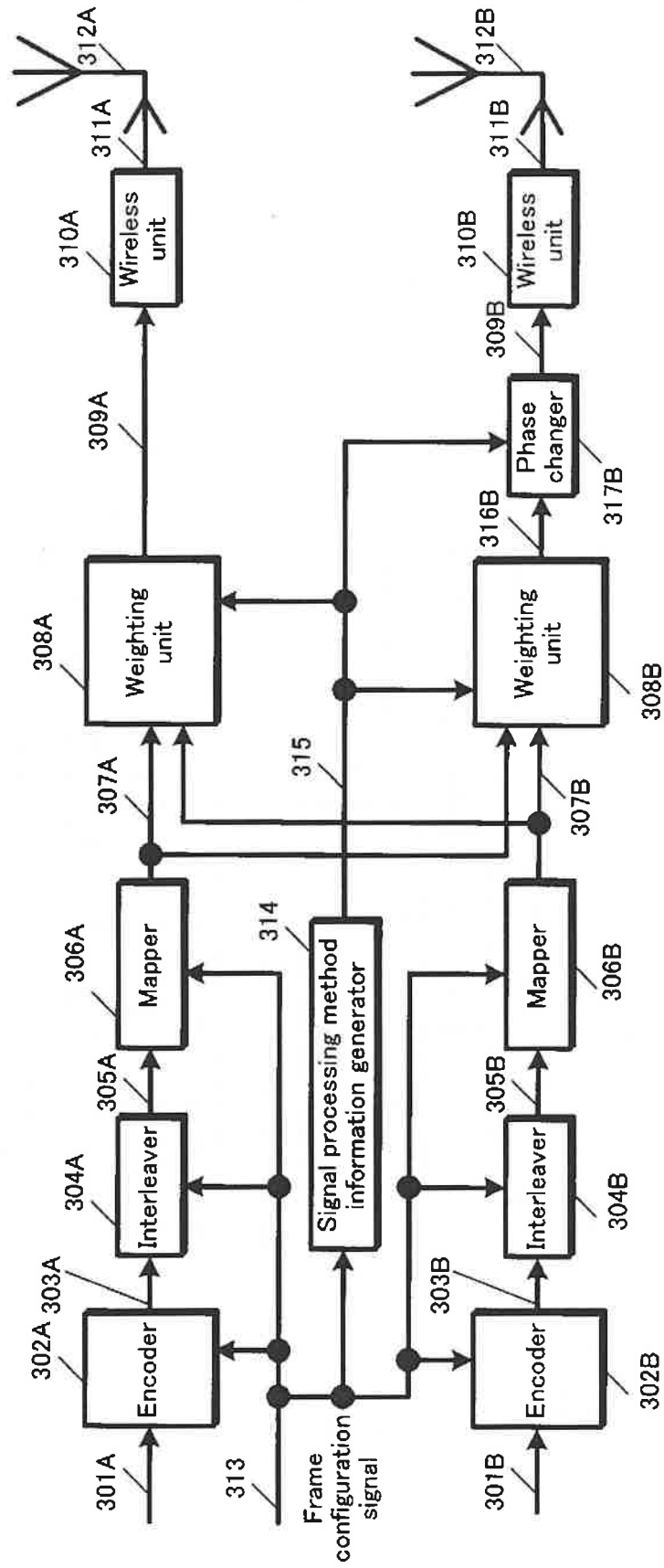


FIG. 4

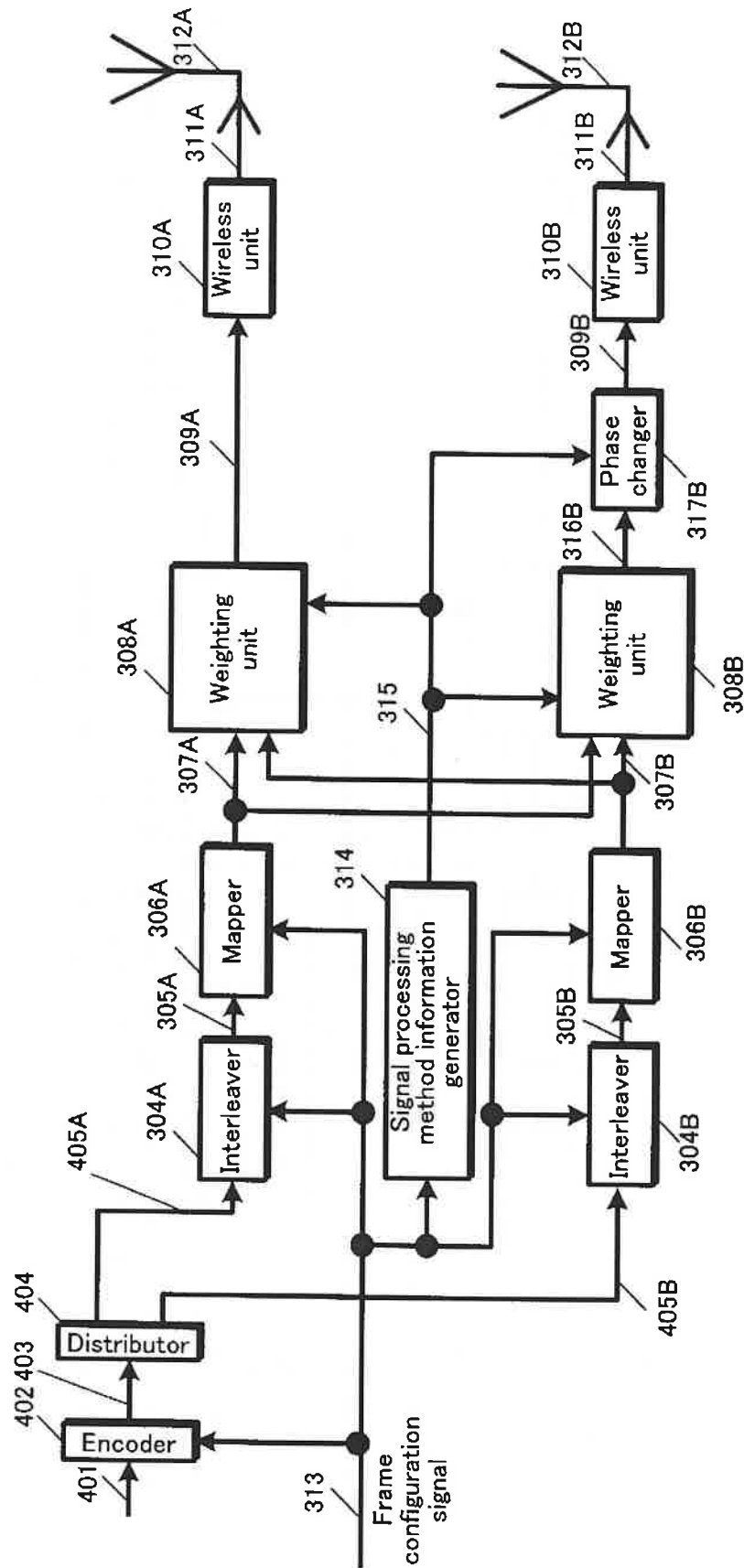


FIG. 5

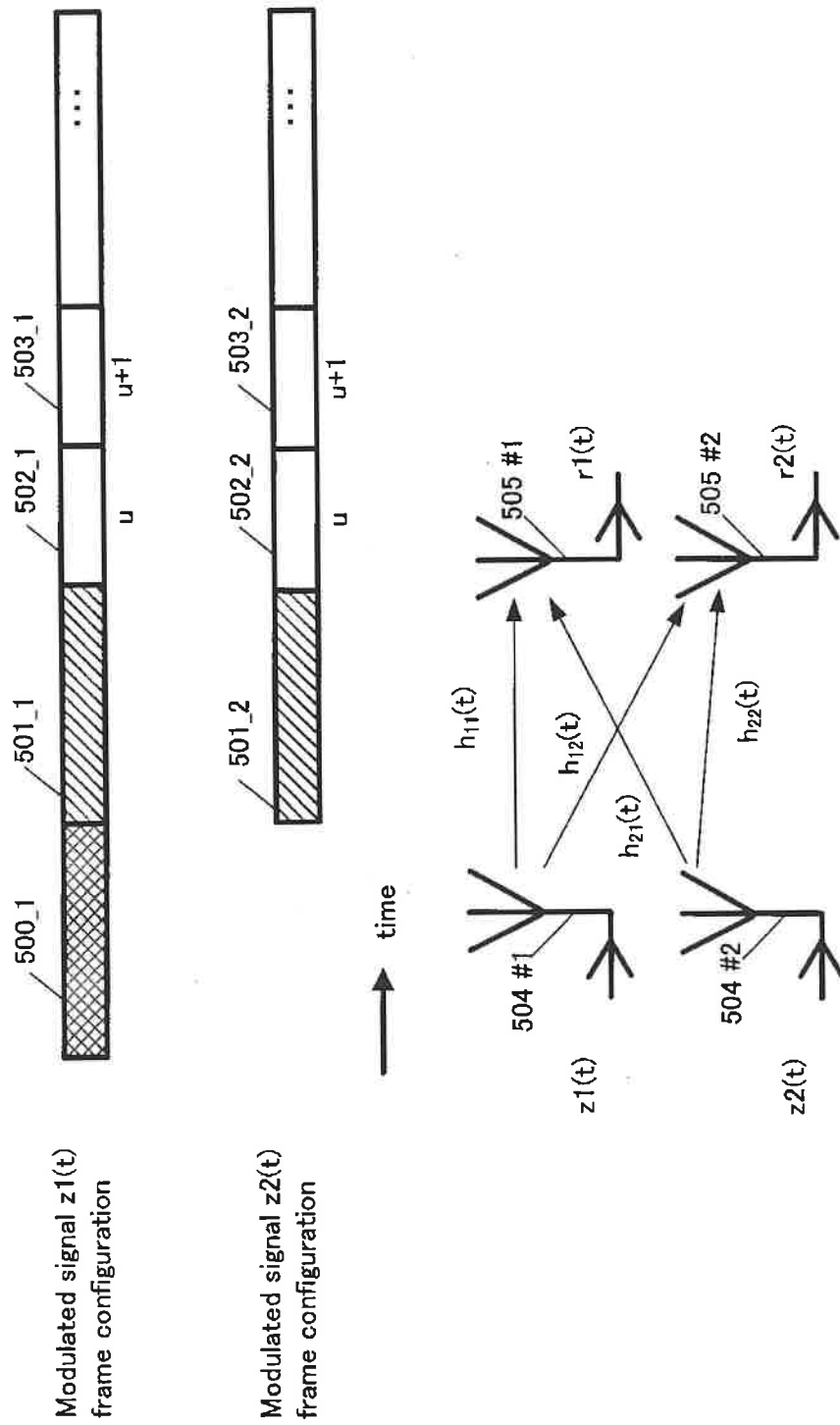
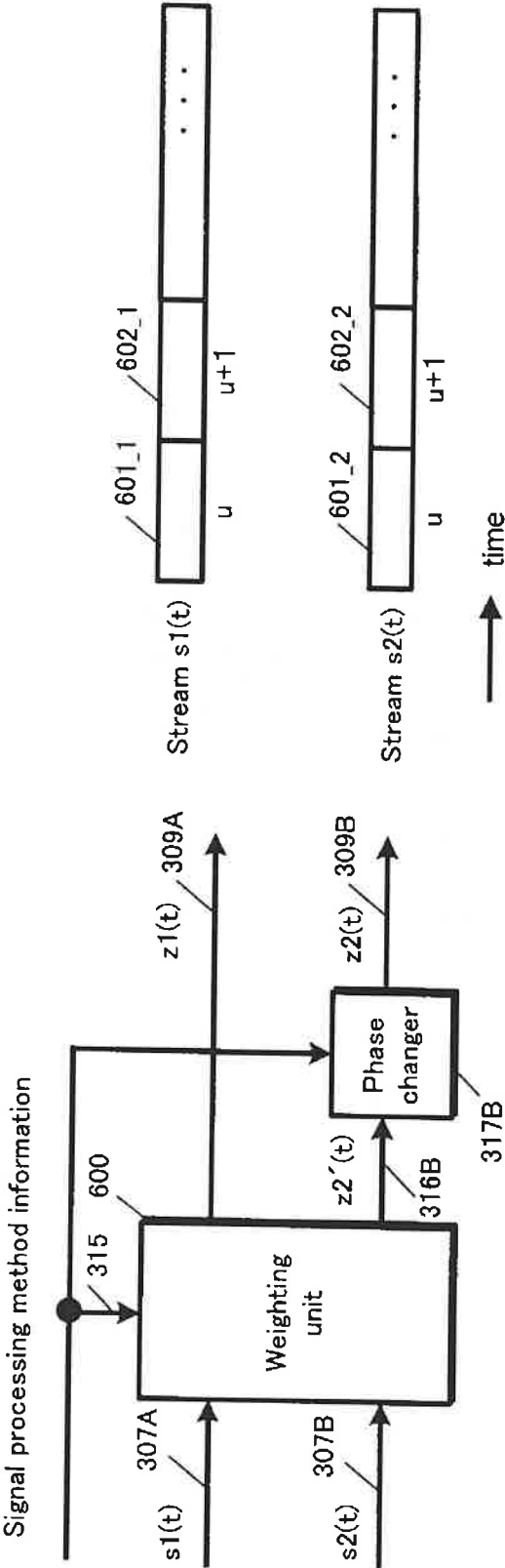


FIG. 6



Sample variations of phase changing formula $y(t)$ used by phase changer			
timestamp u	timestamp $u+1$	timestamp $u+2$	timestamp $u+k$
$y(u) = e^{j0}$	$y(u+1) = e^{j\frac{\pi}{2}}$	$y(u+2) = e^{j\pi}$	$y(u+k) = e^{j\frac{k\pi}{2}}$
		$y(u+3) = e^{j\frac{3\pi}{2}}$	$y(u+k) = e^{j\frac{k\pi}{2}}$
			$\dots$

FIG. 7

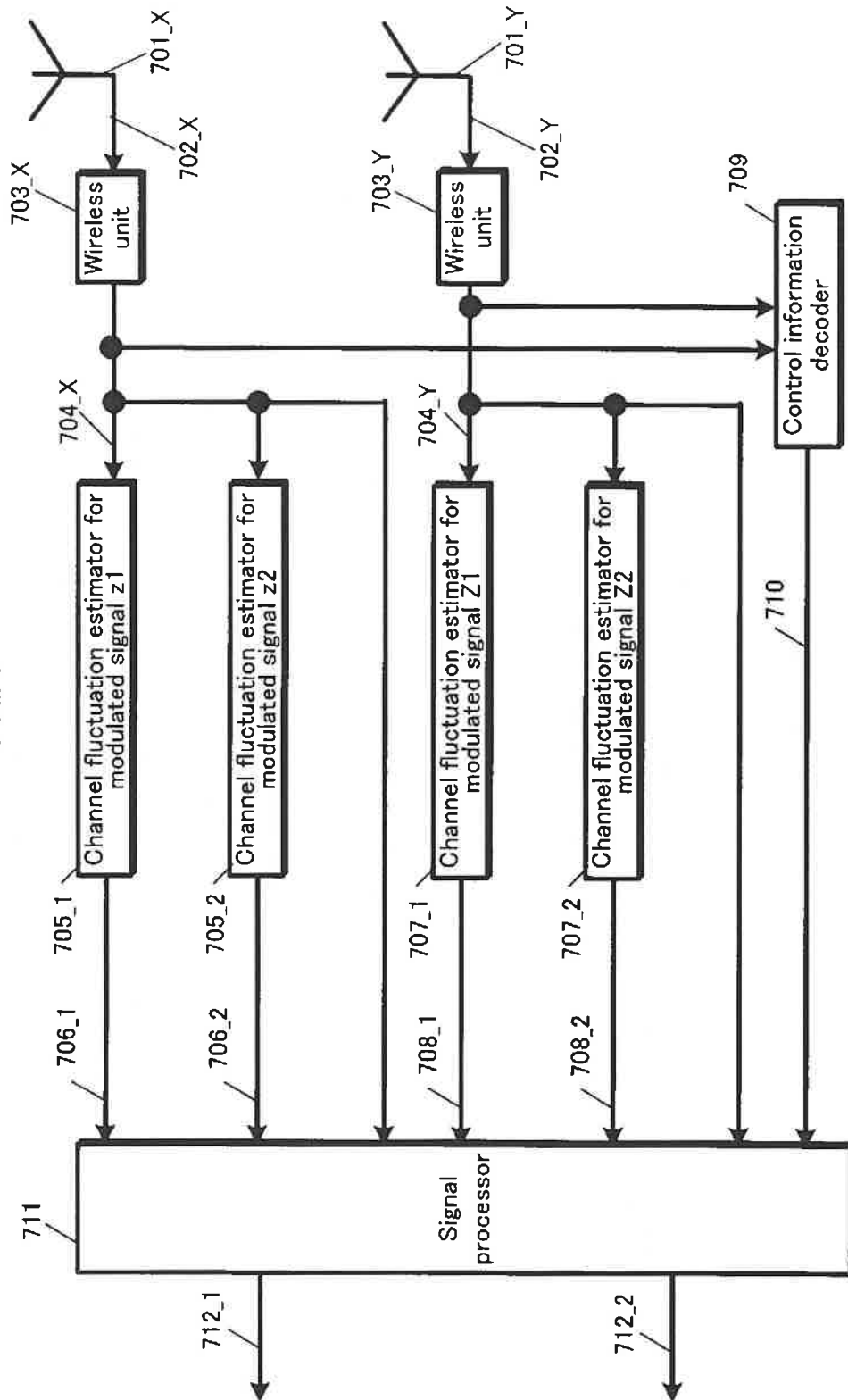


FIG. 8

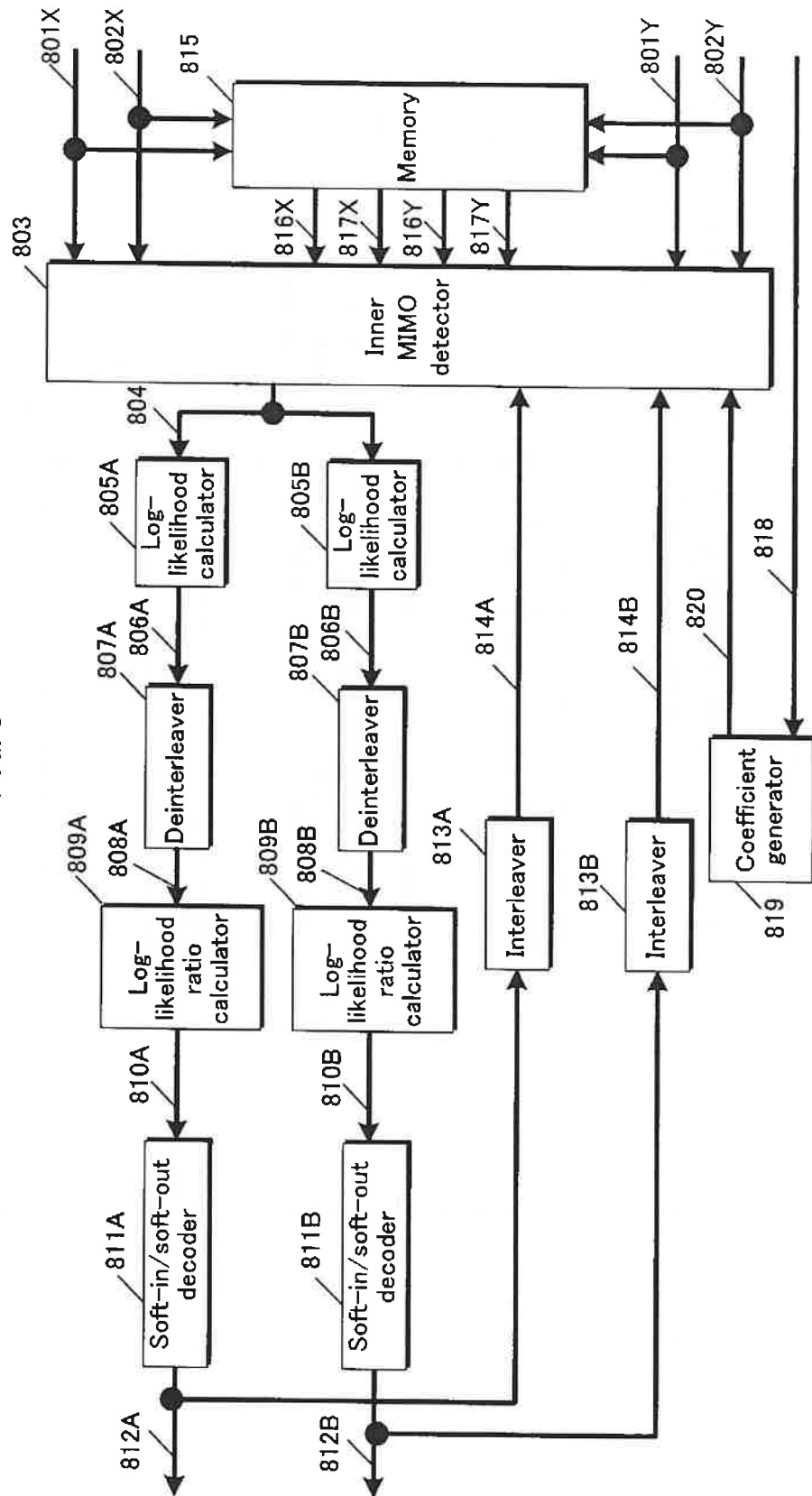


FIG. 10

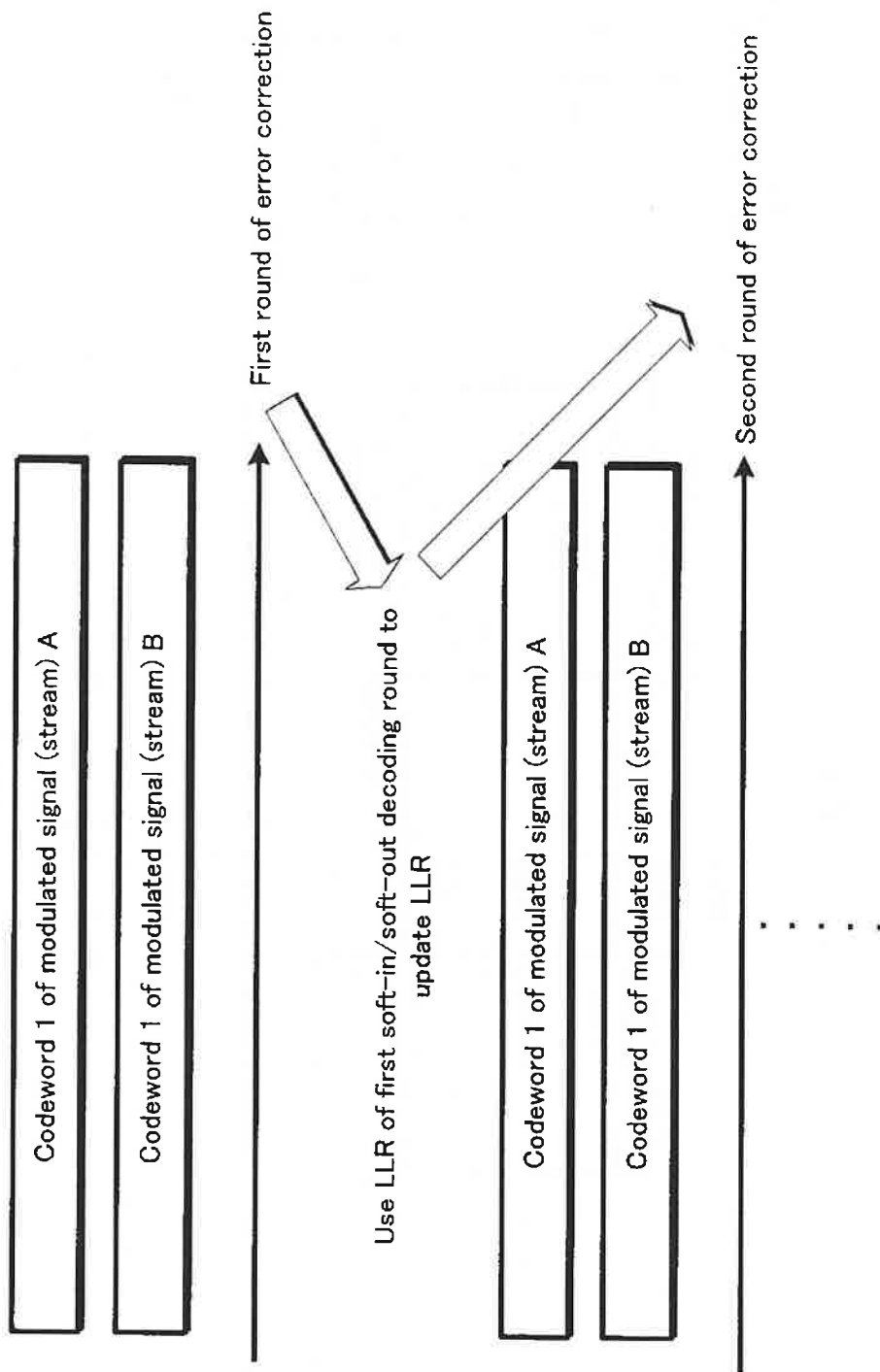


FIG. 11

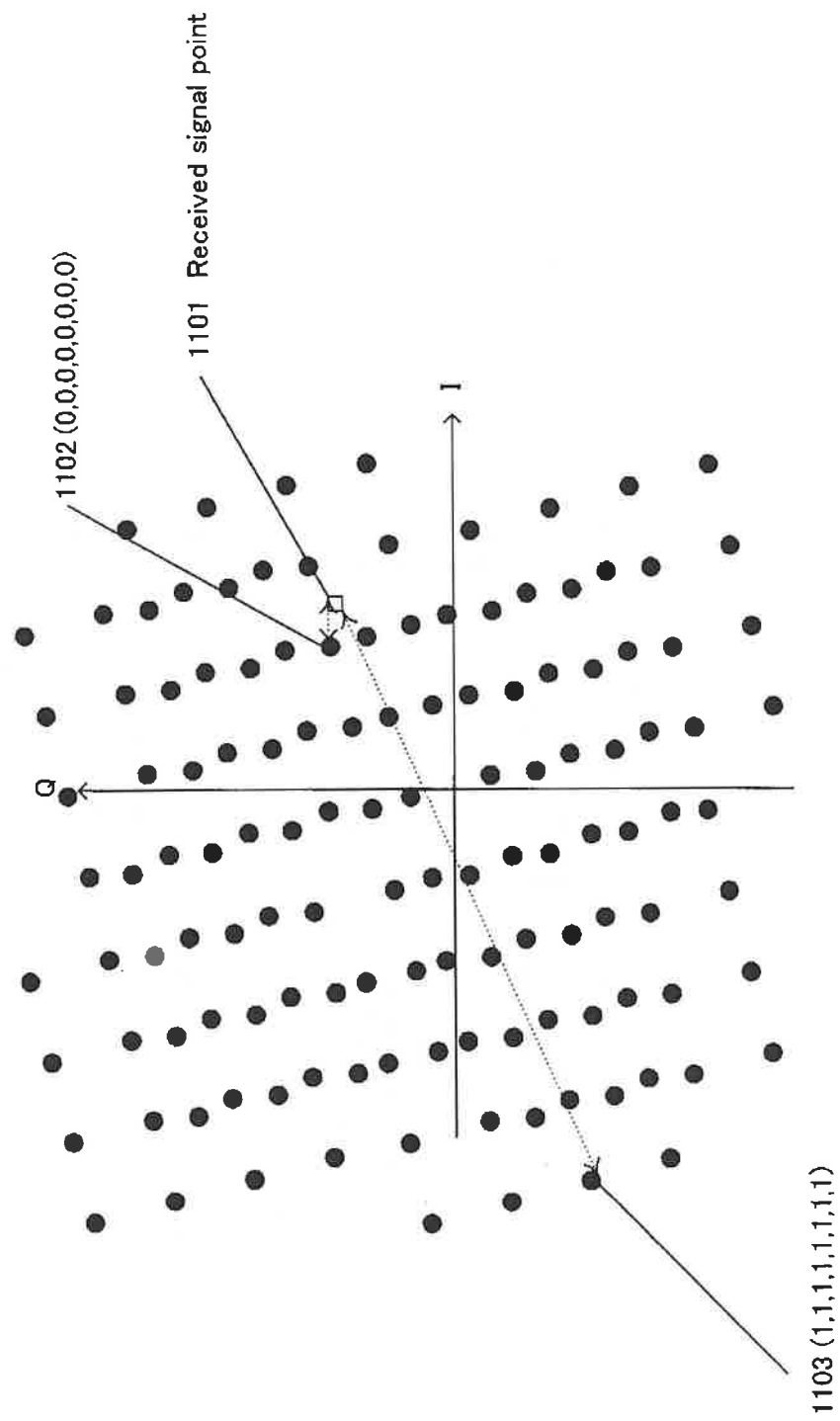


FIG. 12

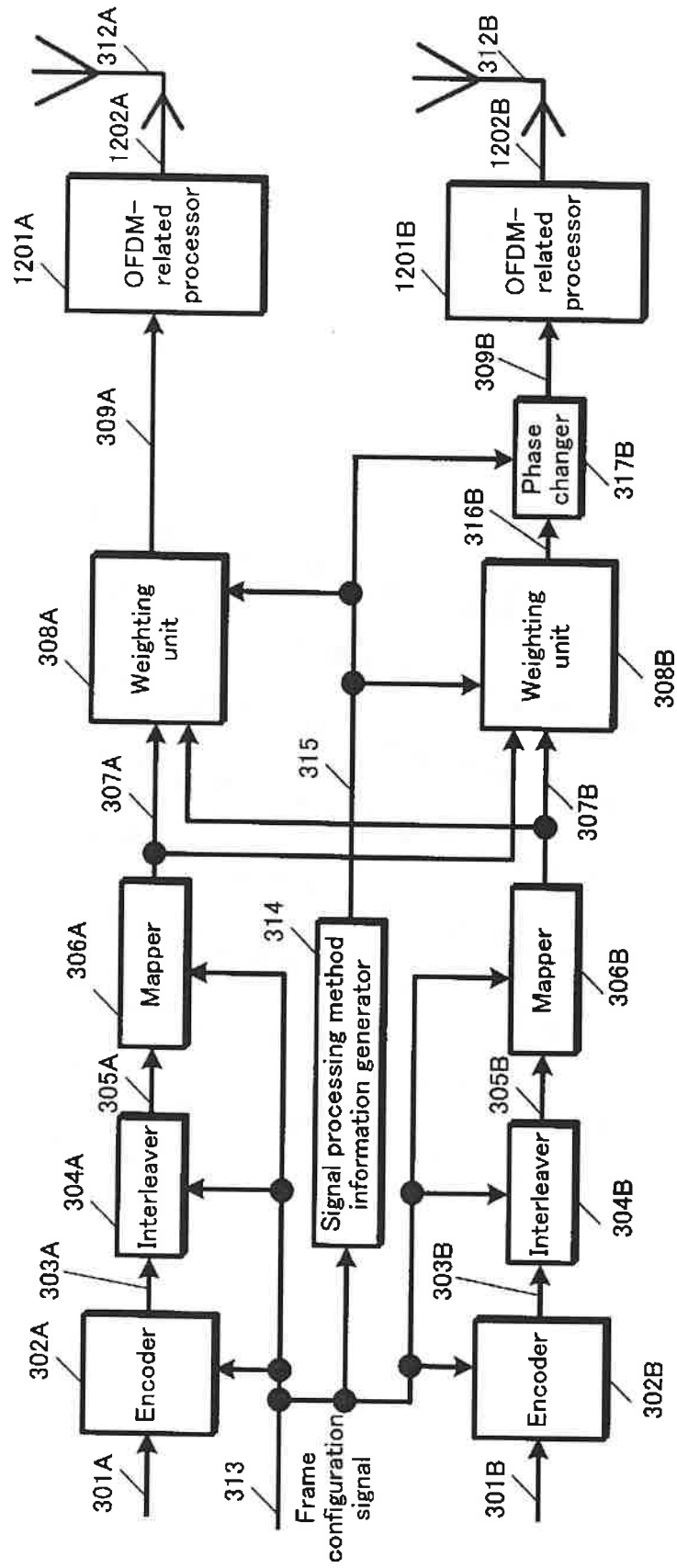


FIG. 13

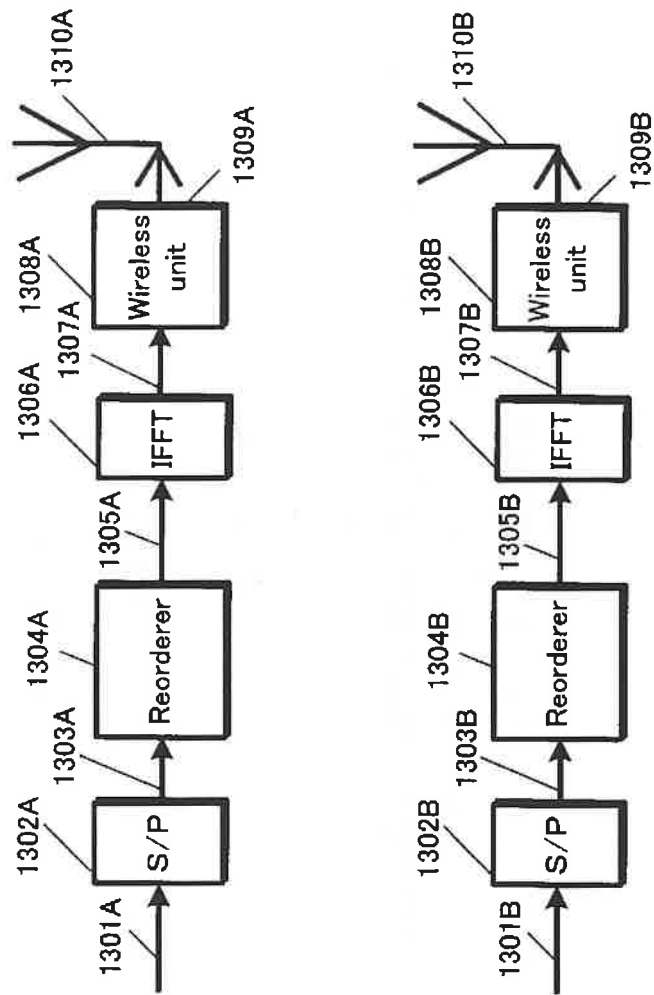


FIG. 14A

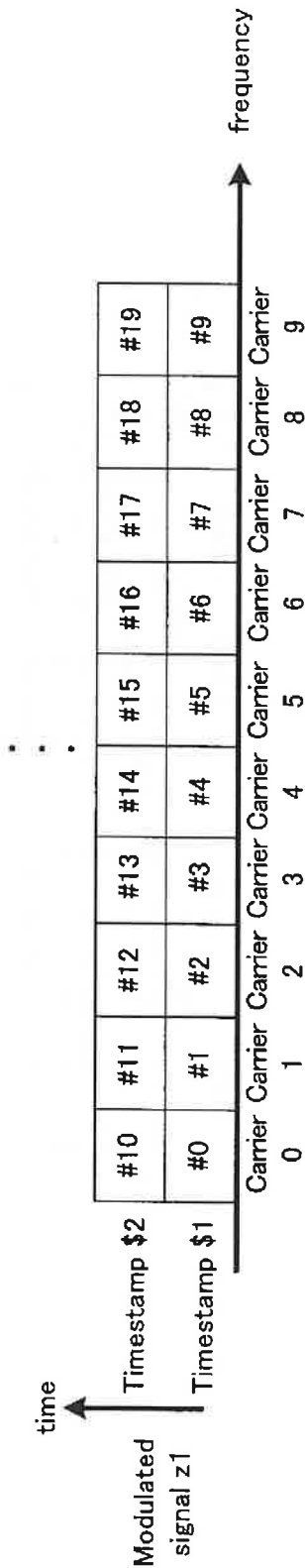


FIG. 14B

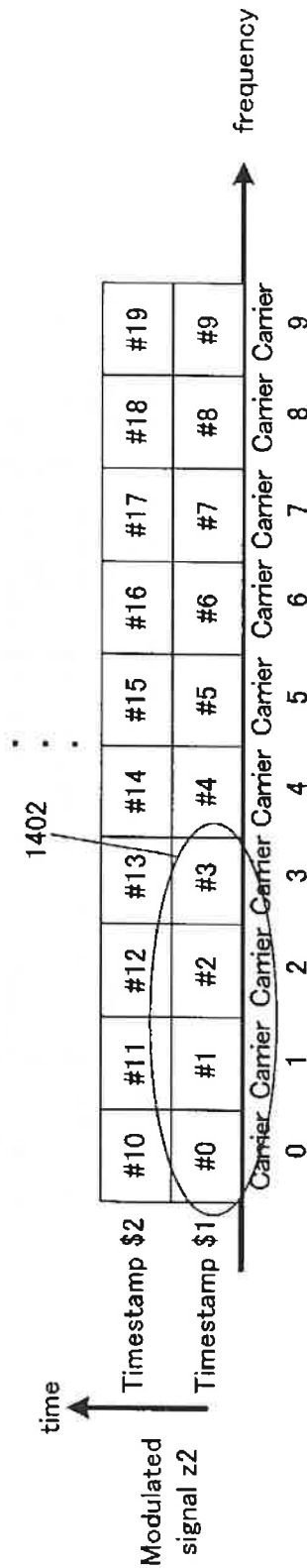


FIG. 15A

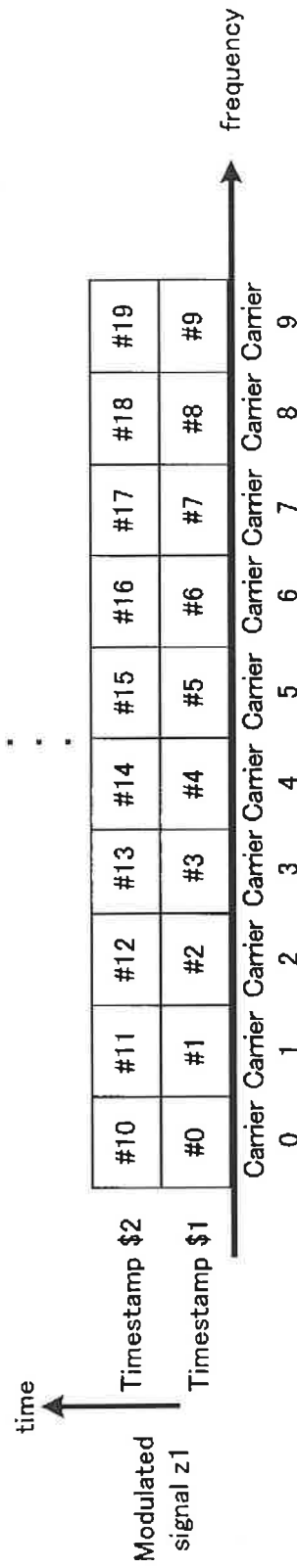


FIG. 15B

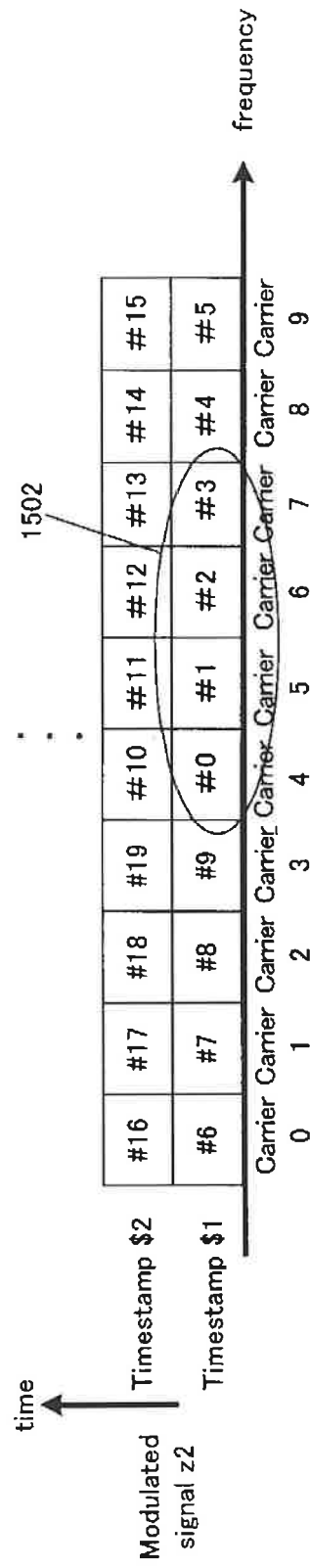


FIG. 16A

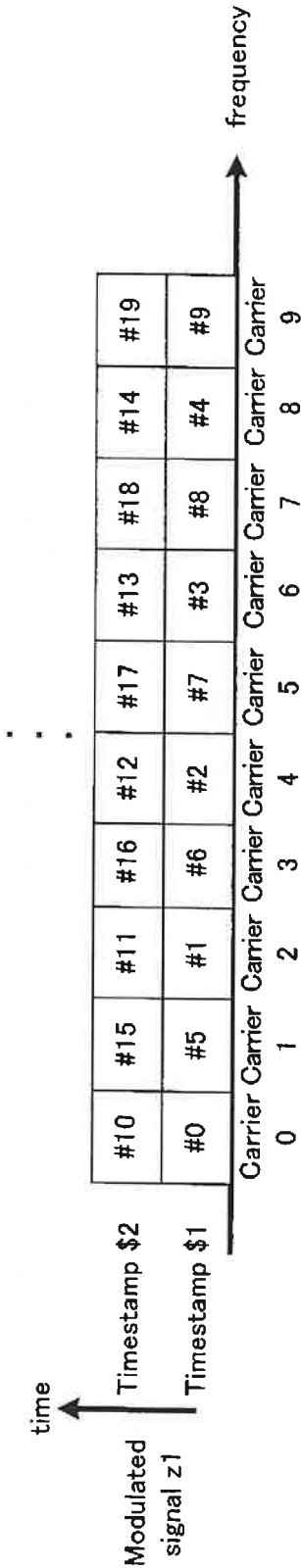


FIG. 16B

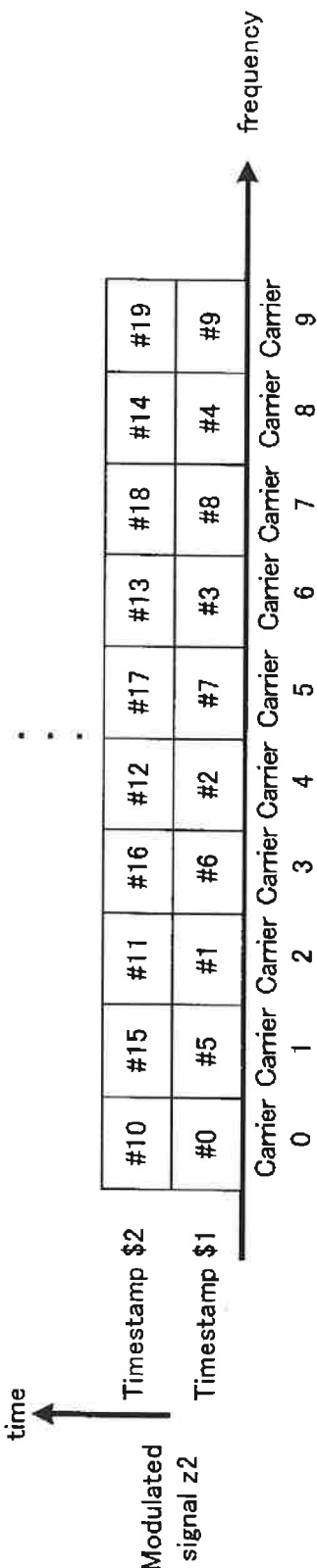


FIG. 17A

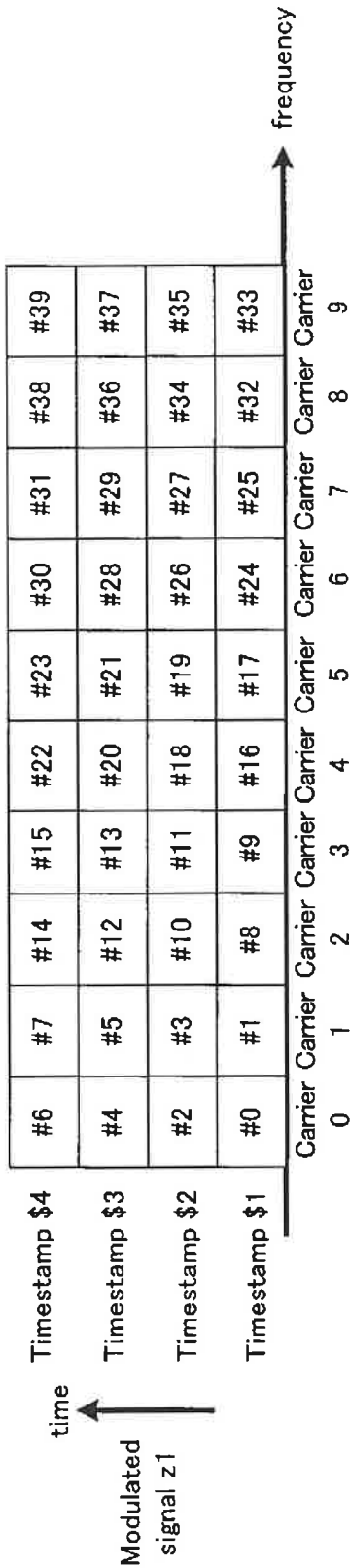


FIG. 17B

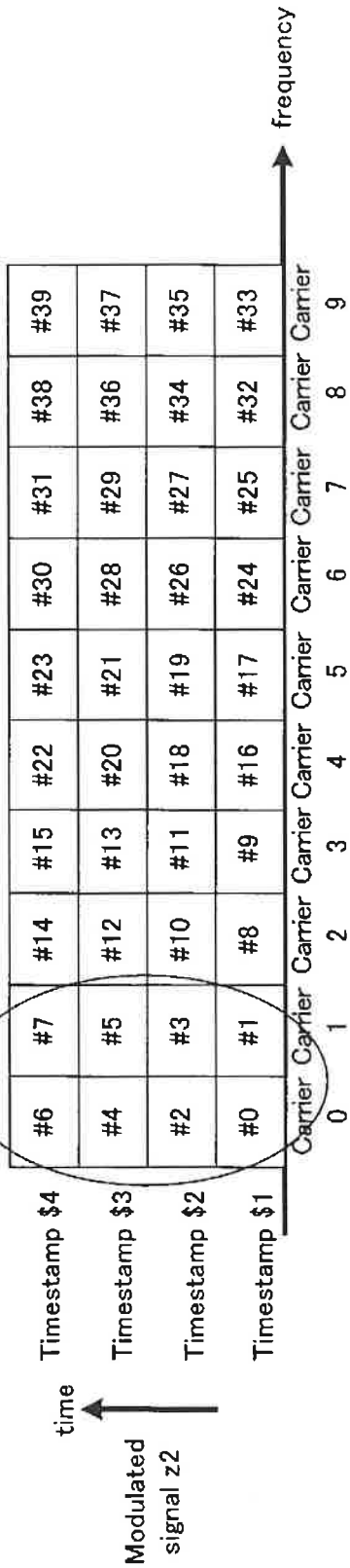


FIG. 18A

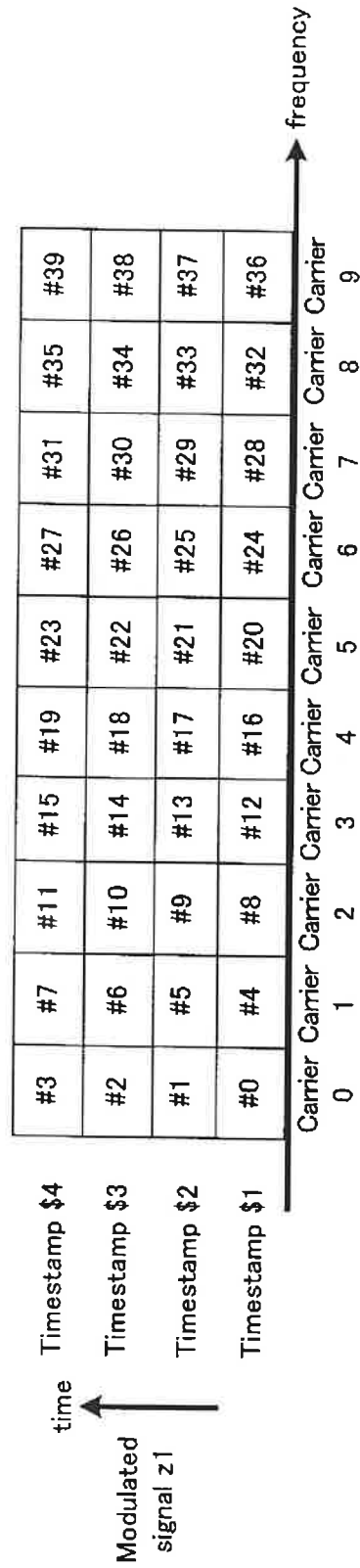


FIG. 18B

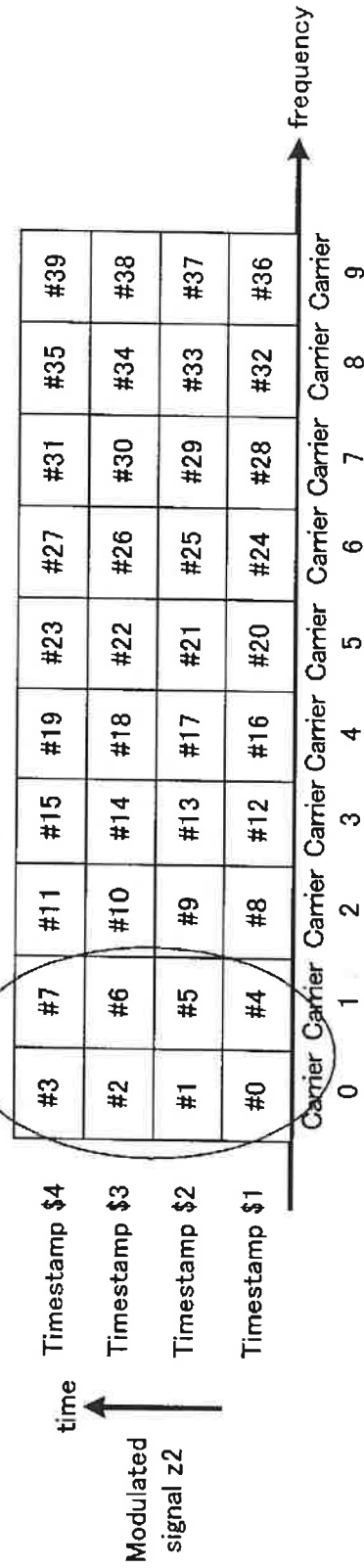


FIG. 19B

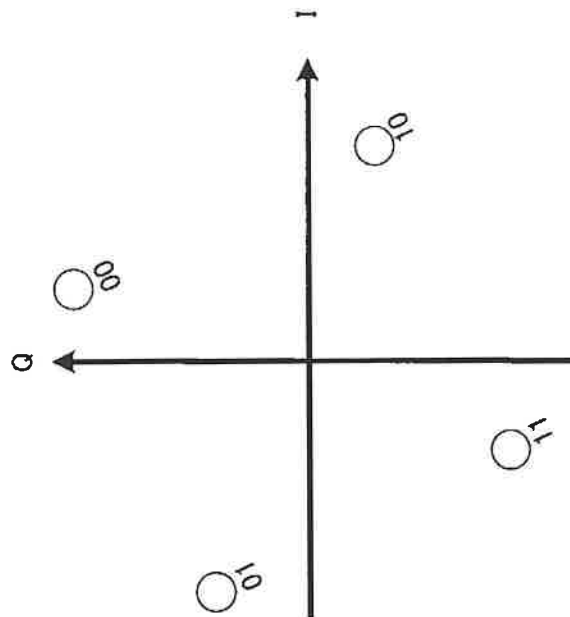


FIG. 19A

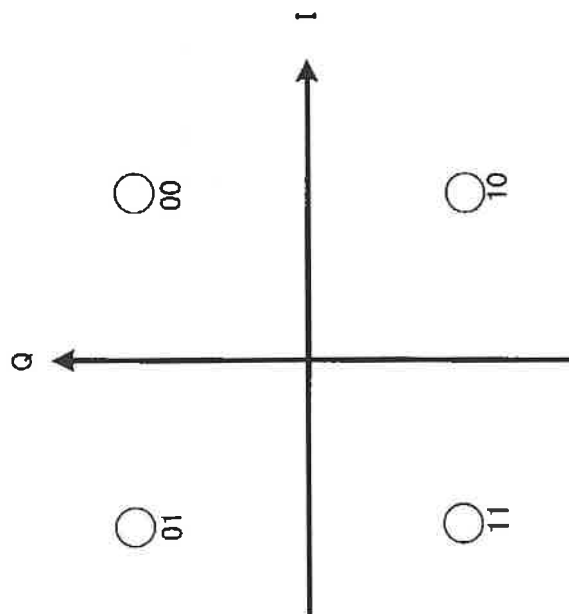


FIG. 20B

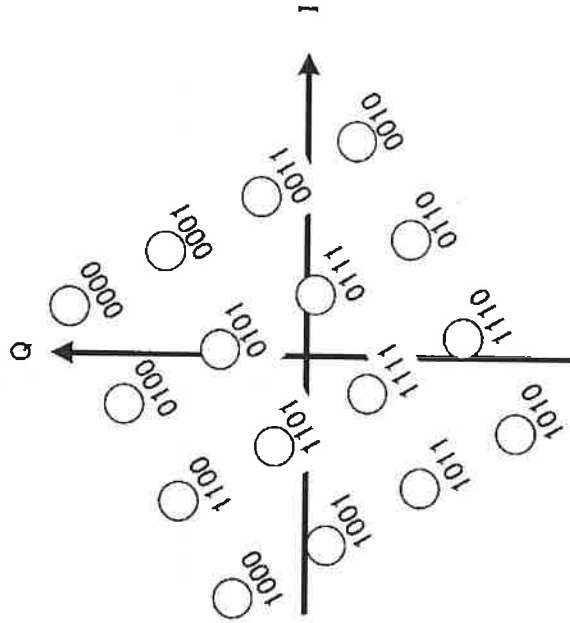


FIG. 20A

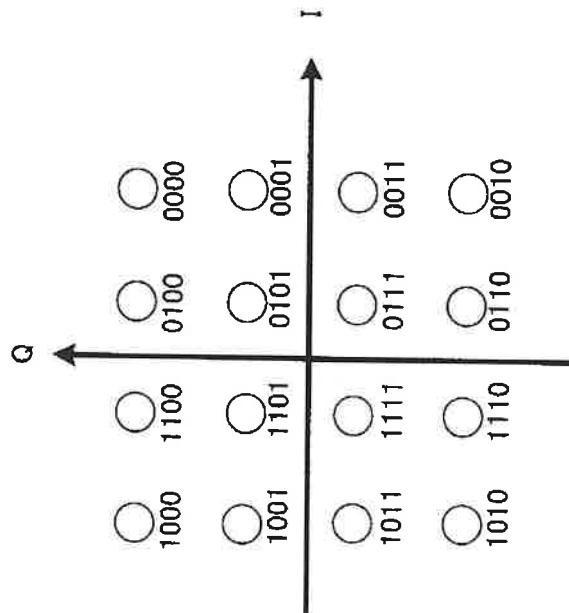


FIG. 21

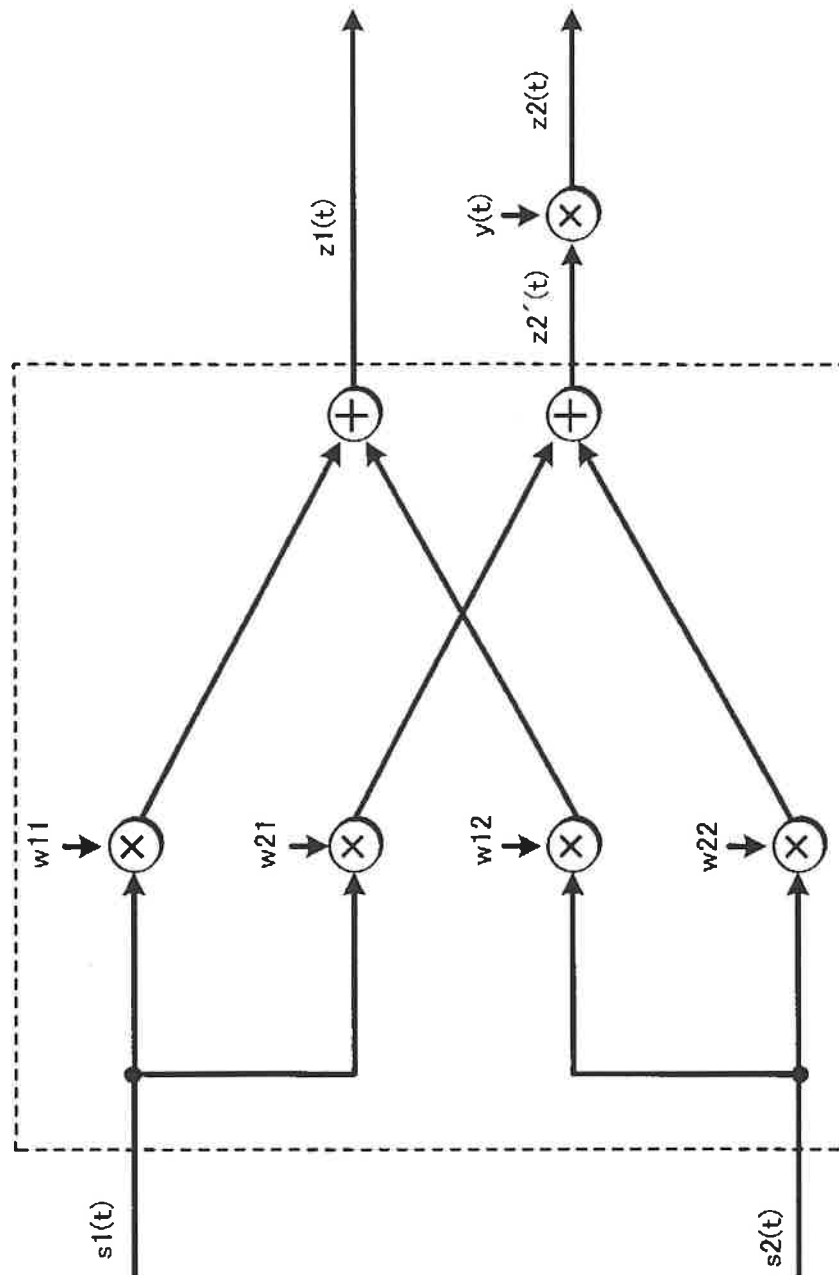


FIG. 22

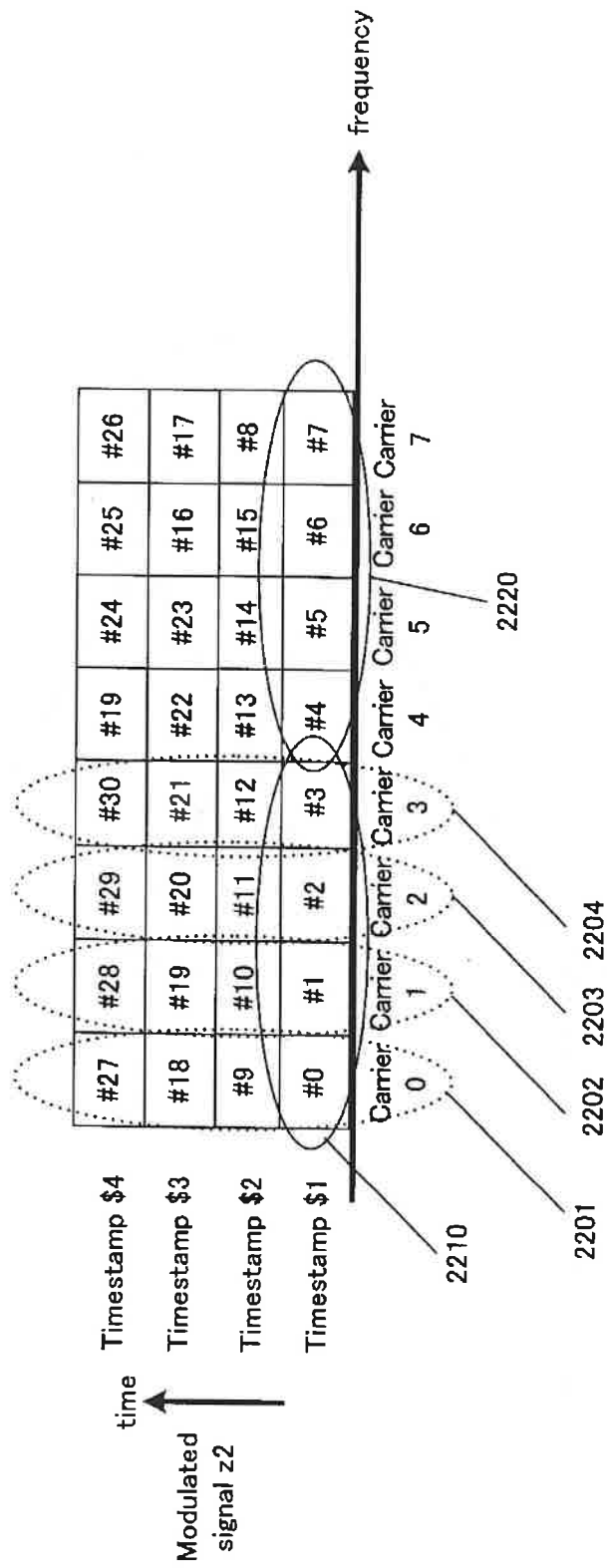


FIG. 23

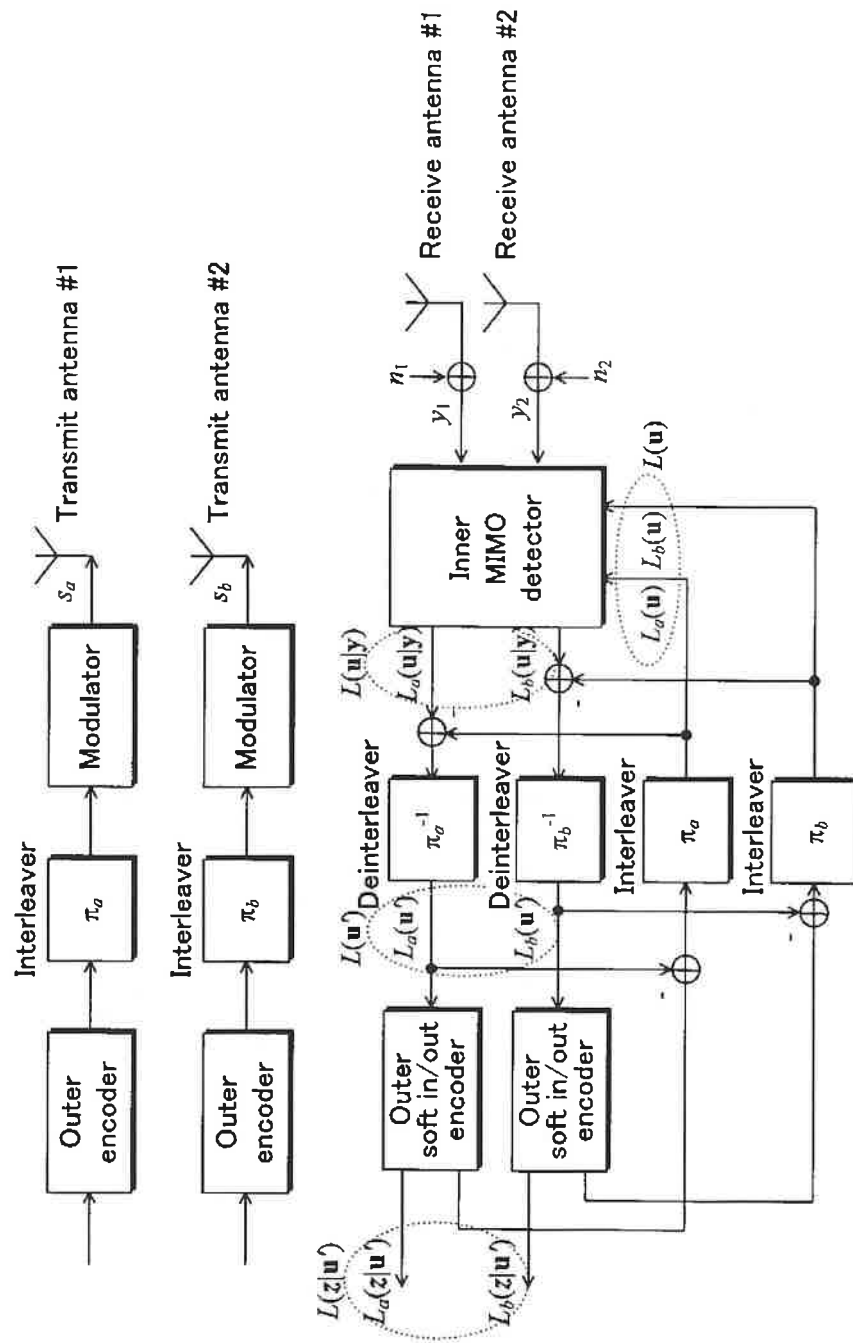


FIG. 24B

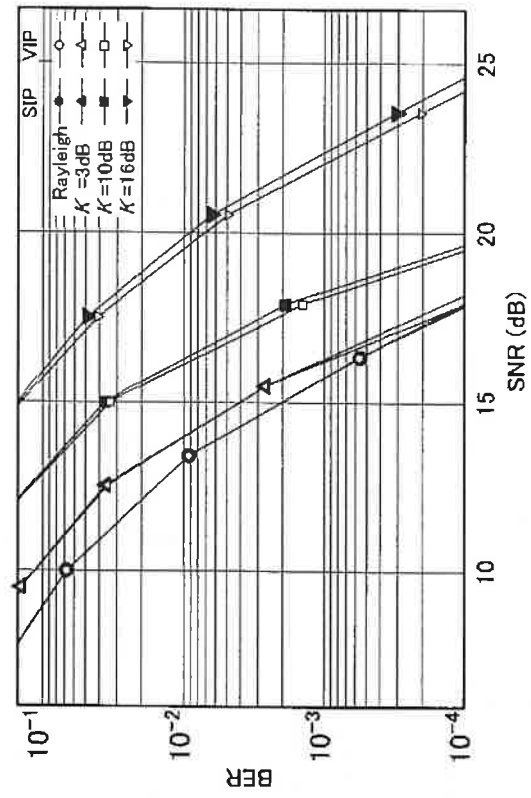


FIG. 24A

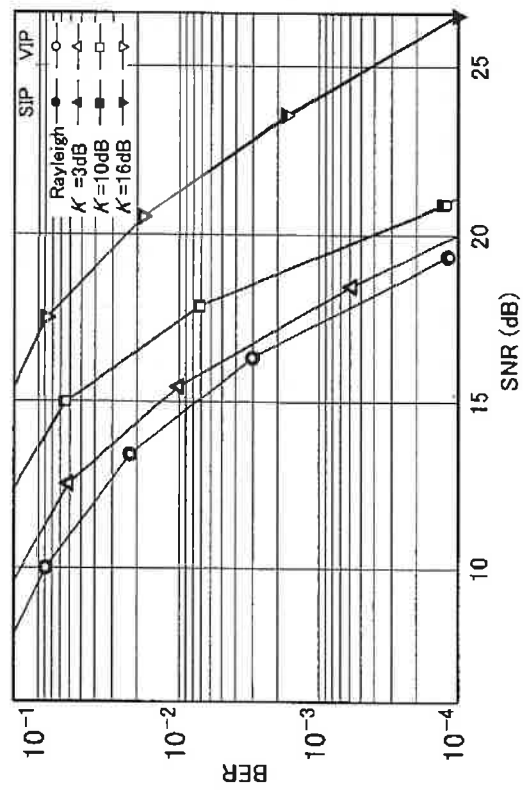
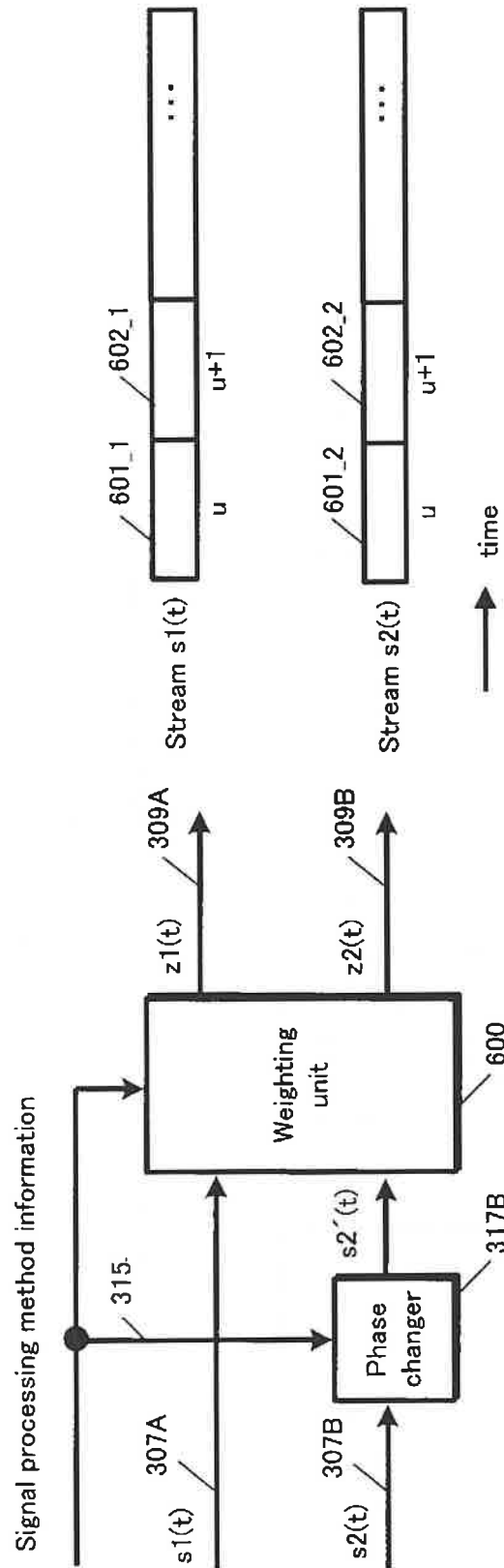


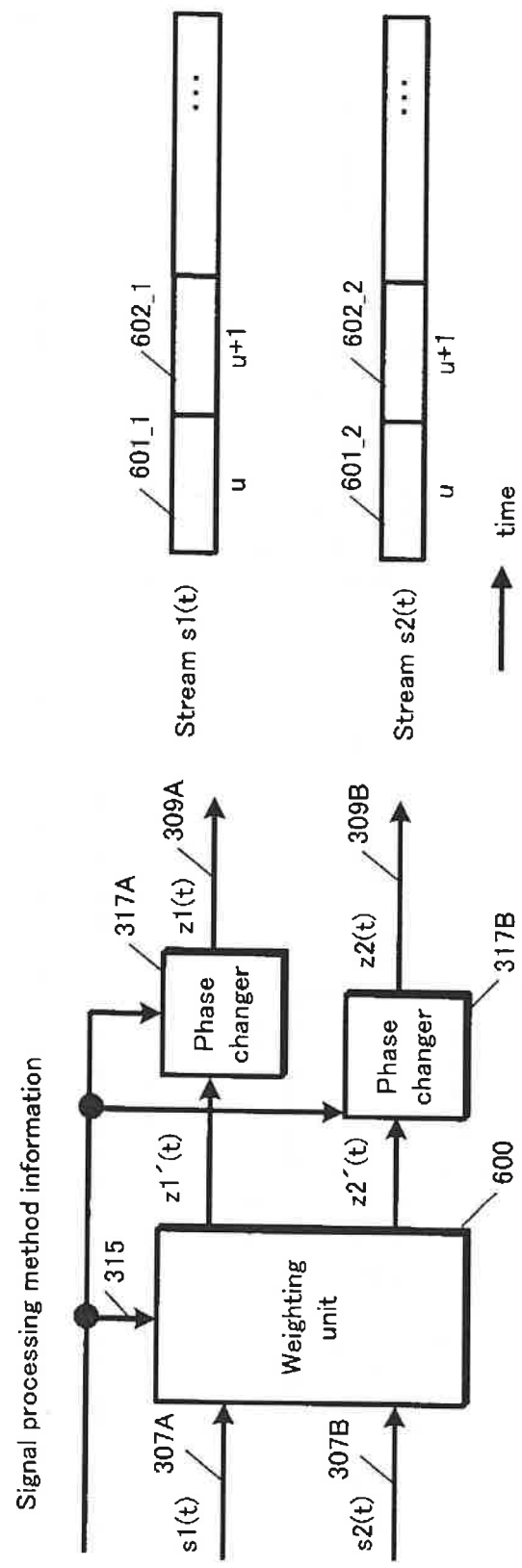
FIG. 25



Sample variations of phase changing formula $y(t)$ used by phase changer

timestamp u	timestamp $u+1$	timestamp $u+2$	timestamp $u+3$	timestamp $u+k$
$y(u) = e^{j0}$	$y(u+1) = e^{j\frac{\pi}{2}}$	$y(u+2) = e^{j\pi}$	$y(u+3) = e^{j\frac{3\pi}{2}}$	$y(u+k) = e^{j\frac{k\pi}{2}}$
			...	...

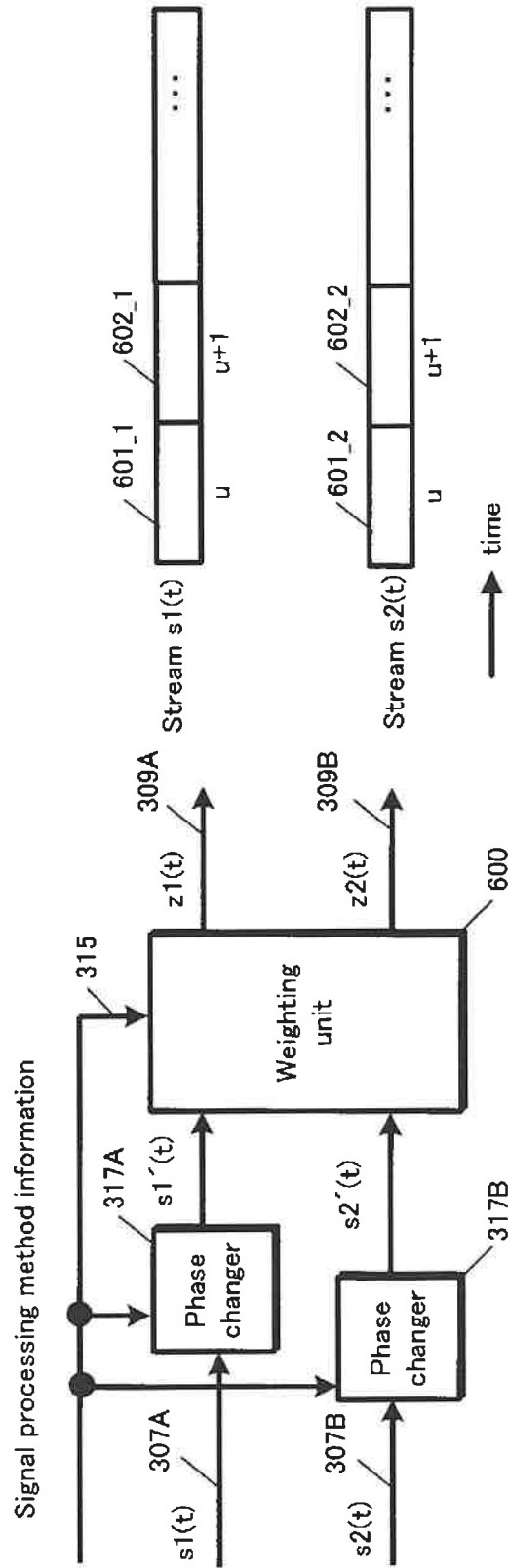
FIG. 26



Sample variations of phase changing formulae $y_1(t)$, $y_2(t)$ used by phase changers

timestamp u	timestamp $u+1$	timestamp $u+2$	timestamp $u+3$	timestamp $u+k$
$y_1(u) = e^{j0}$	$y_1(u+1) = e^{j\frac{\pi}{4}}$	$y_1(u+2) = e^{j\frac{\pi}{2}}$	$y_1(u+3) = e^{j\frac{3\pi}{4}}$	$y_1(u+k) = e^{j\frac{k\pi}{4}}$
$y_2(u) = e^{-j\frac{\pi}{2}}$	$y_2(u+1) = e^{-j\frac{3\pi}{4}}$	$y_2(u+2) = e^{-j\pi}$	$y_2(u+3) = e^{-j\frac{5\pi}{4}}$	$y_2(u+k) = e^{j\left(-\frac{k\pi}{4} - \frac{\pi}{2}\right)}$

FIG. 27



Sample variations of phase changing formulae $y_1(t)$, $y_2(t)$ used by phase changers

timestamp u	timestamp $u+1$	timestamp $u+2$	timestamp $u+3$	timestamp $u+k$
$y_1(u) = e^{j0}$	$y_1(u+1) = e^{j\frac{\pi}{4}}$	$y_1(u+2) = e^{j\frac{\pi}{2}}$	$y_1(u+3) = e^{j\frac{3\pi}{4}}$	$y_1(u+k) = e^{j\frac{k\pi}{4}}$
$y_2(u) = e^{-j\frac{\pi}{2}}$	$y_2(u+1) = e^{-j\frac{3\pi}{4}}$	$y_2(u+2) = e^{-j\pi}$	$y_2(u+3) = e^{-j\frac{5\pi}{4}}$	$y_2(u+k) = e^{-j\left(\frac{k\pi}{4} - \frac{\pi}{2}\right)}$

FIG. 28

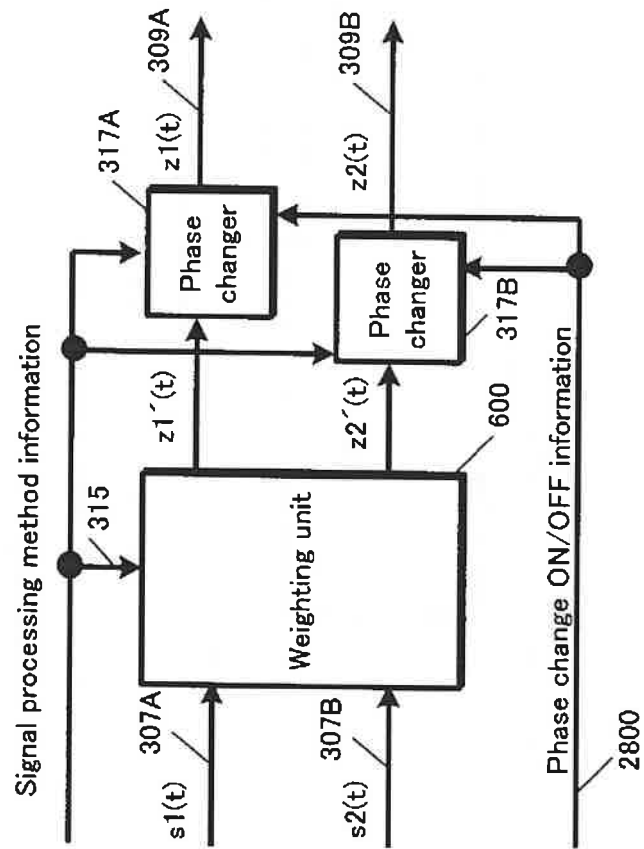


FIG. 29

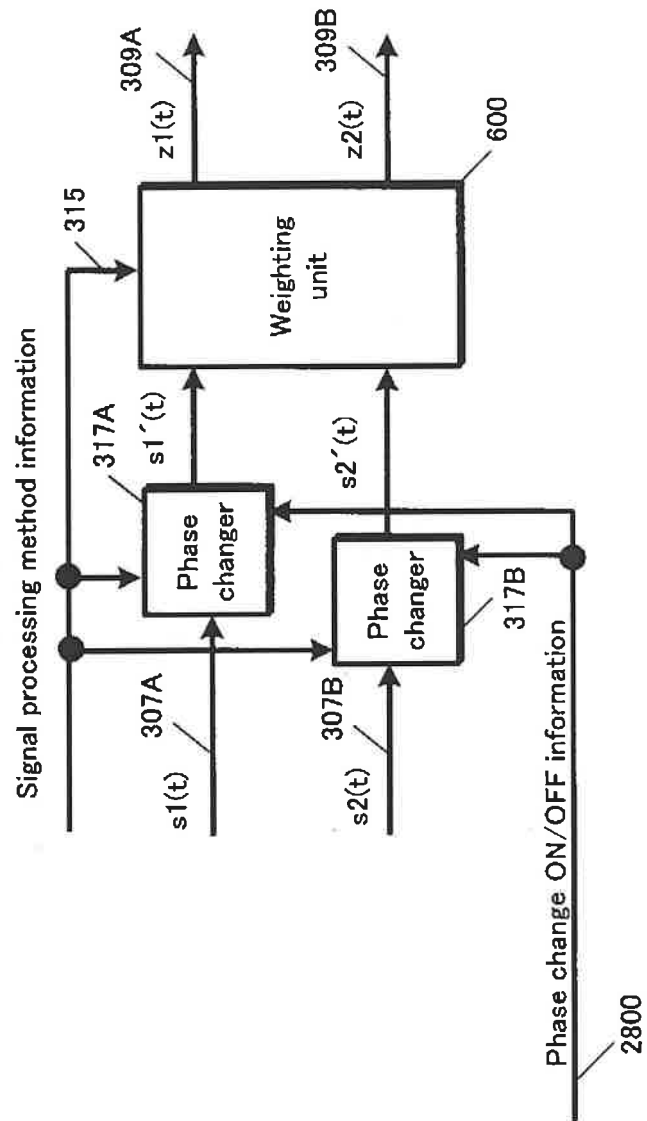


FIG. 30

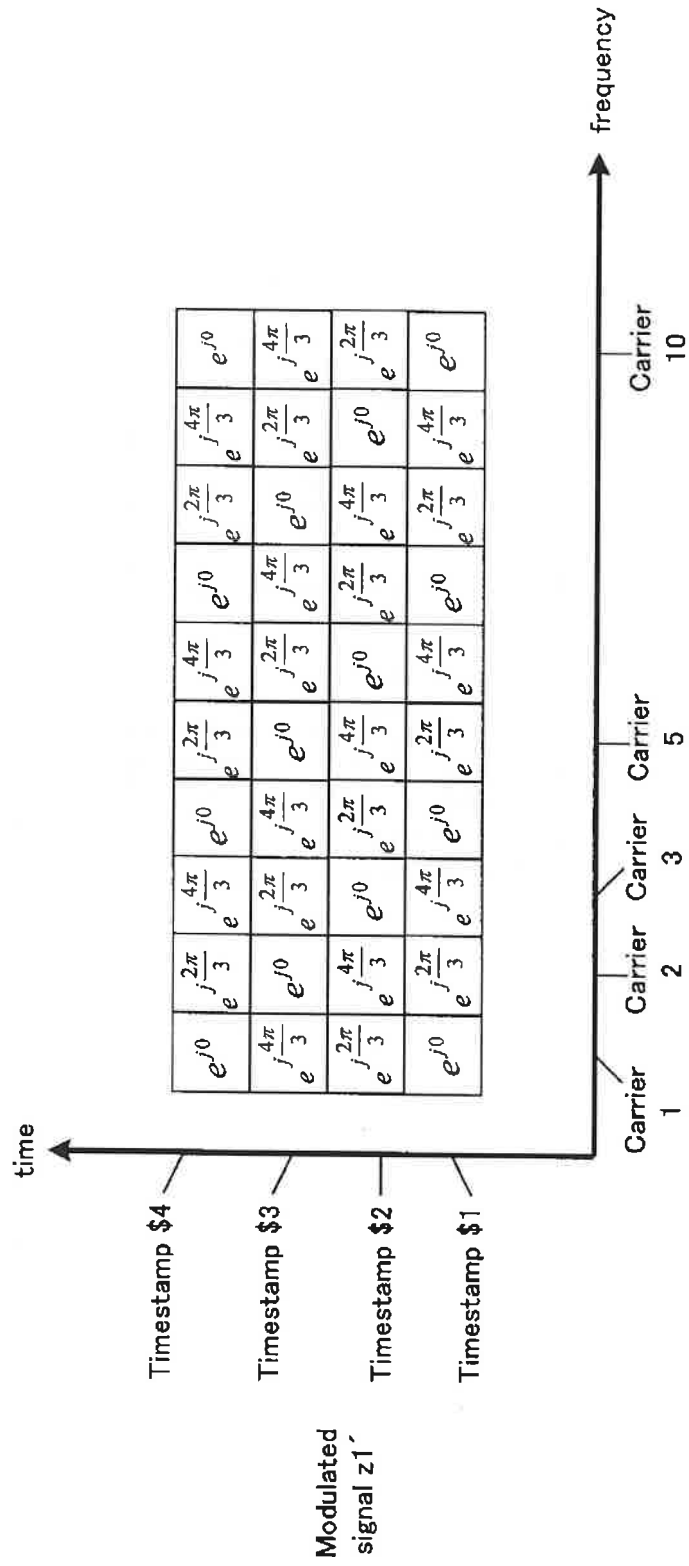


FIG. 31

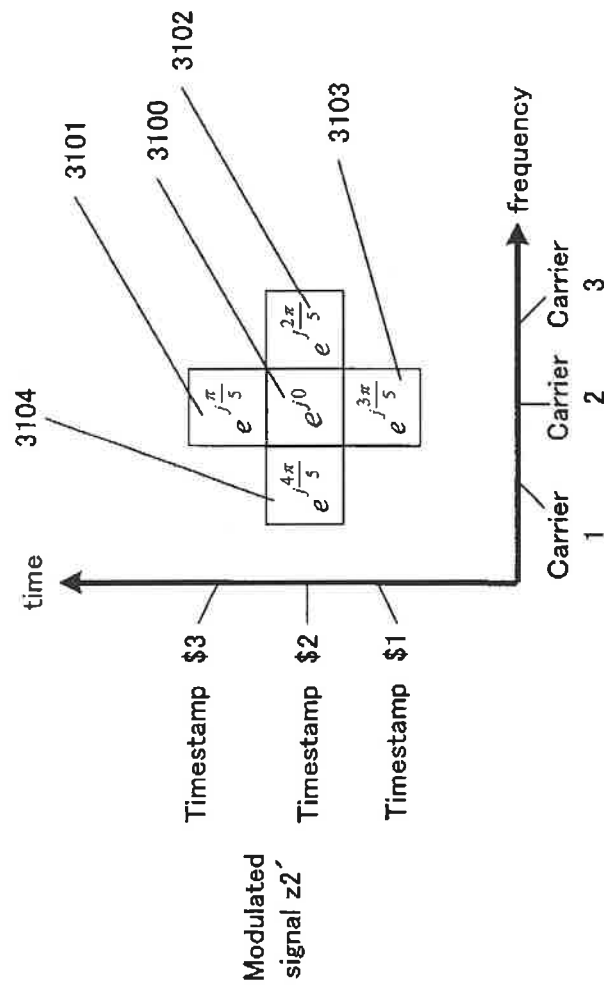


FIG. 32

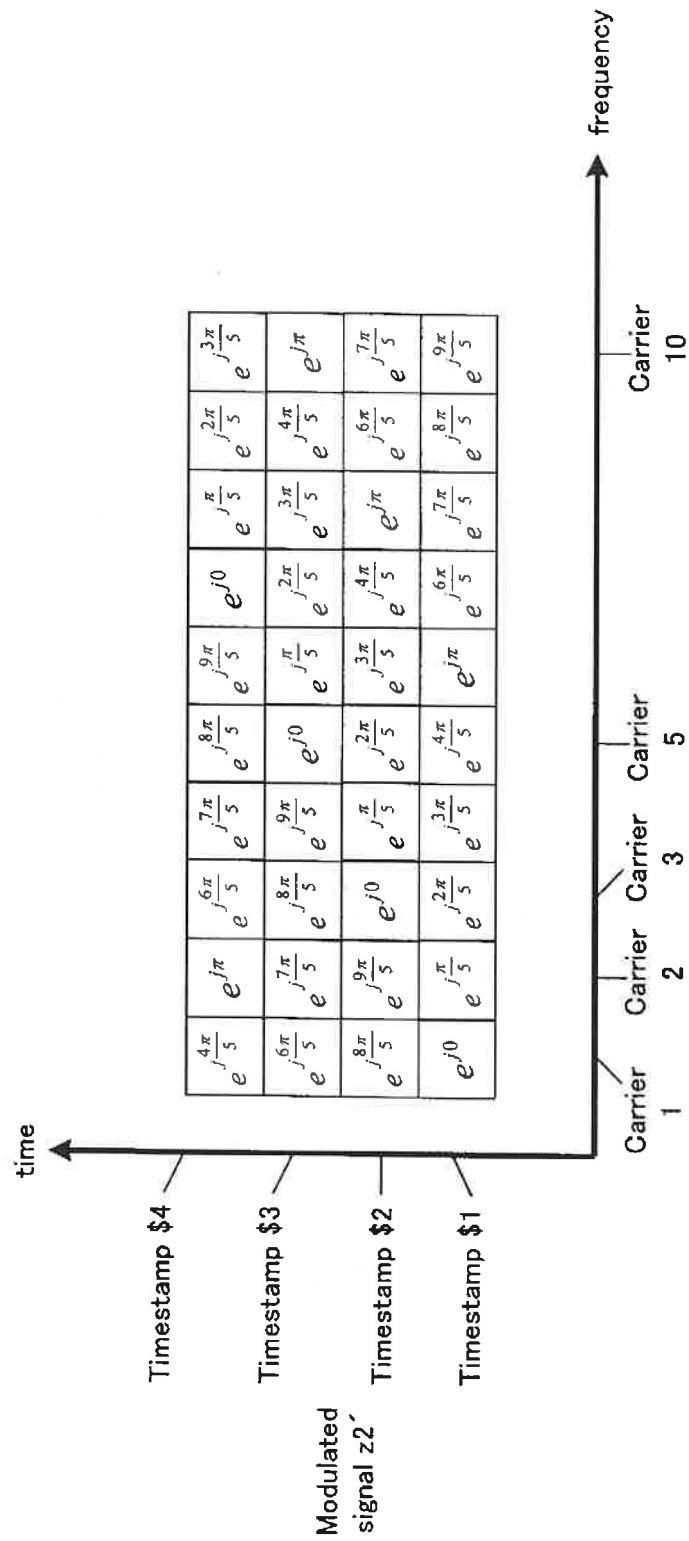


FIG. 33

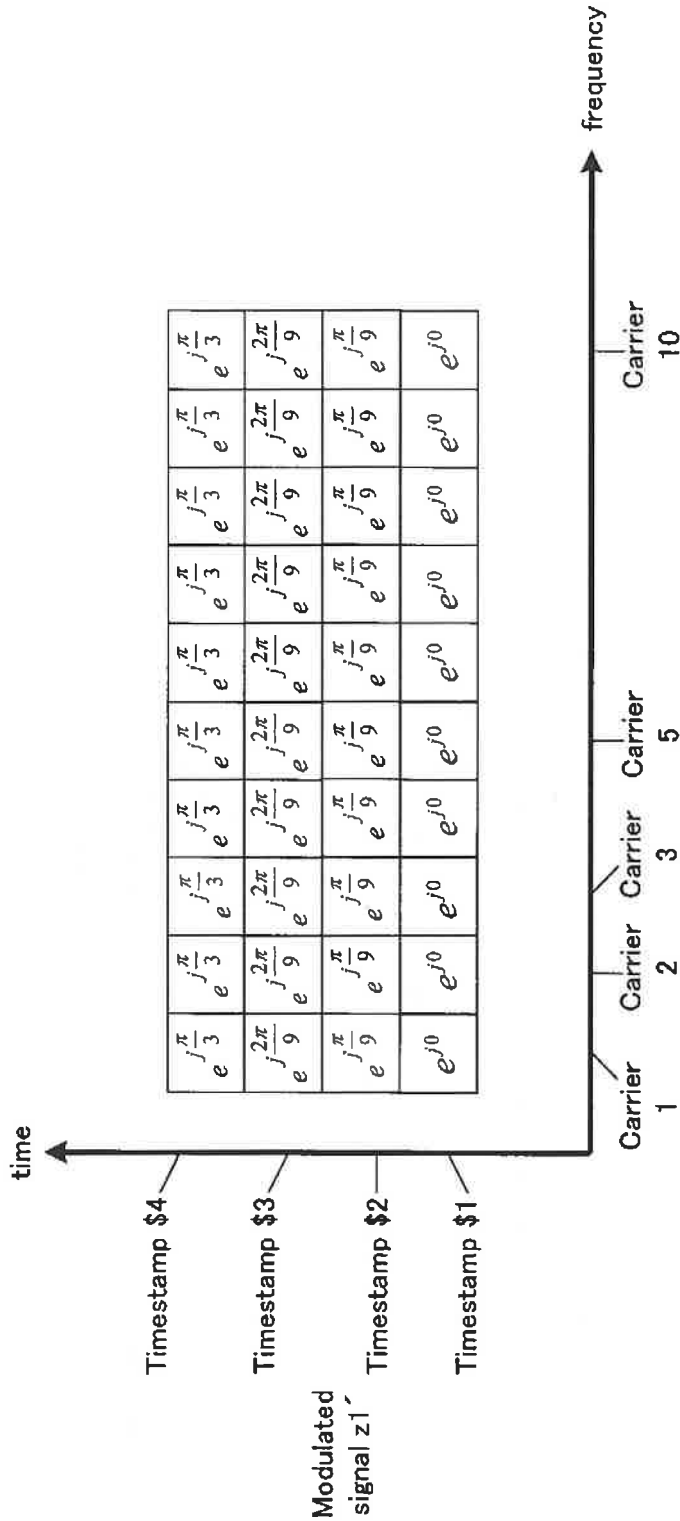


FIG. 34

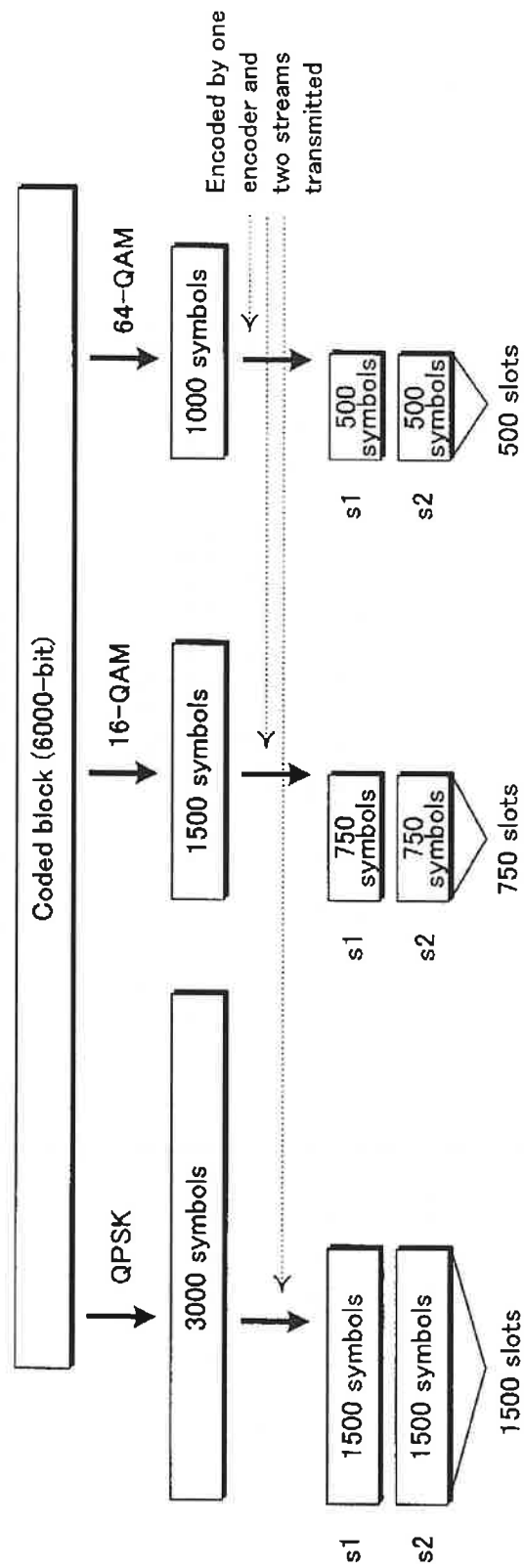
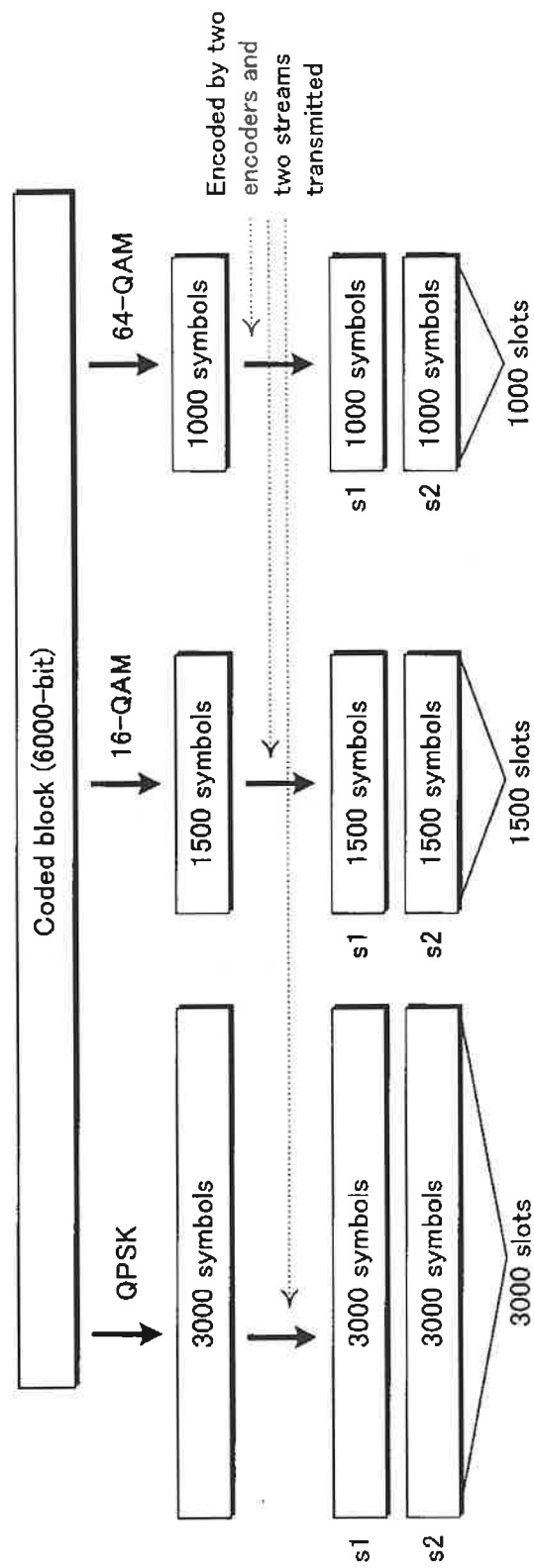


FIG. 35



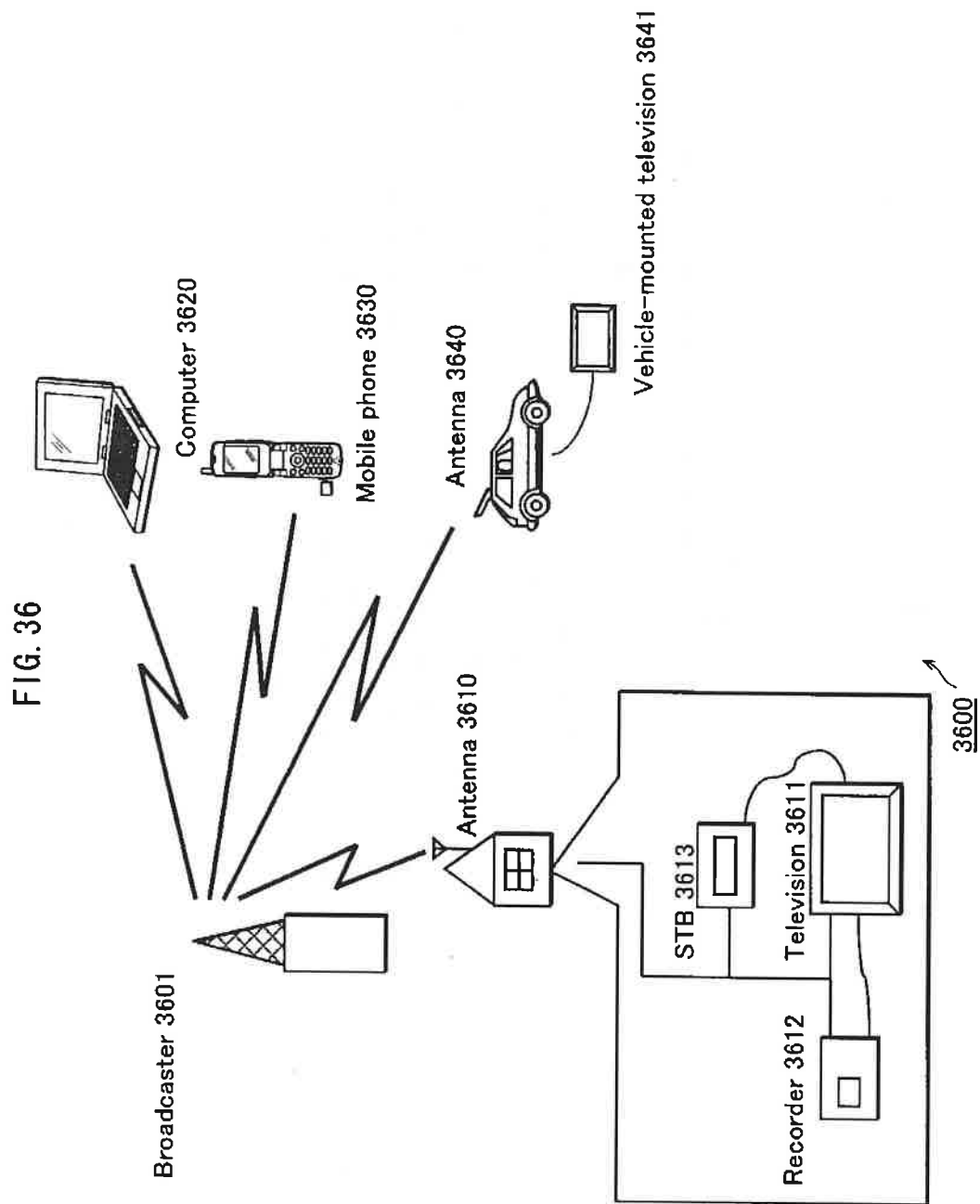


FIG. 37

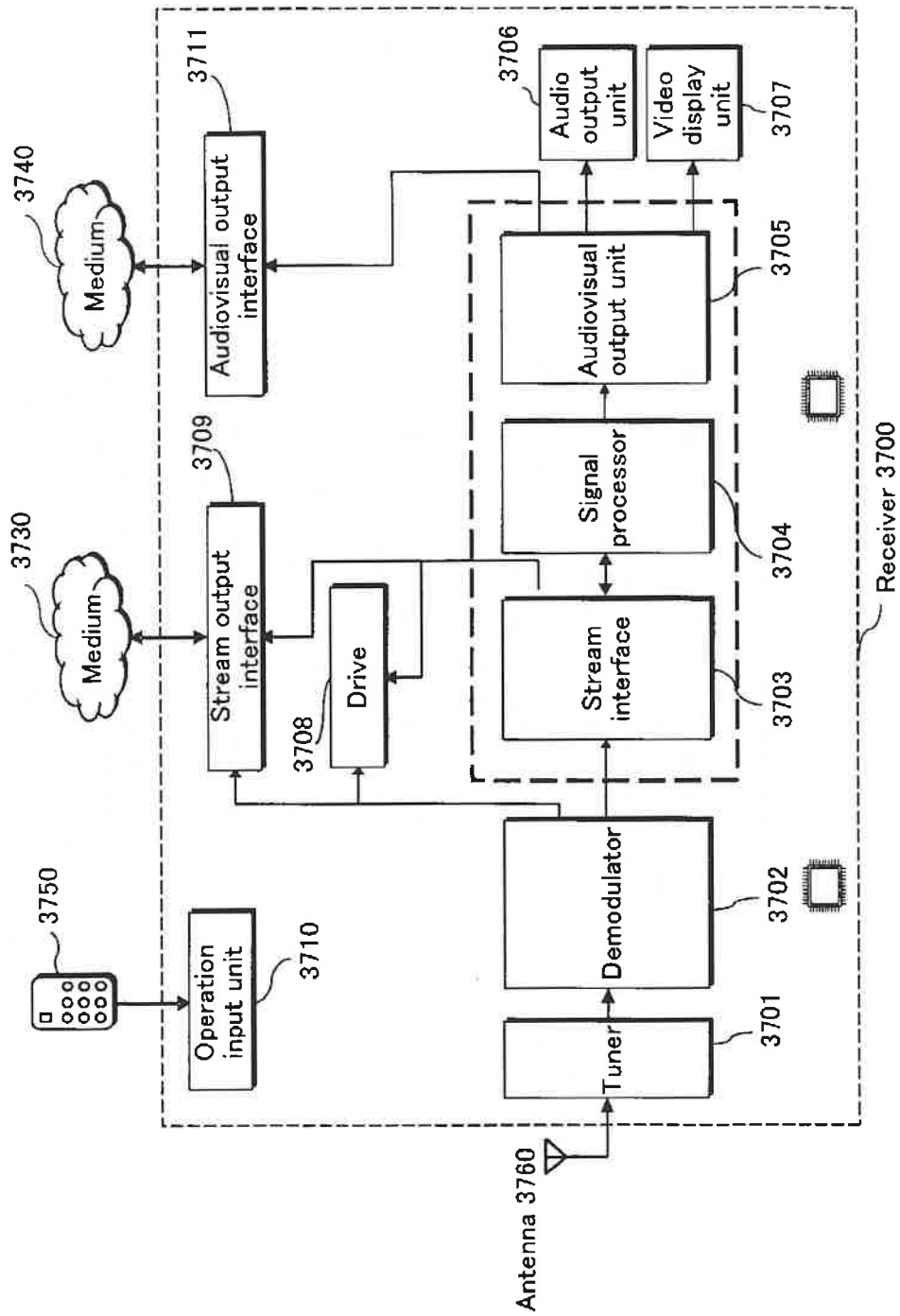


FIG. 38

Video stream PID=(0x1011 Main video)
Audio stream (PID=0x1100)
Audio stream (PID=0x1101)
Presentation graphics stream (PID=0x1200)
Presentation graphics stream (PID=0x1201)
Interactive graphics stream (PID=0x1400)
Video stream (PID=0x1B00 Sub-video)
Video stream (PID=0x1B01 Sub-video)

FIG. 39

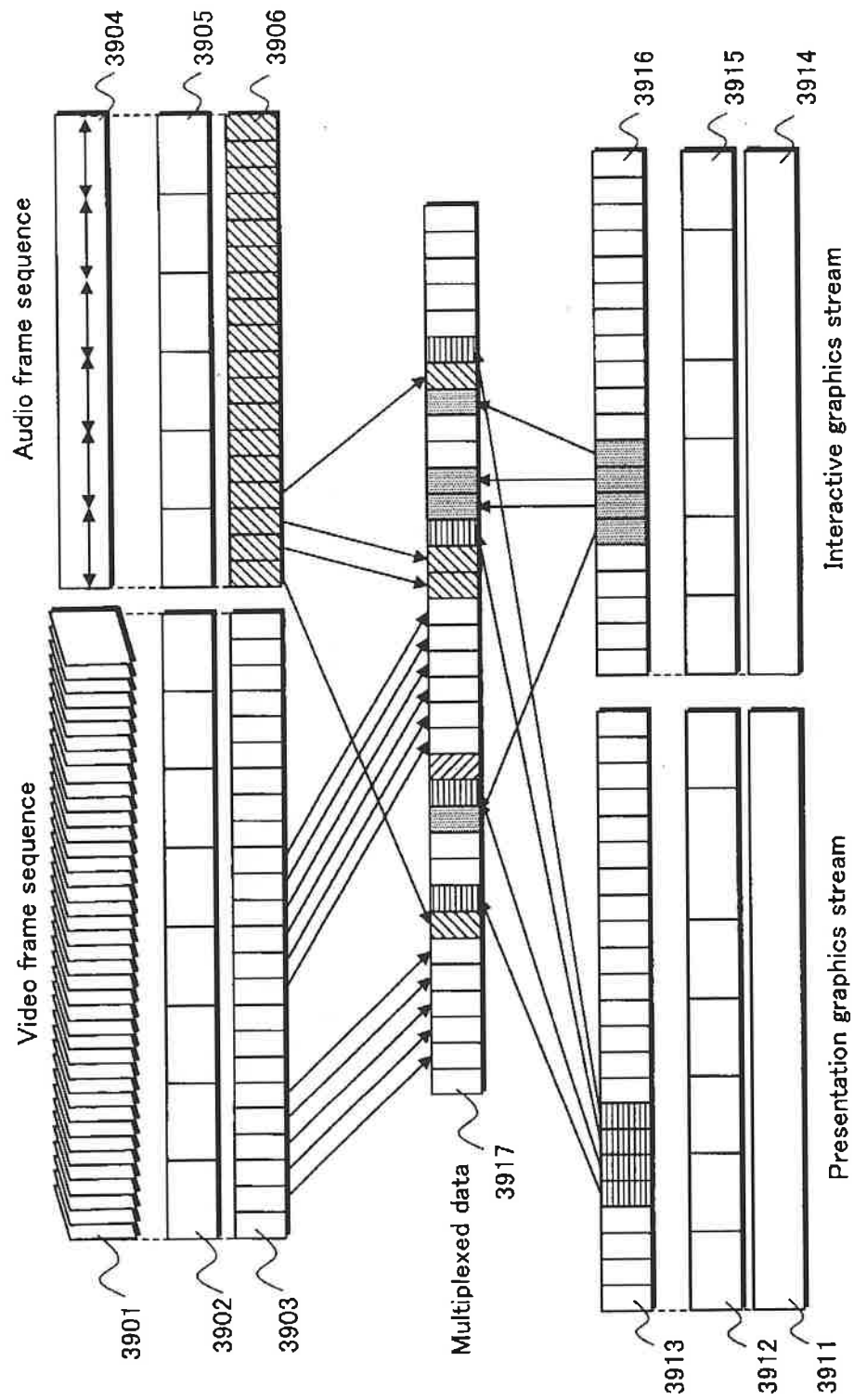


FIG. 40

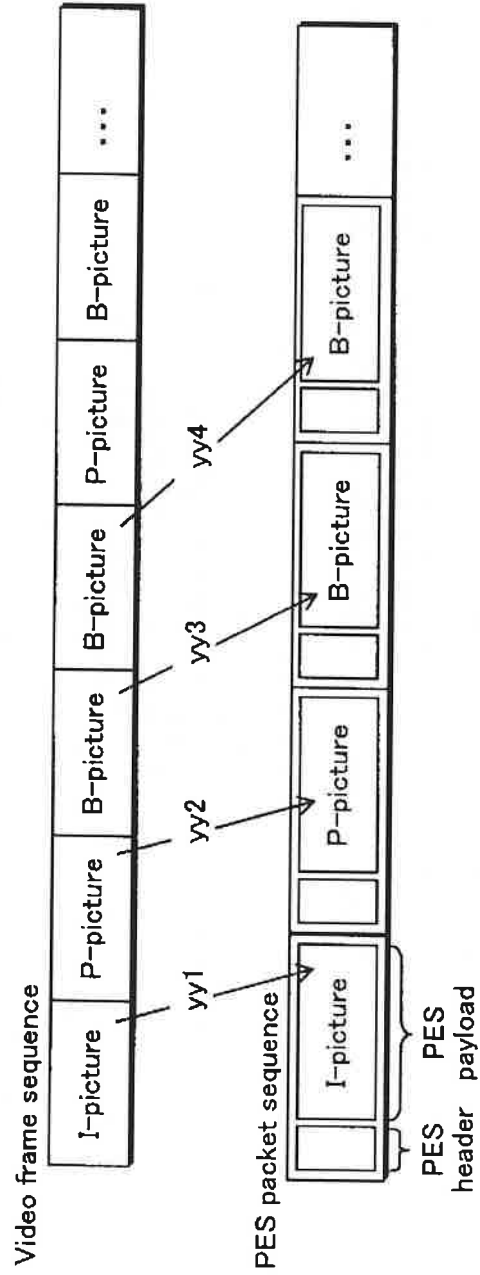


FIG. 41

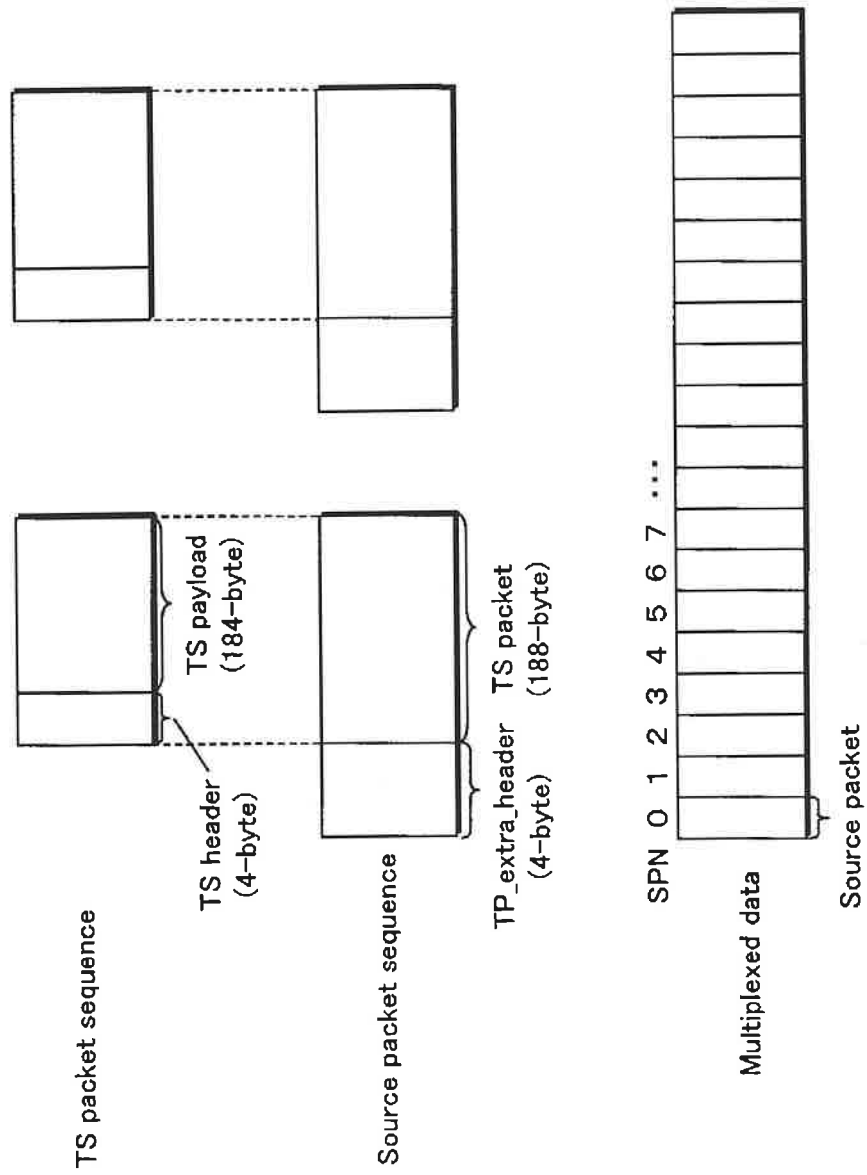


FIG. 42

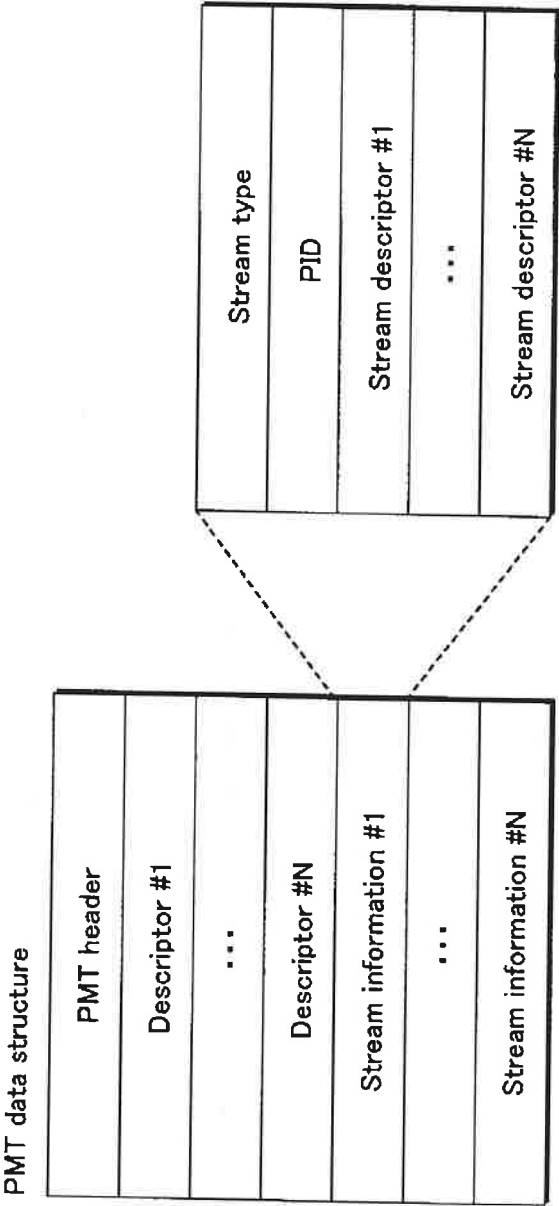


FIG. 43

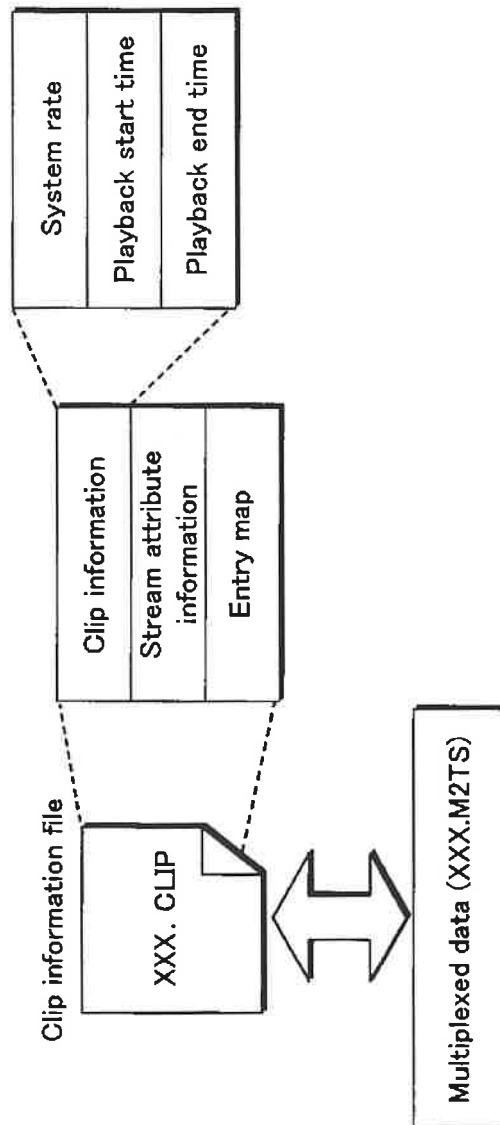


FIG. 44

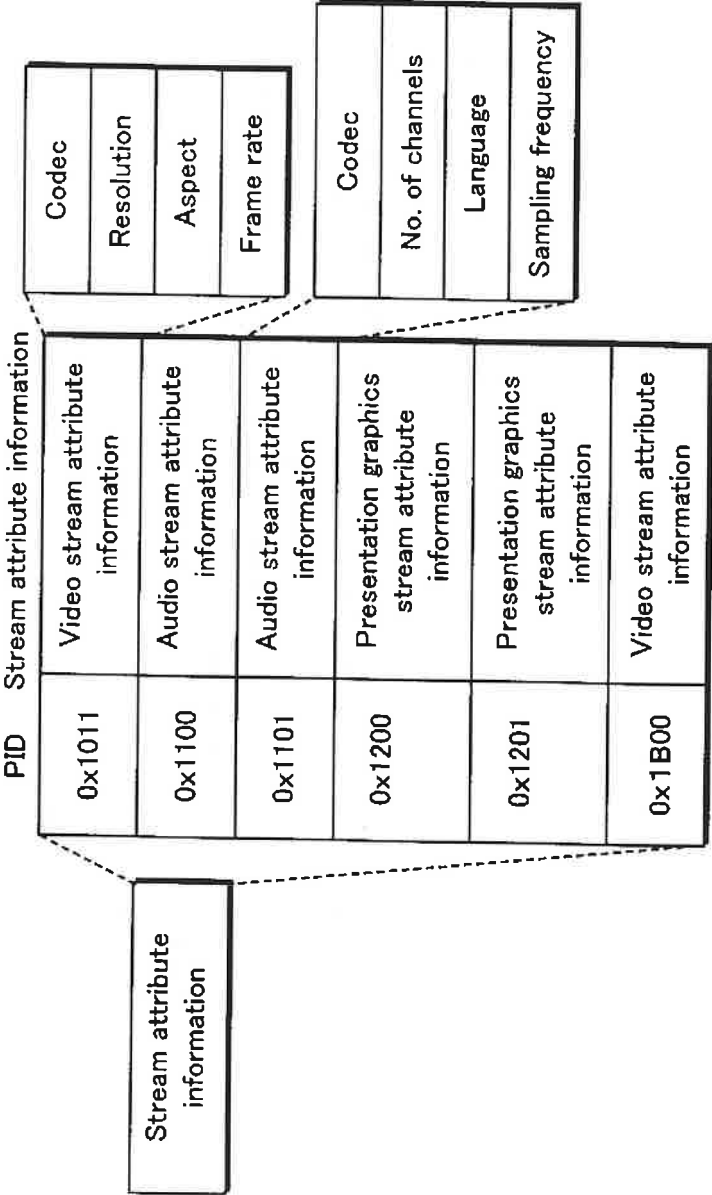


FIG. 45

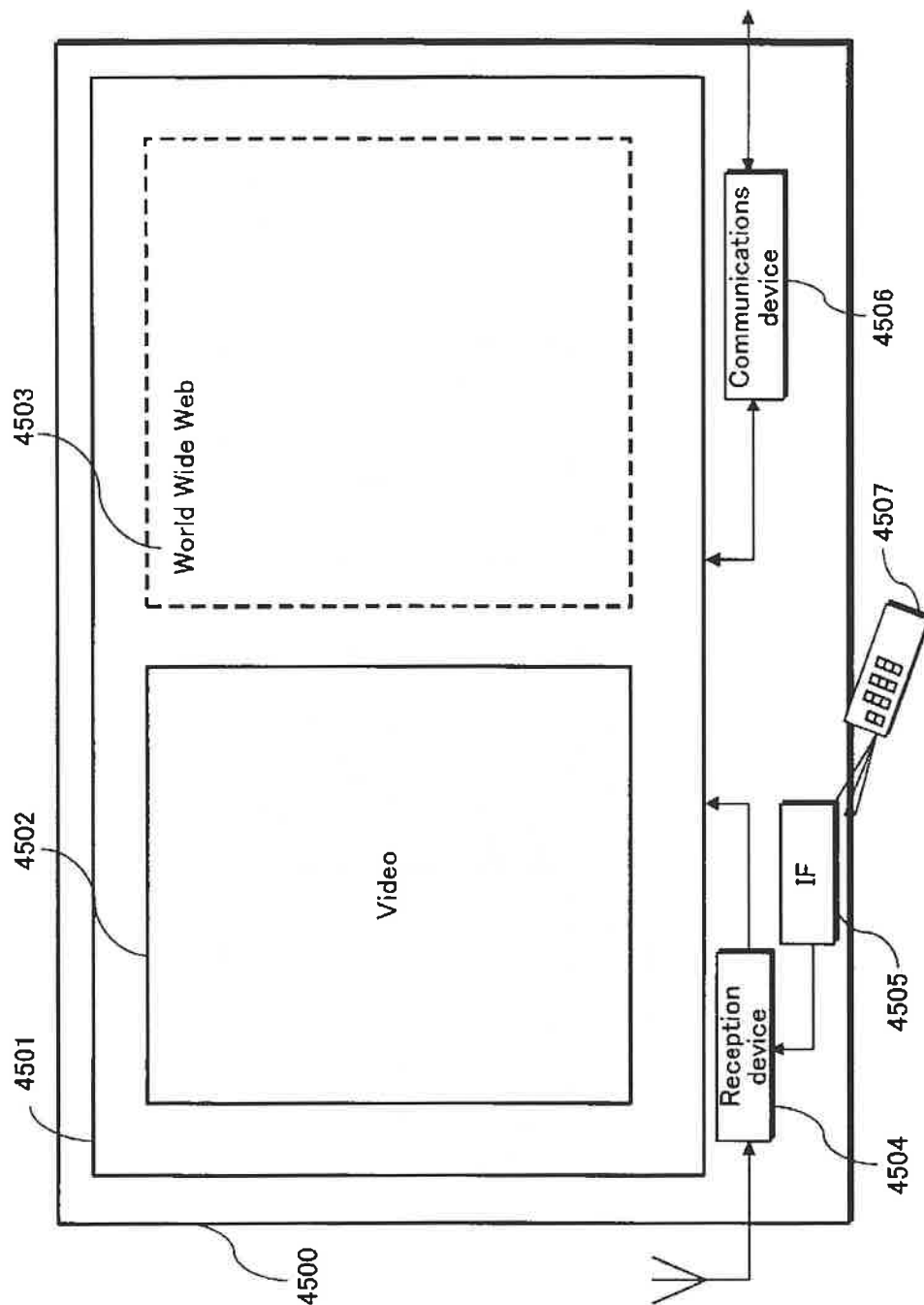


FIG. 46

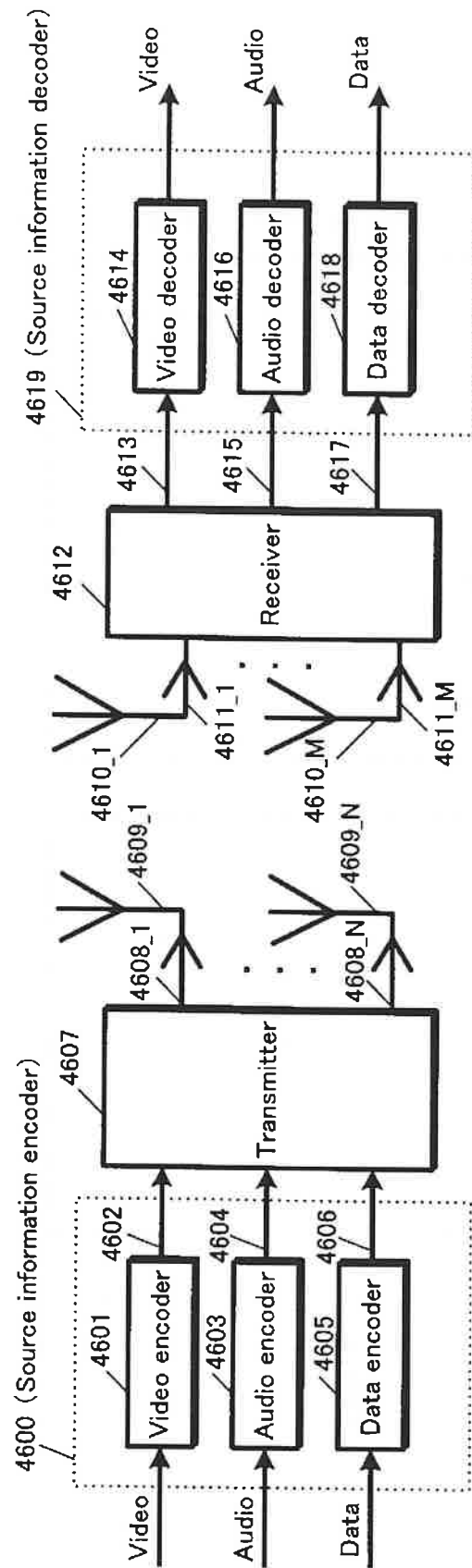


FIG. 47A

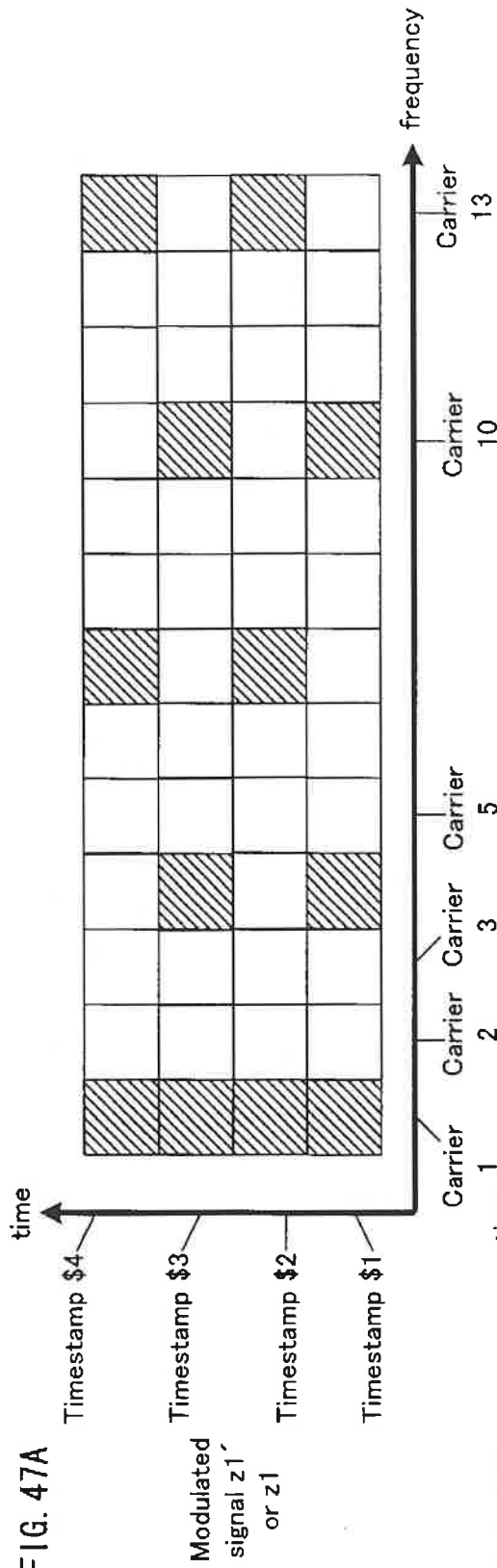


FIG. 47B

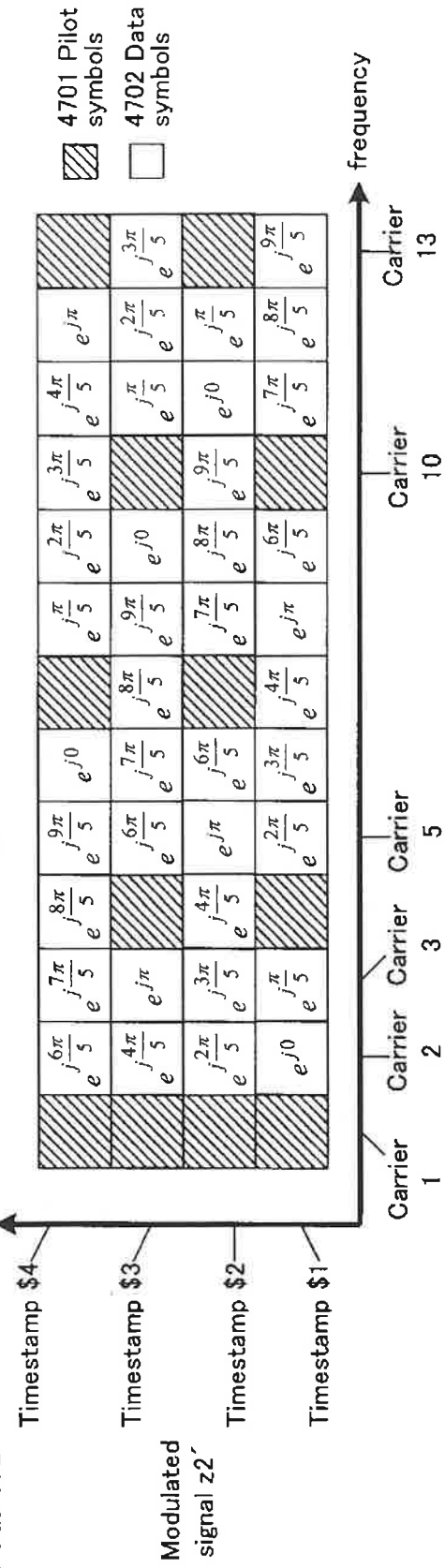


FIG. 48A

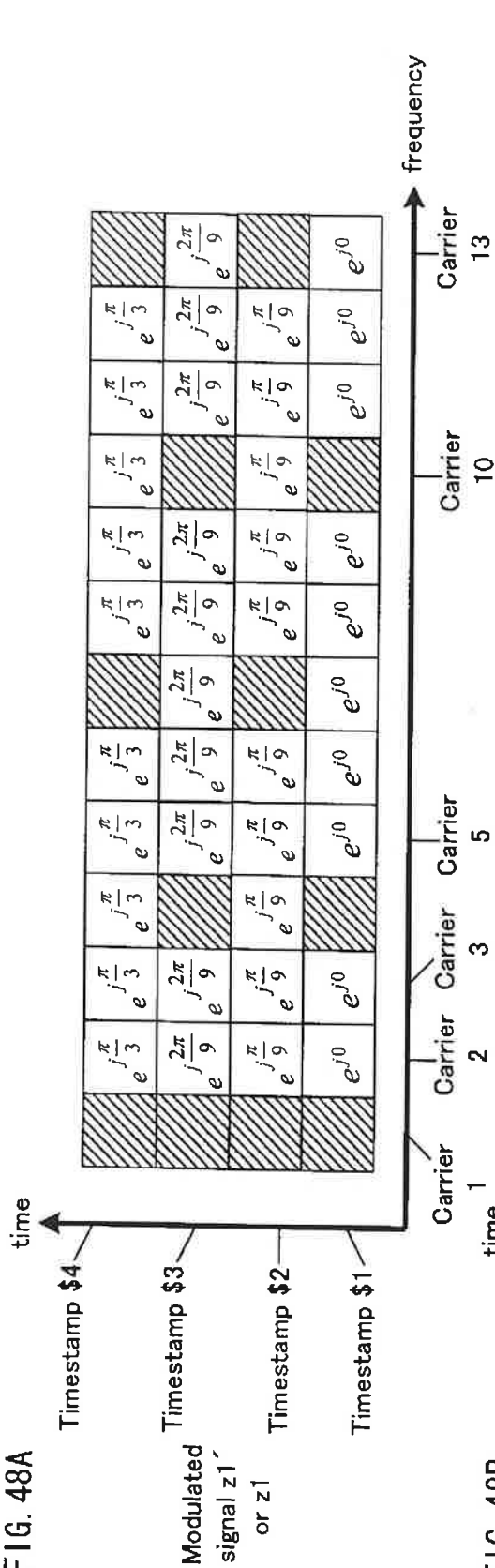
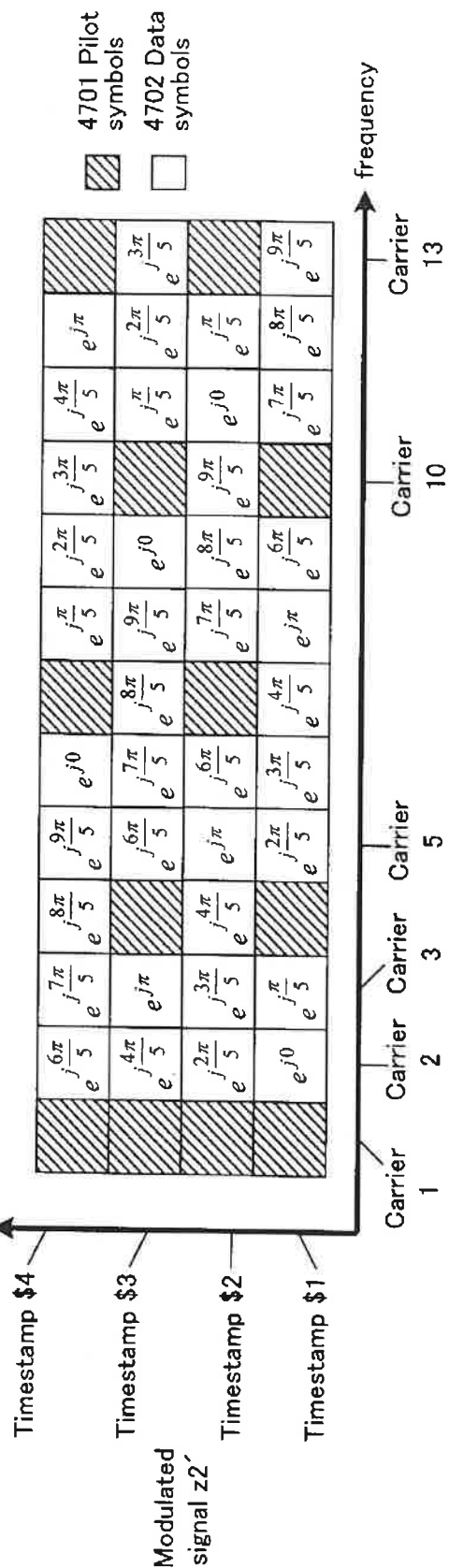


FIG. 48B



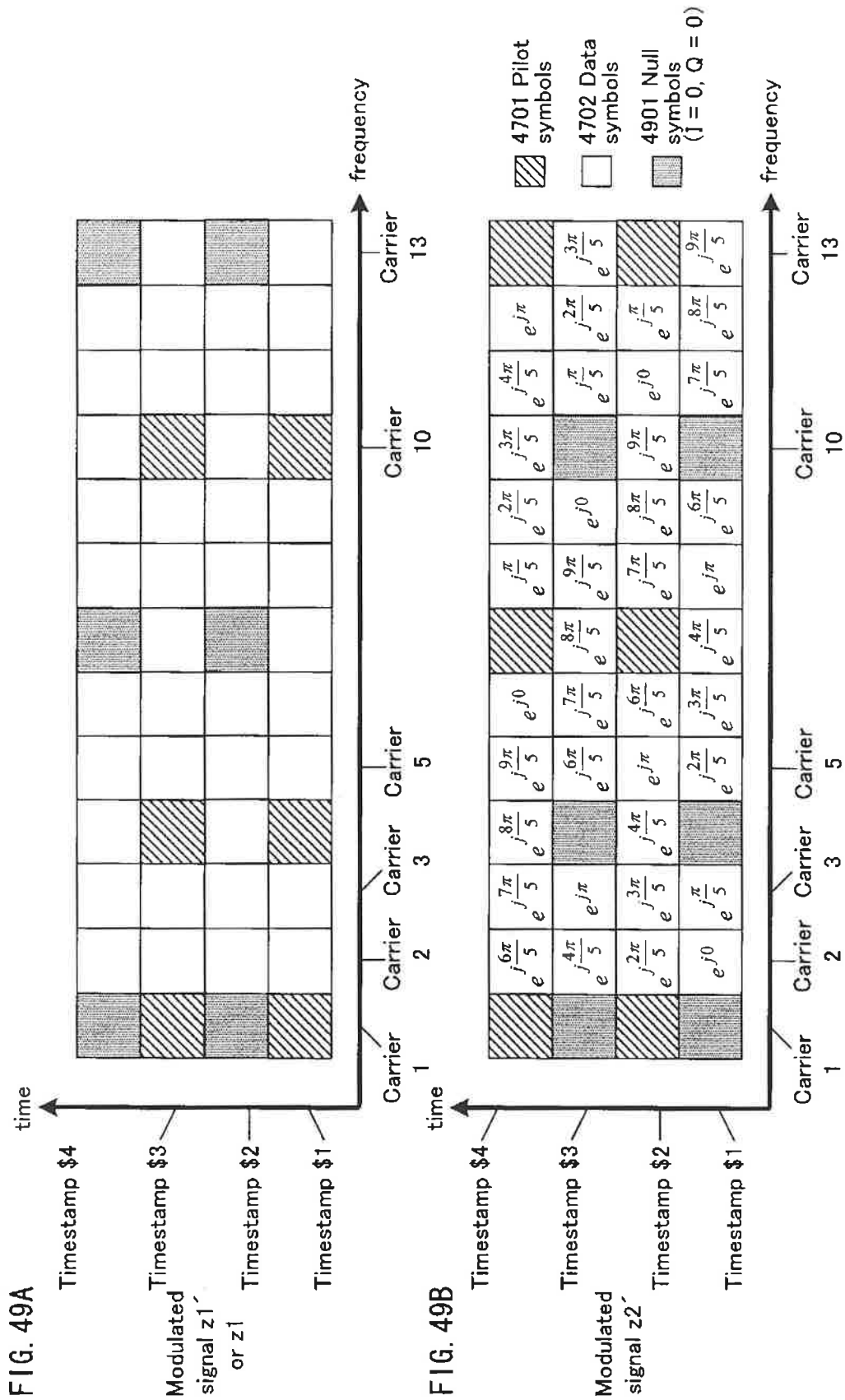


FIG. 50A

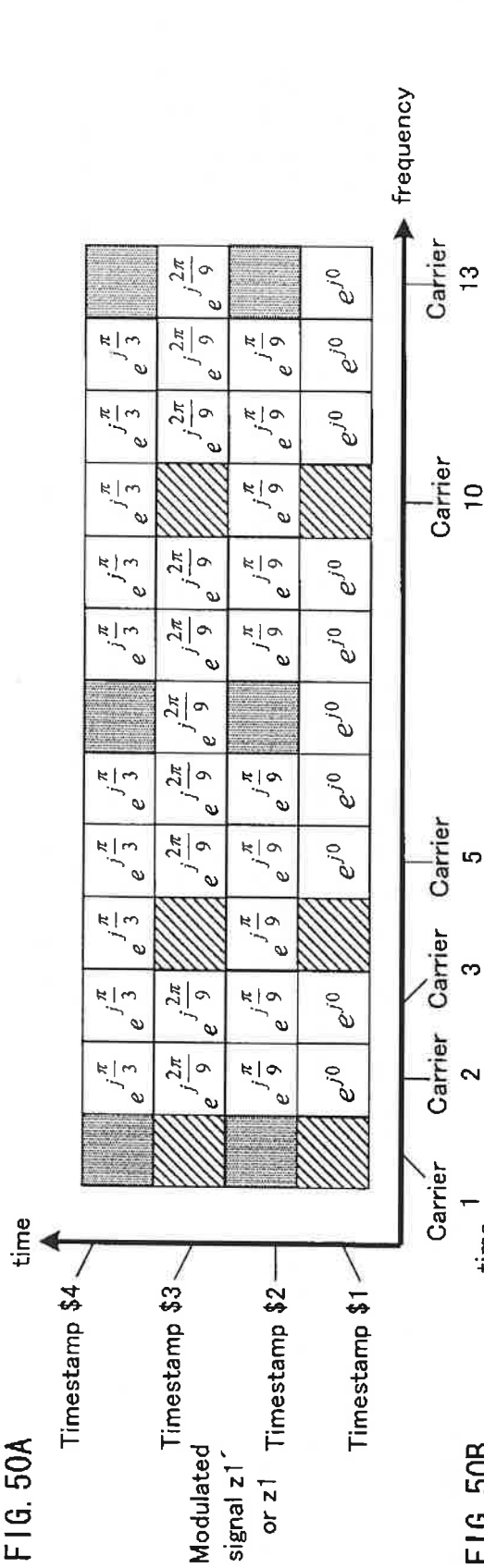


FIG. 50B

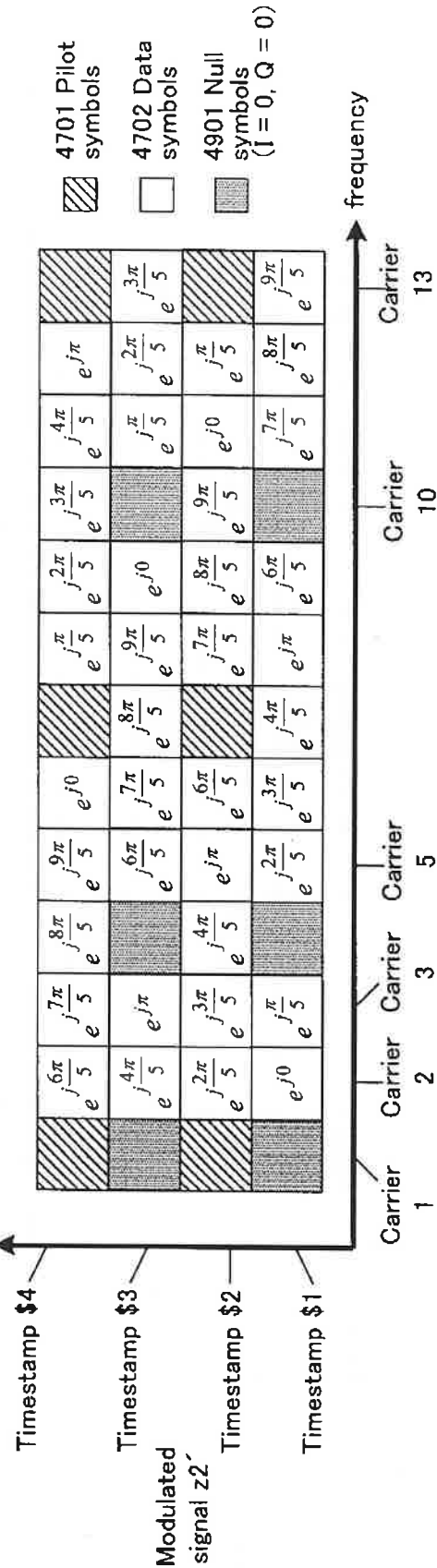


FIG. 51

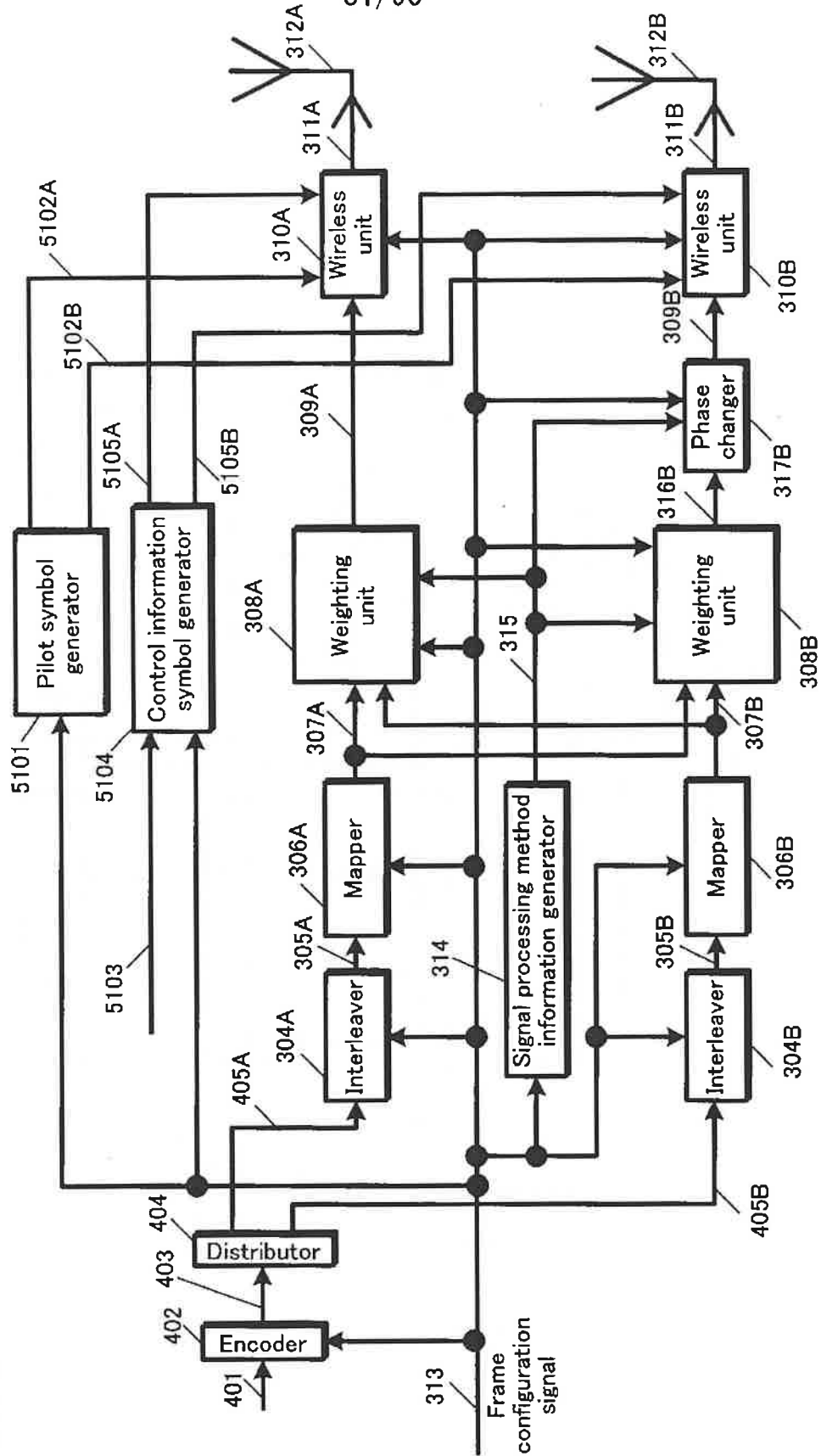


FIG. 52

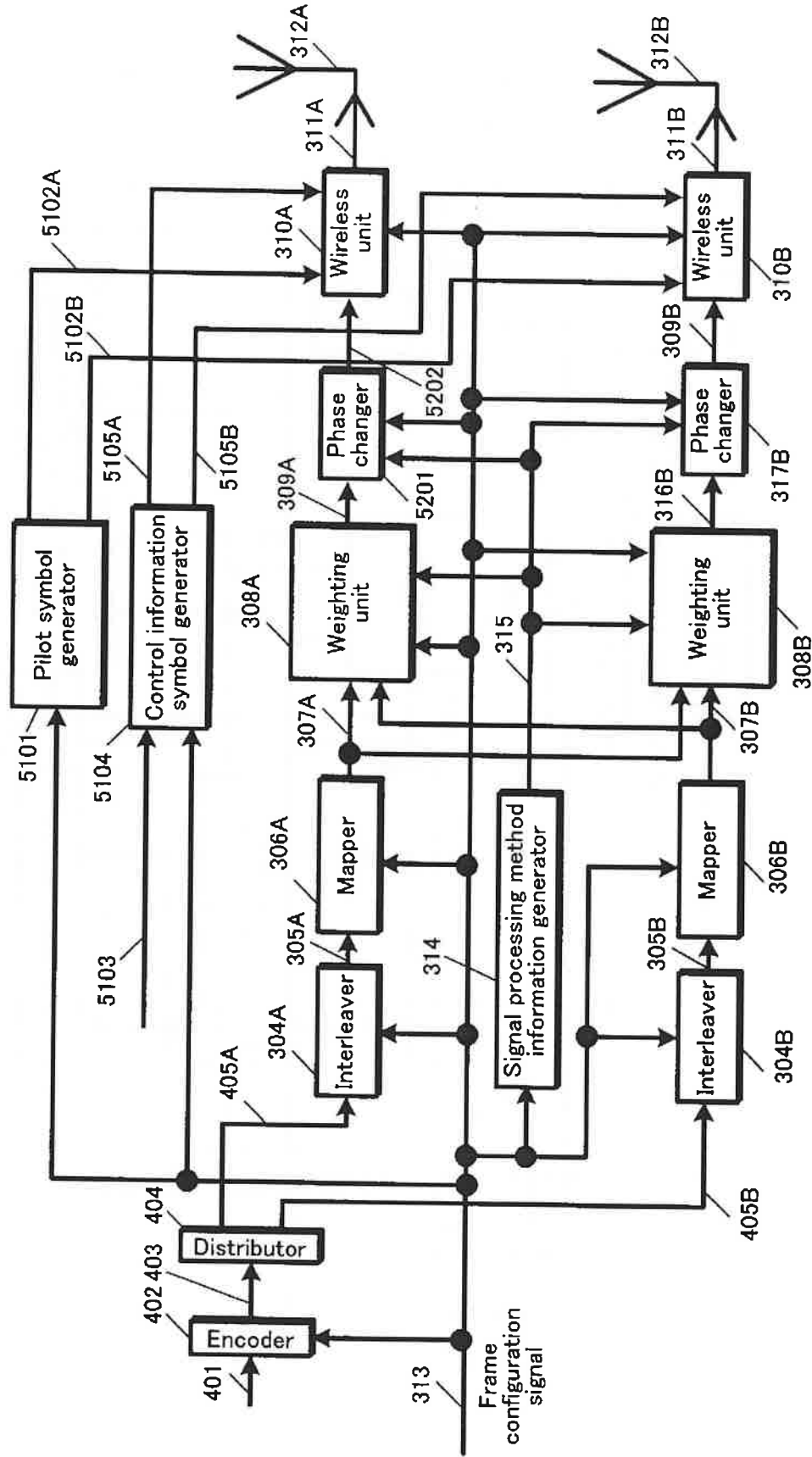


FIG. 53

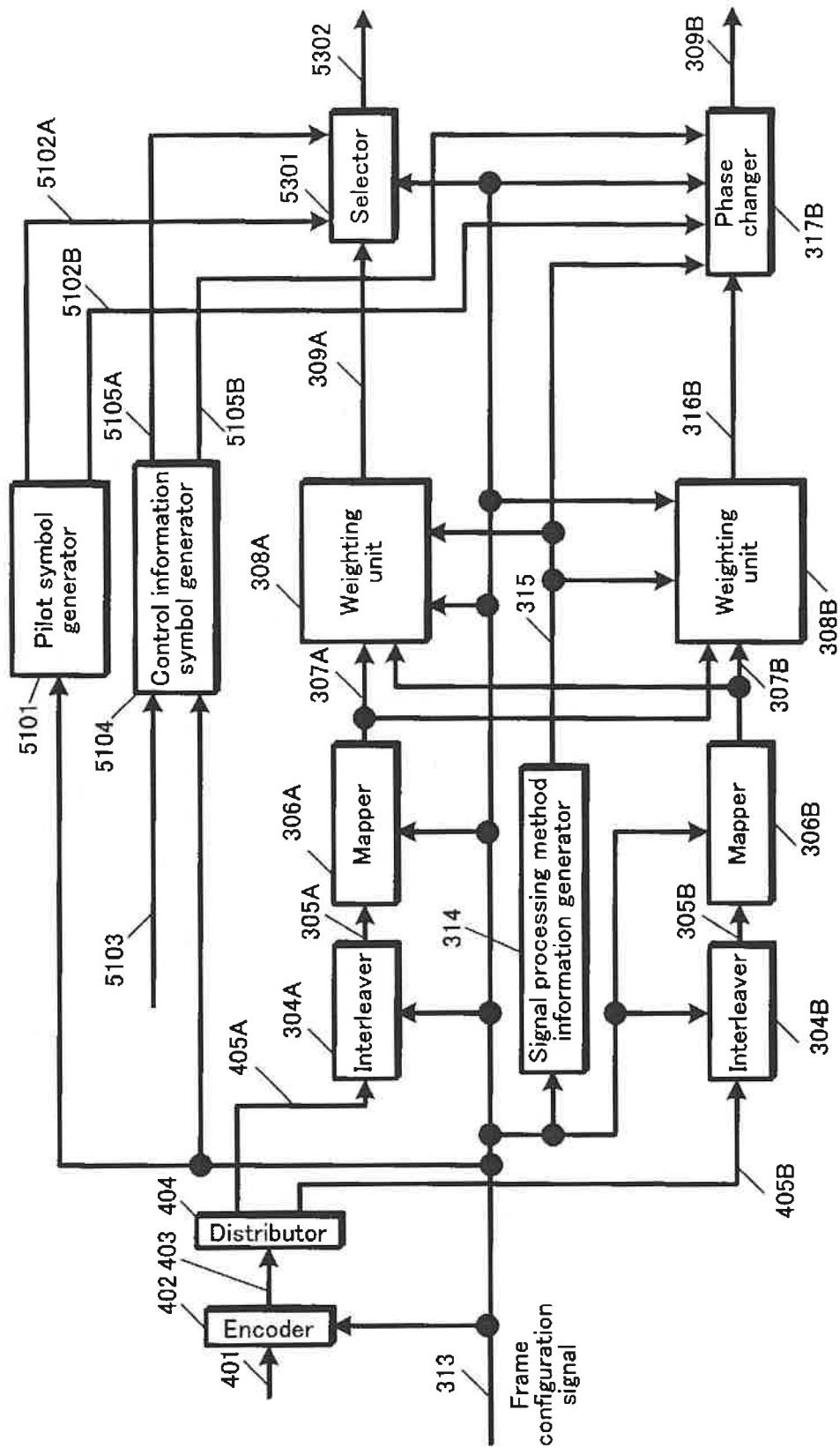


FIG. 54

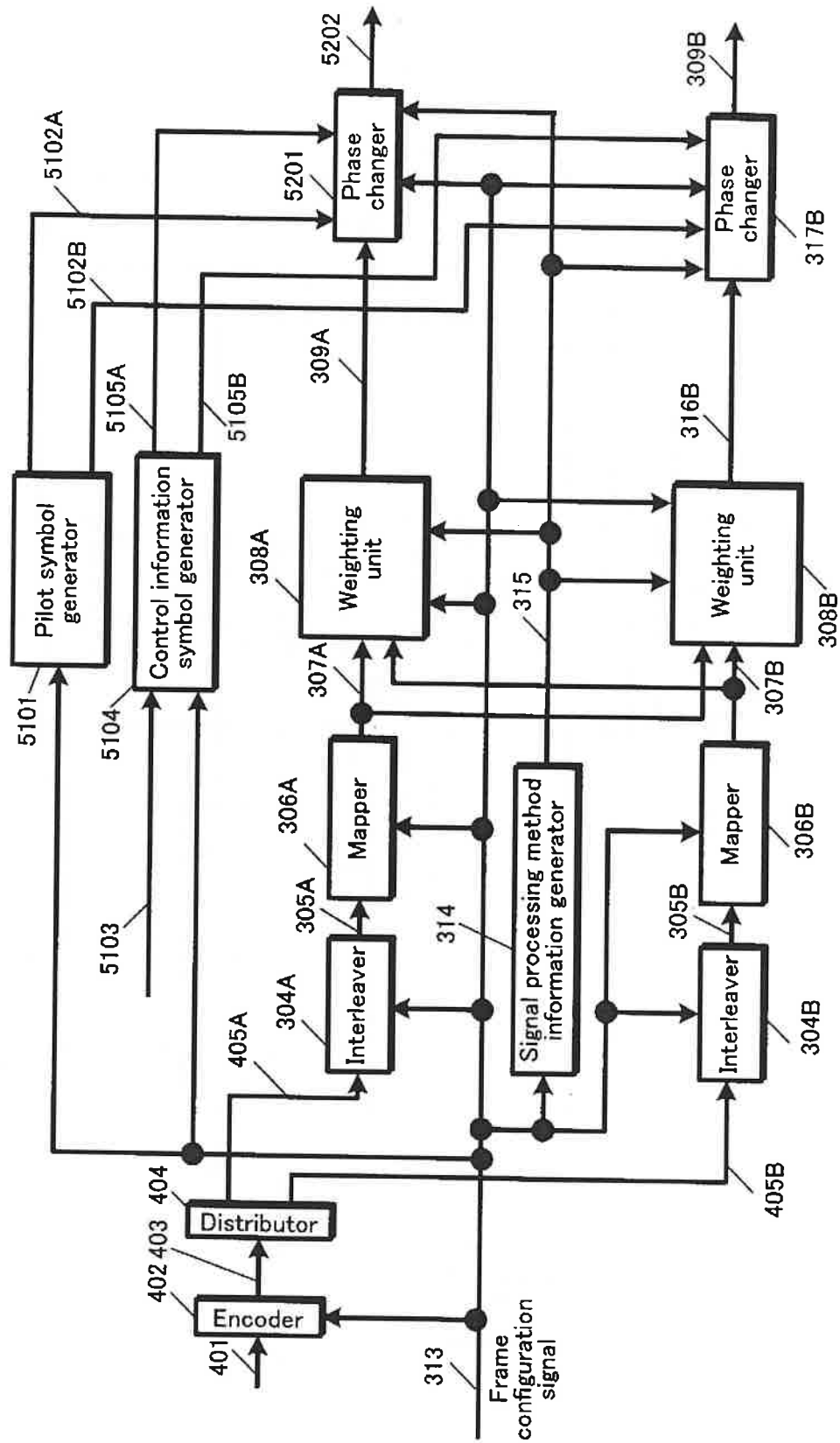


FIG. 55

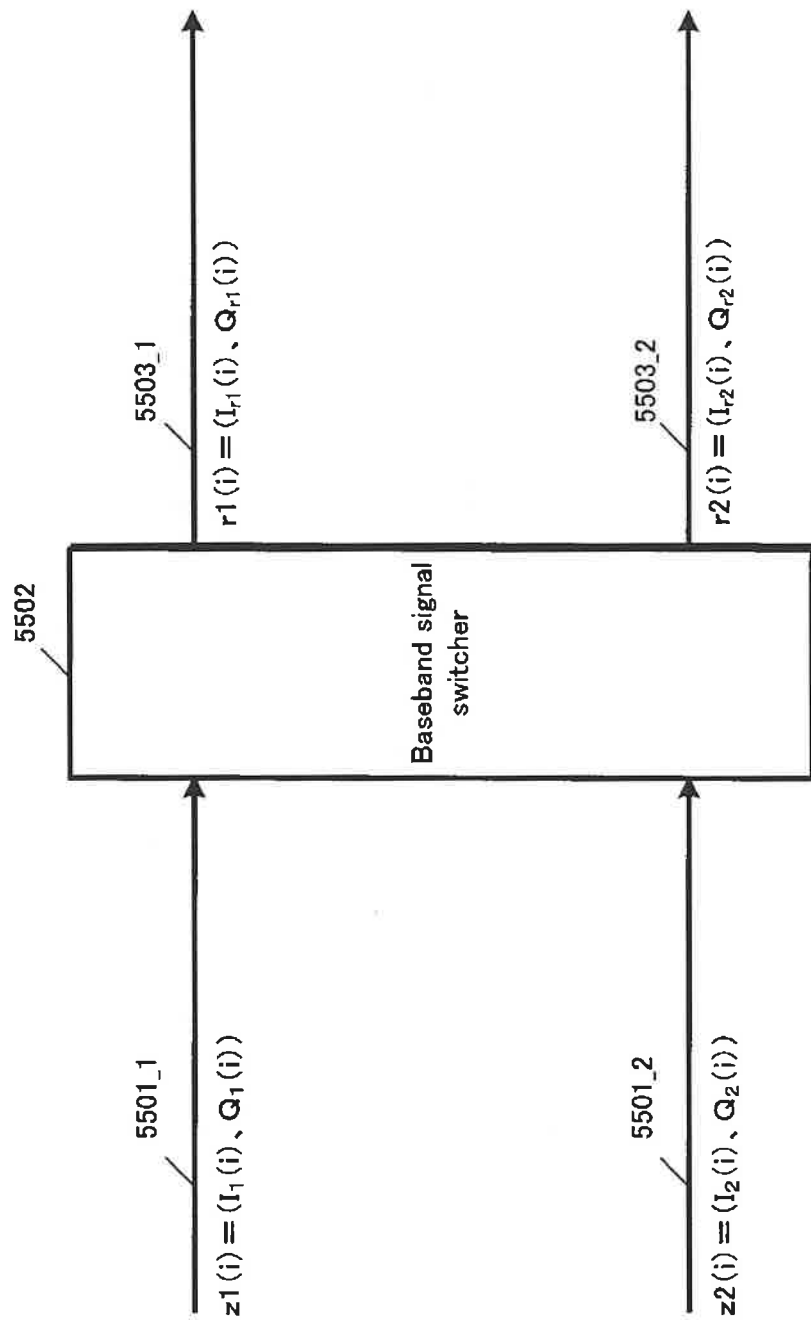


FIG. 56

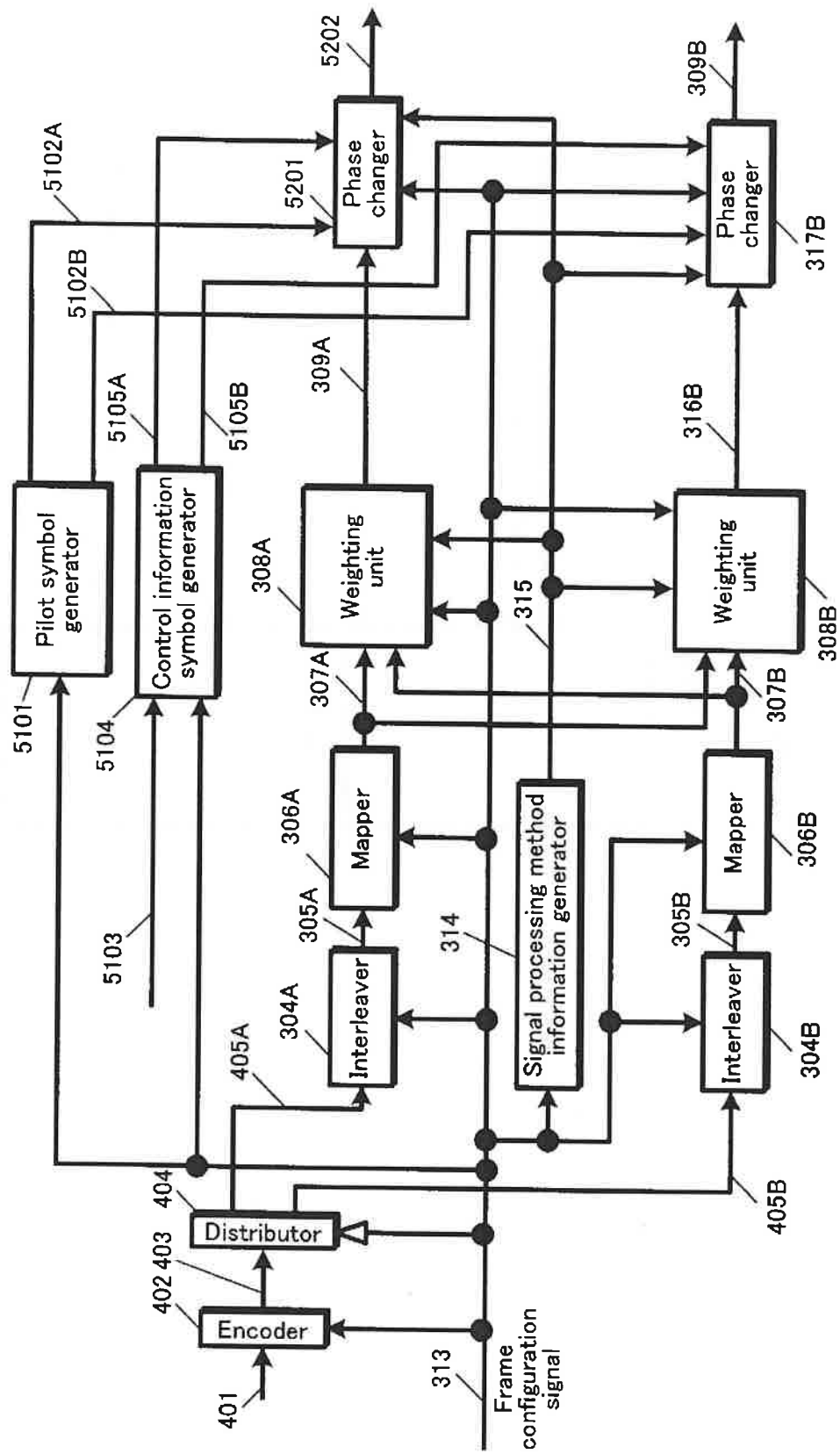


FIG. 57

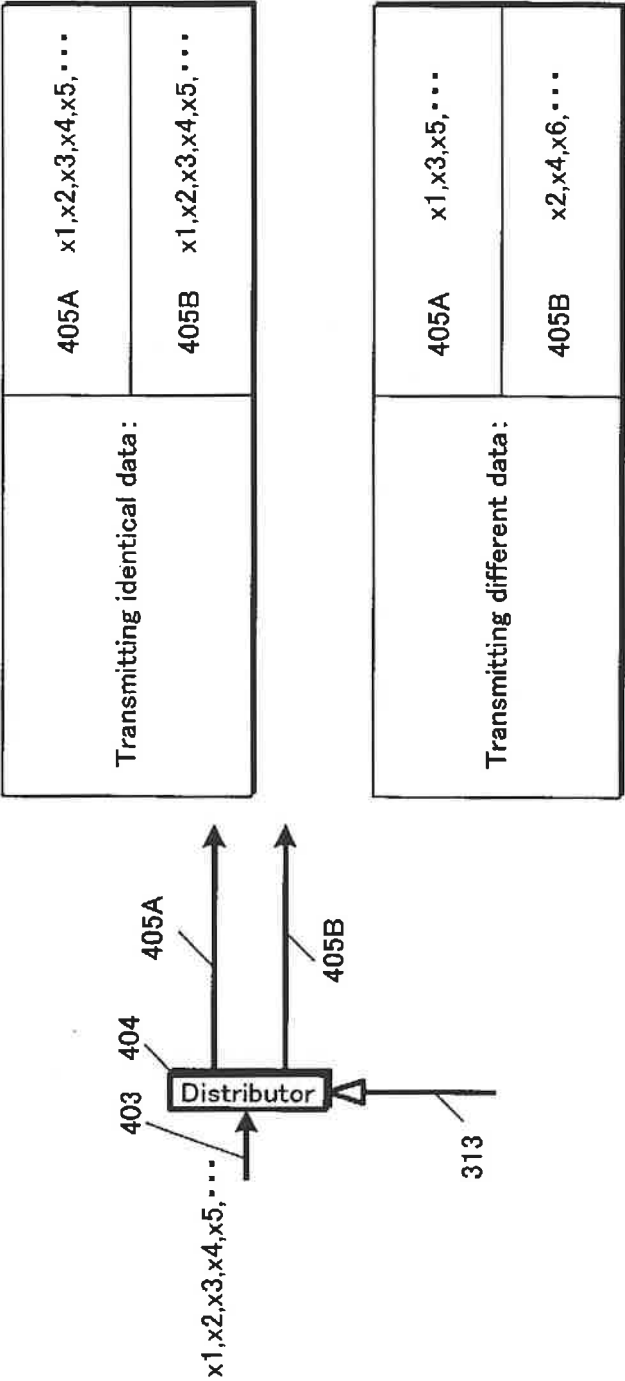


FIG. 58

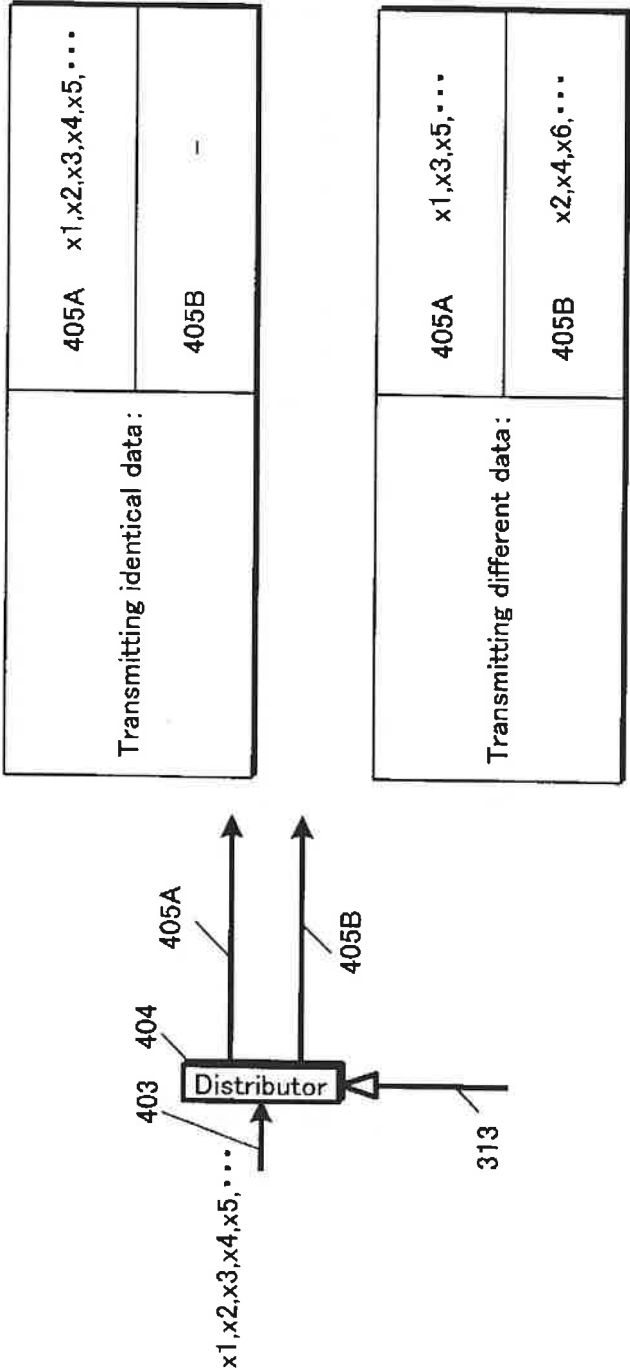


FIG. 59

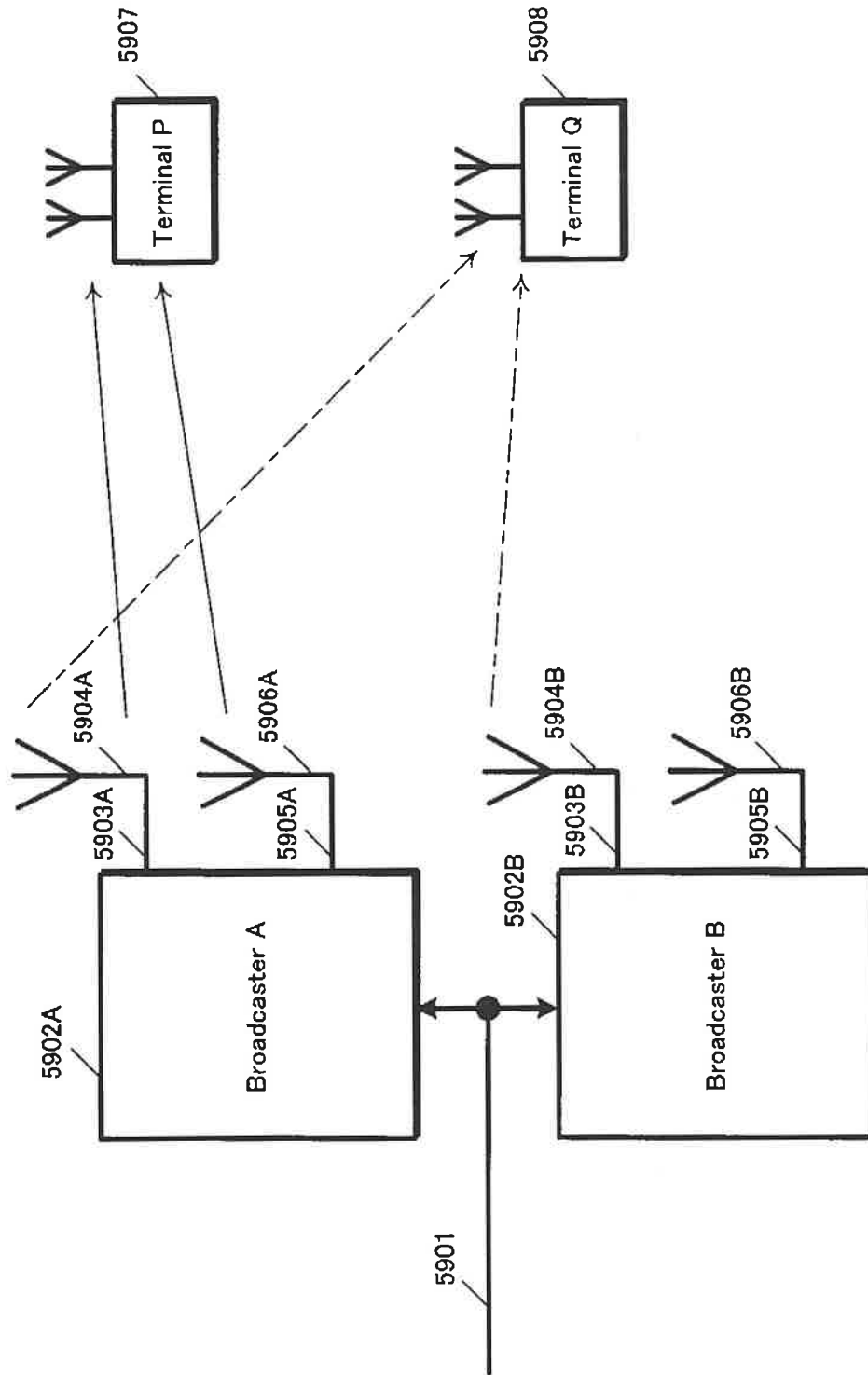


FIG. 60

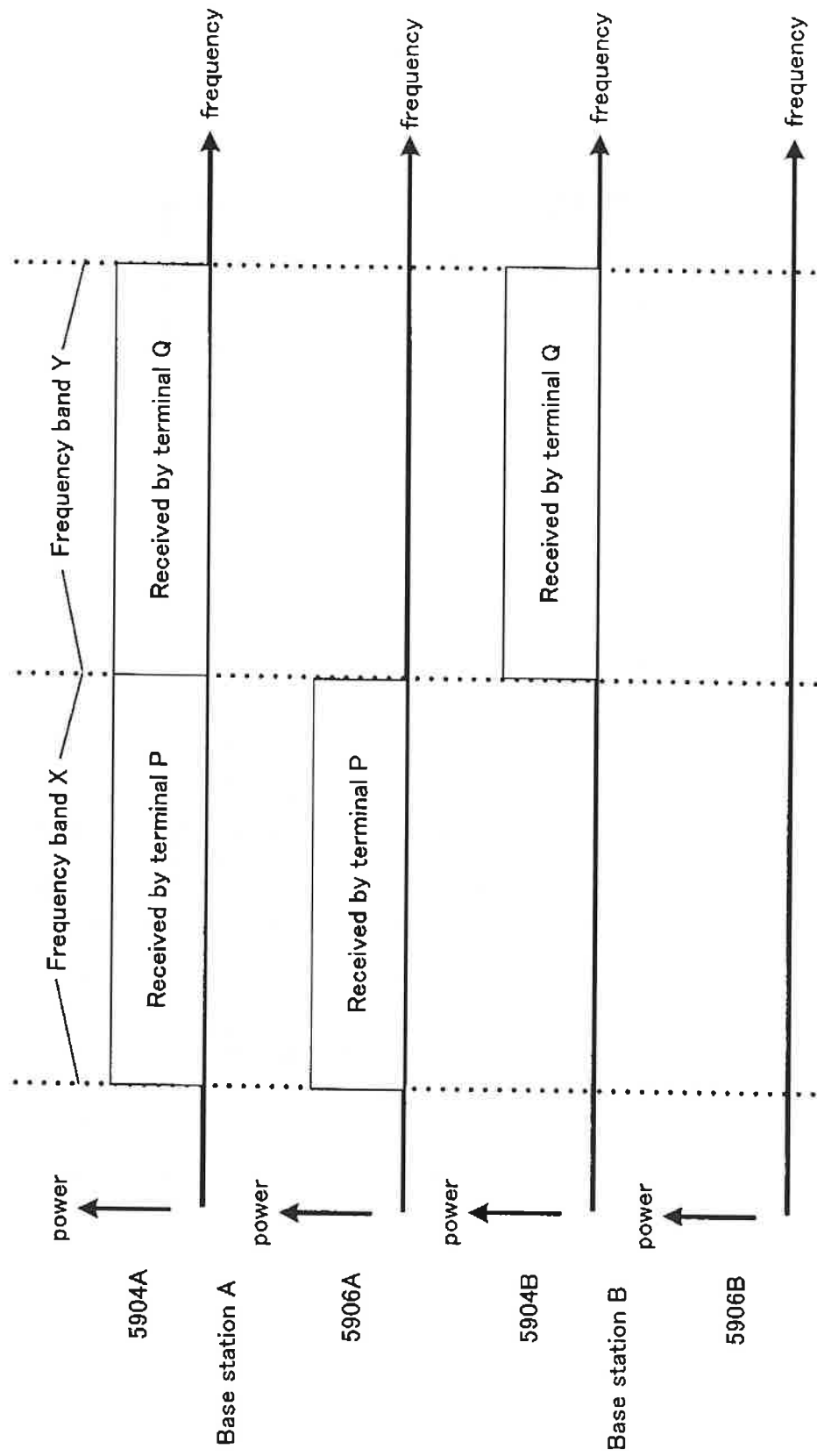
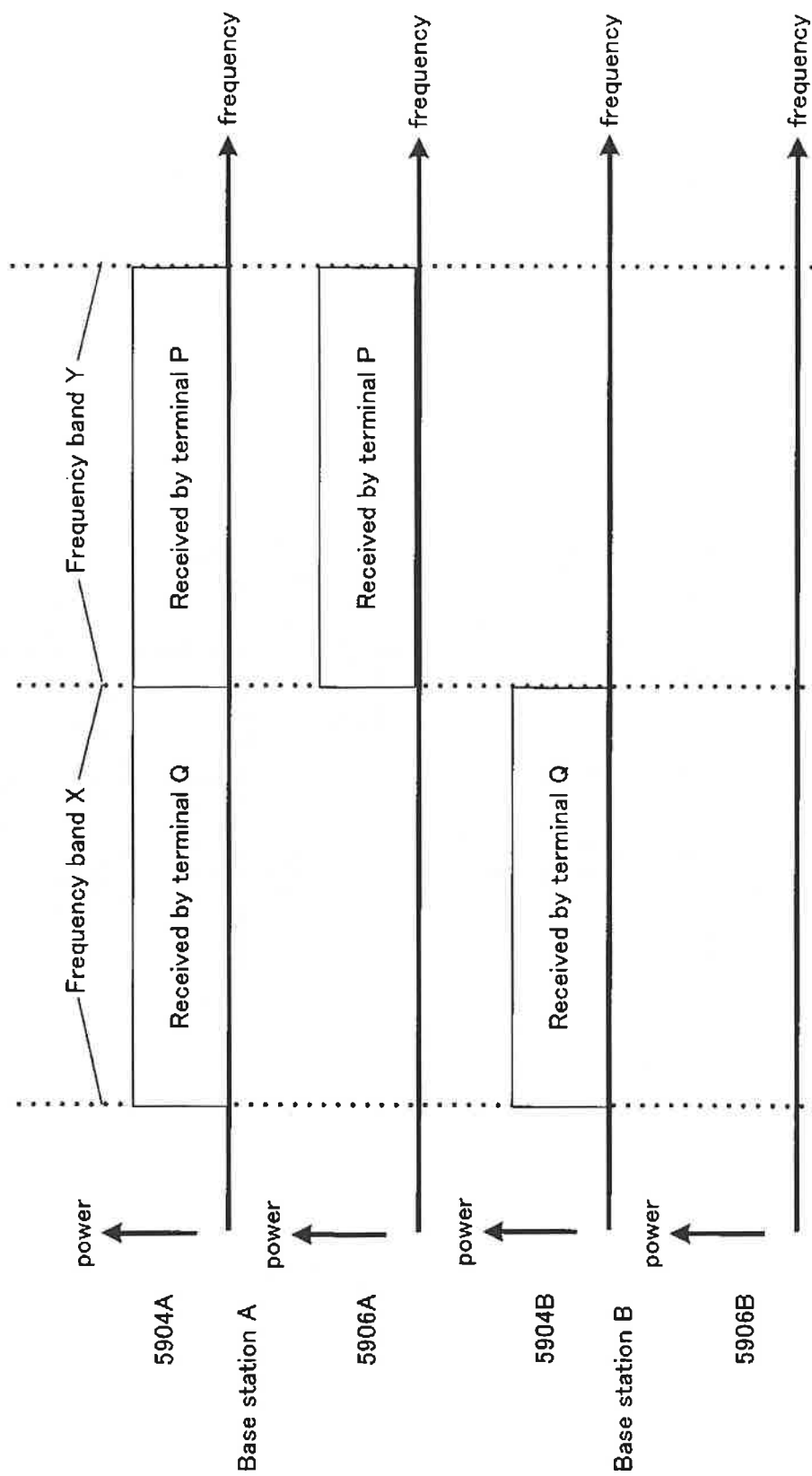


FIG. 61



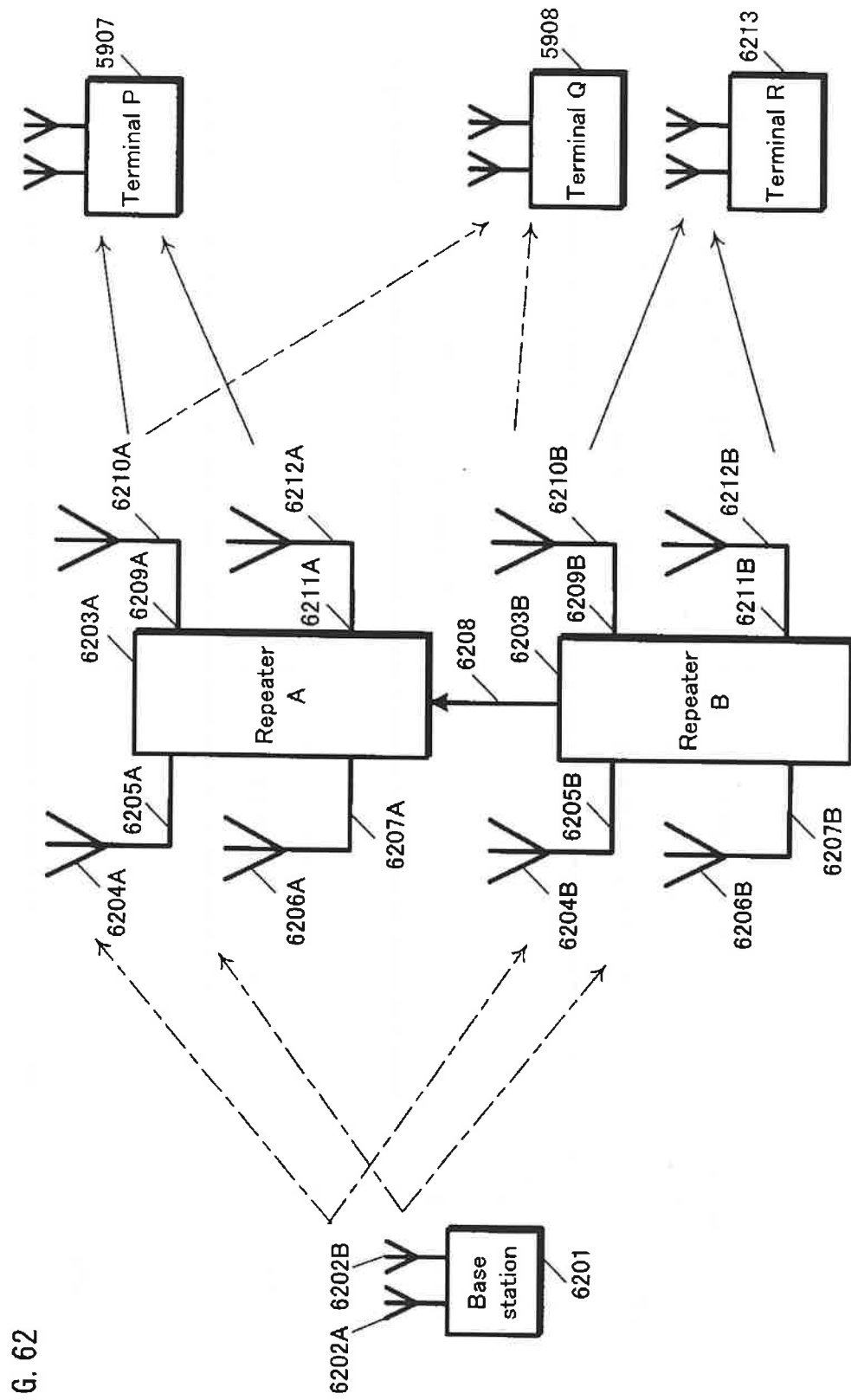


FIG. 63

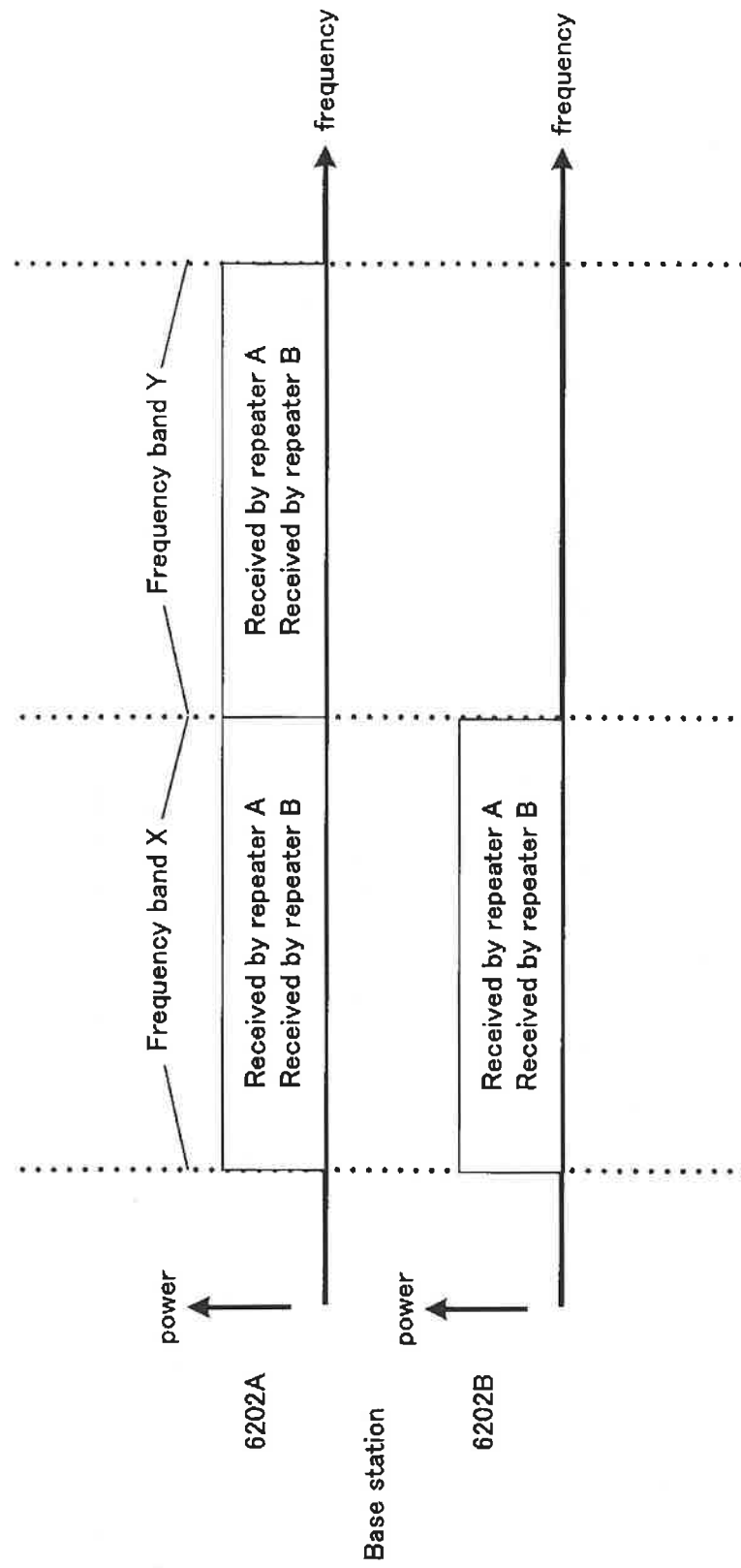


FIG. 64

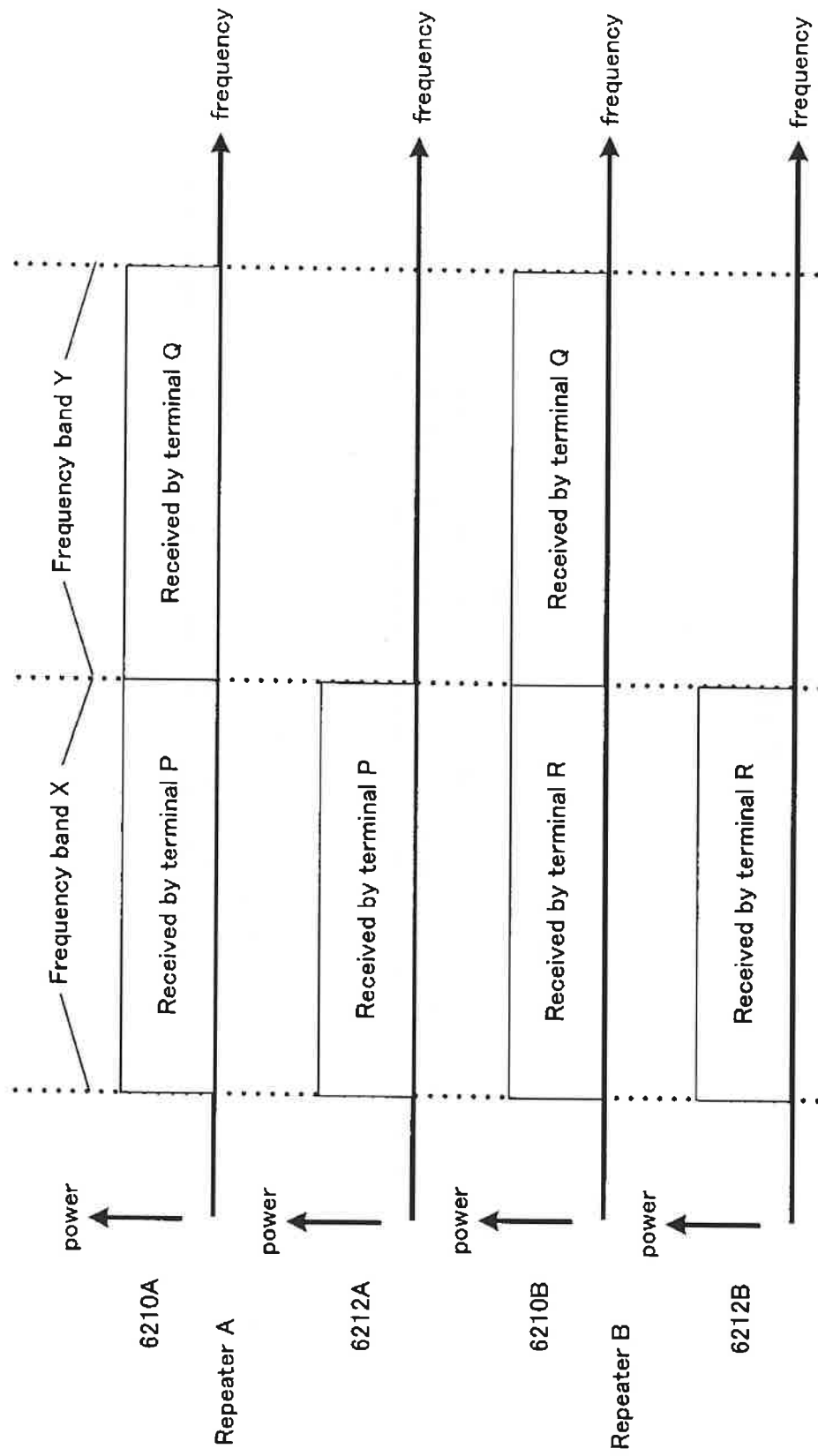


FIG. 65

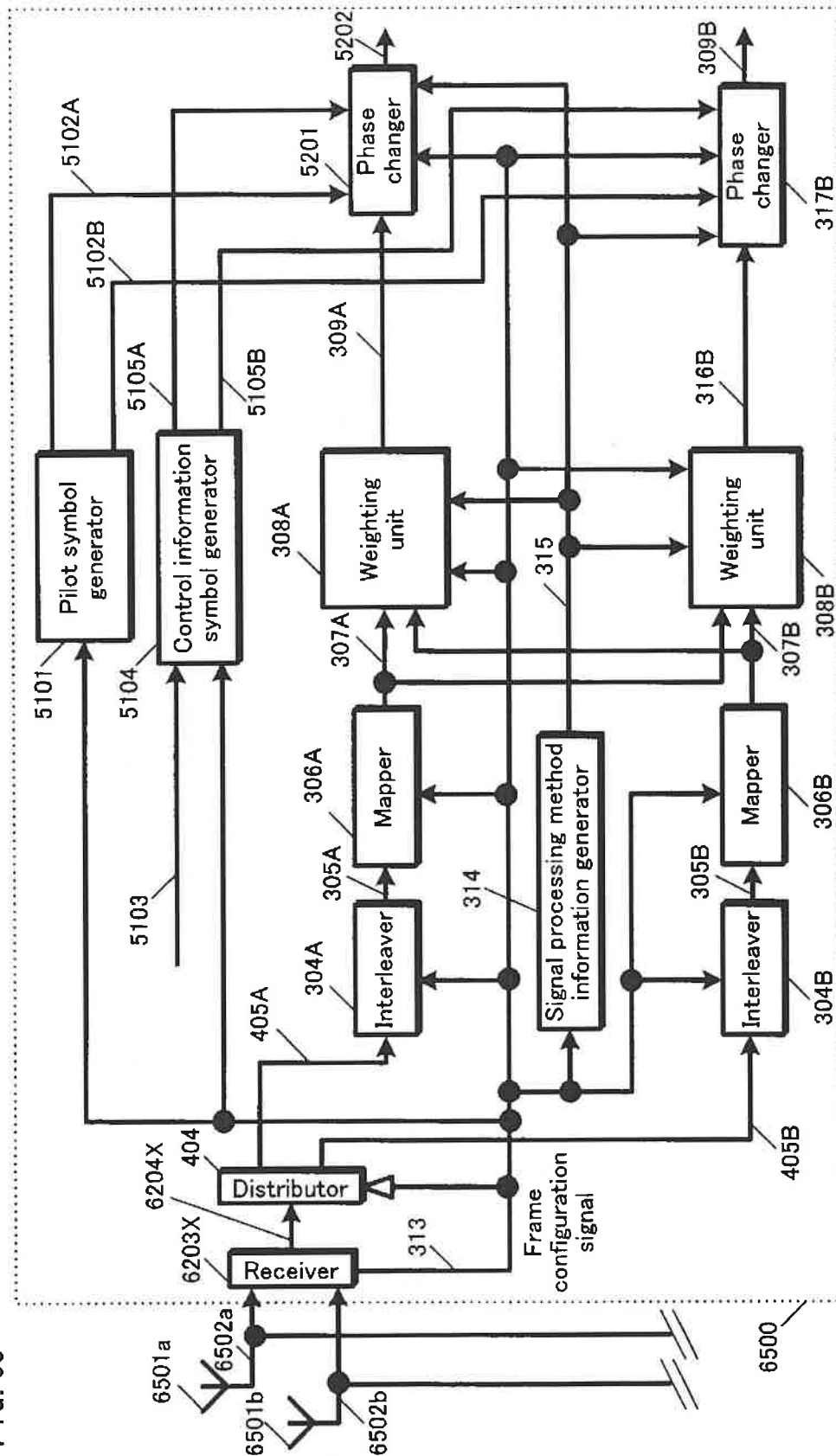


FIG. 66

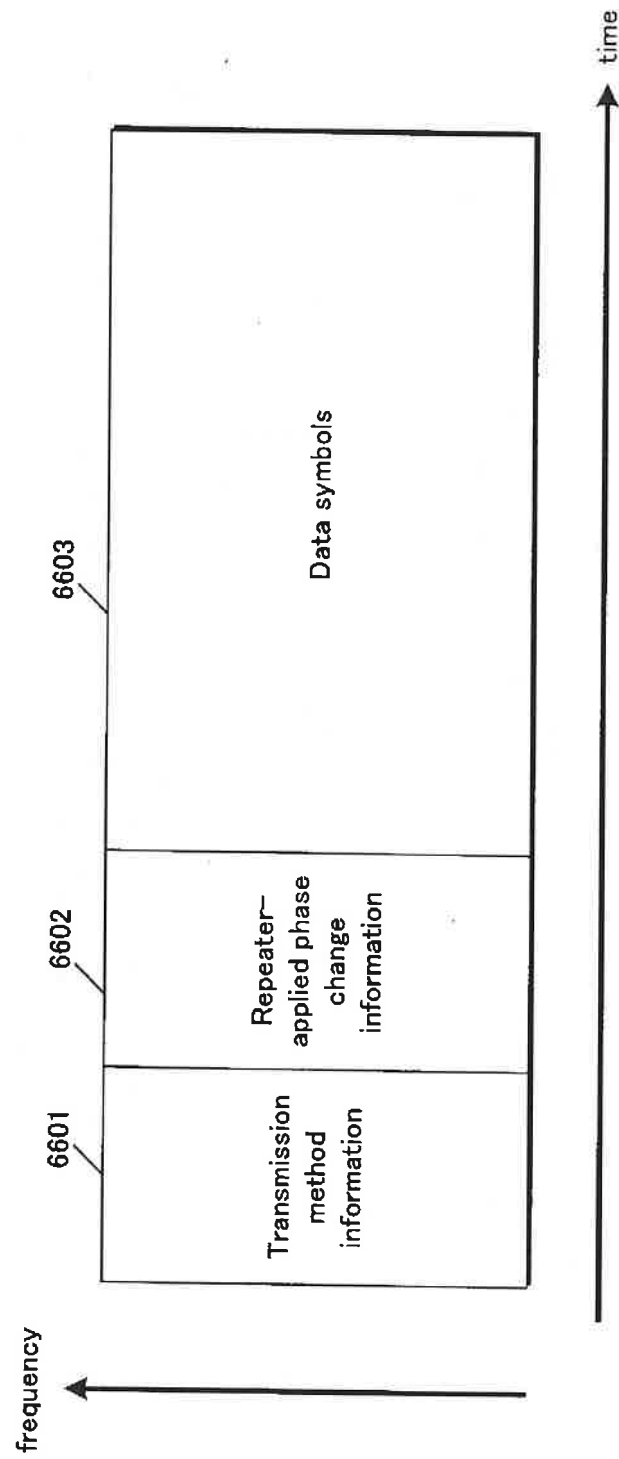


FIG. 67

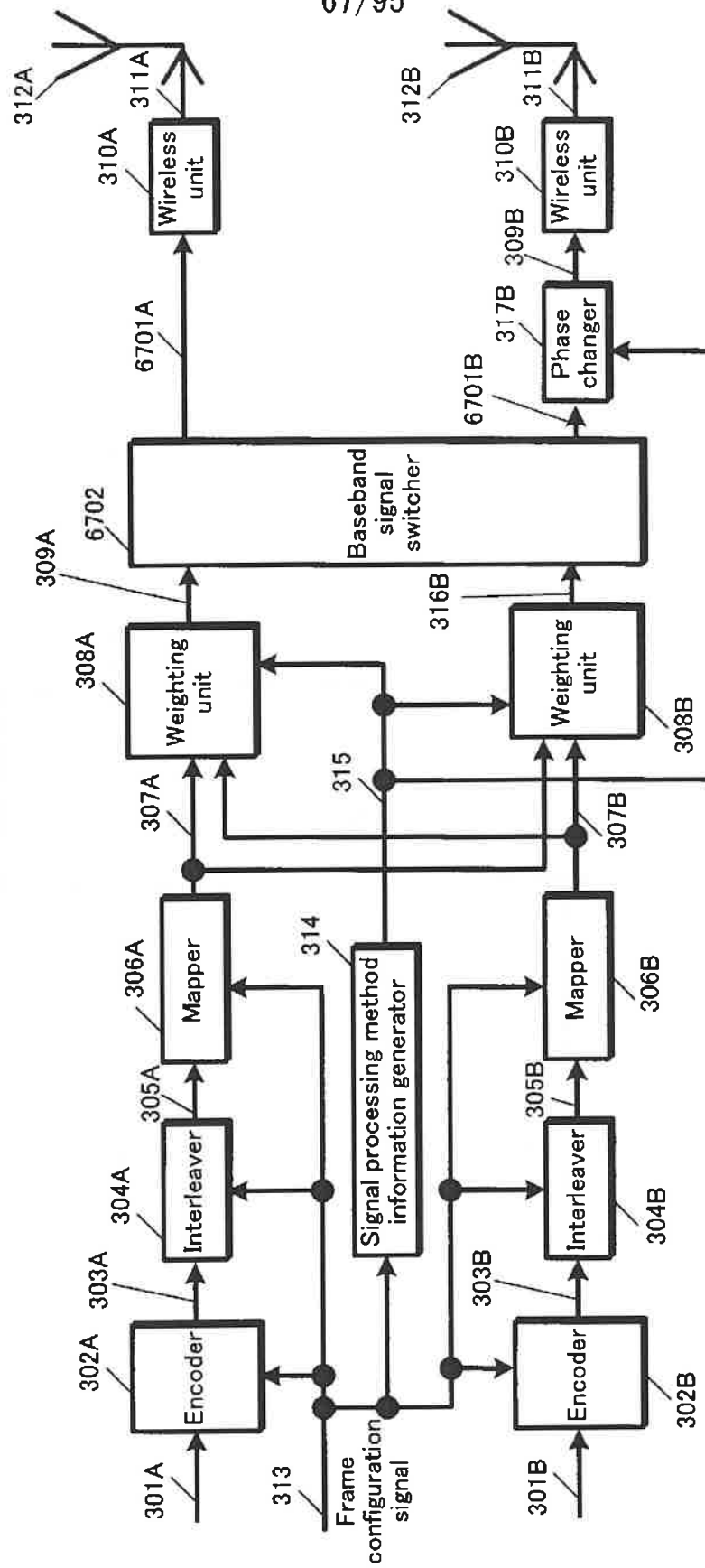


FIG. 68

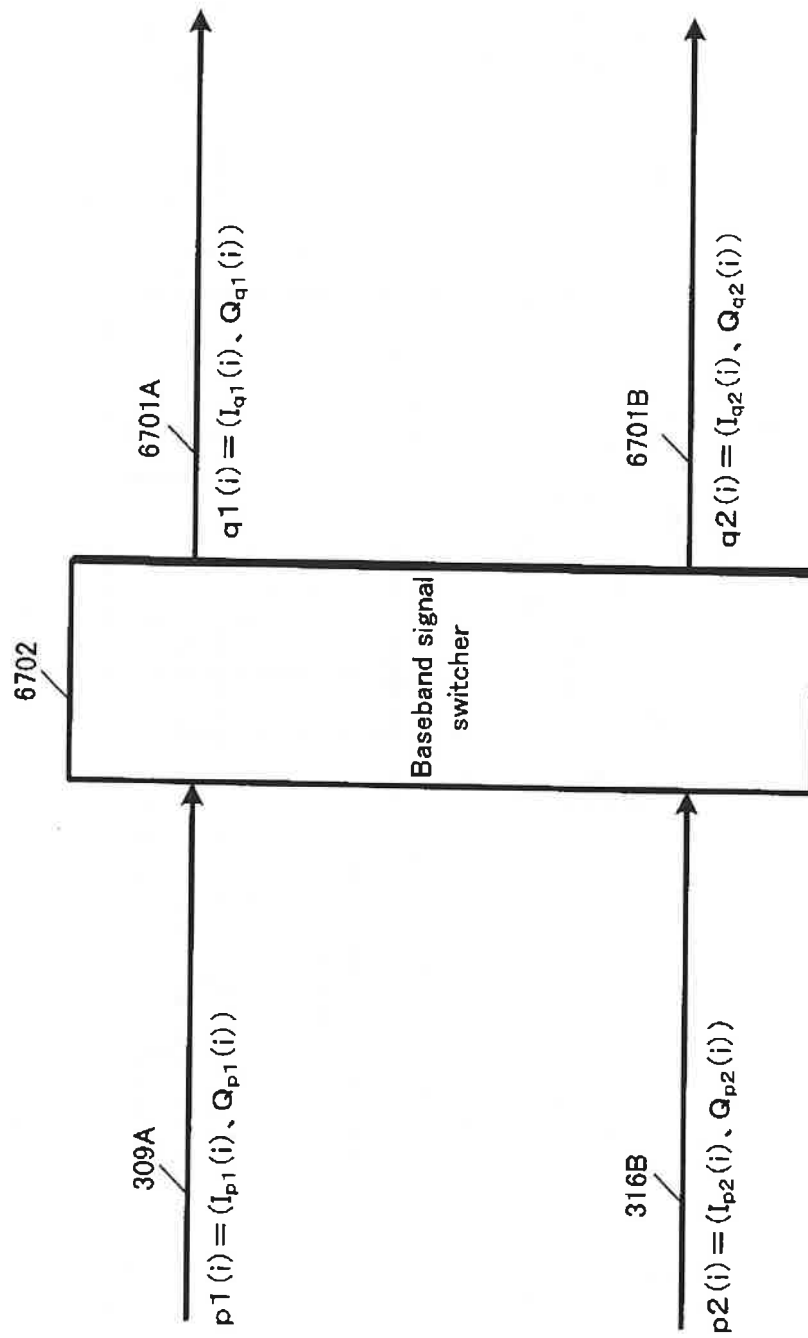
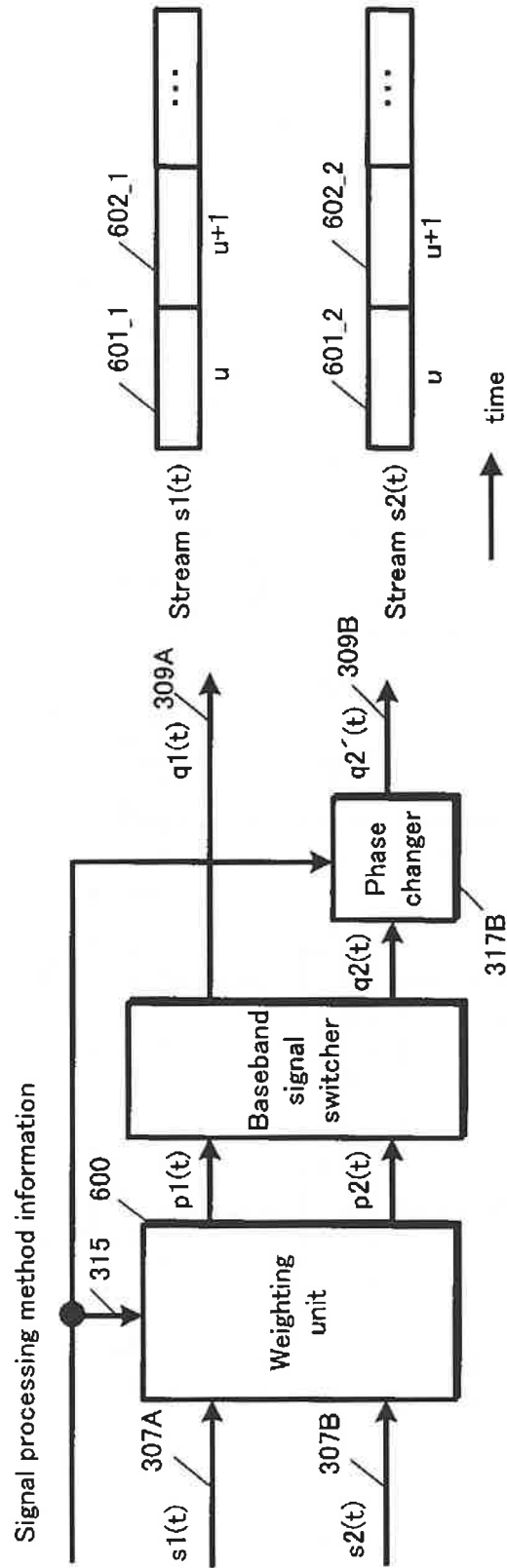


FIG. 69



Sample variations of phase changing formula $y(t)$ used by phase changer

timestamp u	timestamp $u+1$	timestamp $u+2$	timestamp $u+3$	timestamp $u+k$
$y(u) = e^{j0}$	$y(u+1) = e^{j\frac{\pi}{2}}$	$y(u+2) = e^{j\pi}$	$y(u+3) = e^{j\frac{3\pi}{2}}$	$y(u+k) = e^{j\frac{k\pi}{2}}$
			...	...

FIG. 70

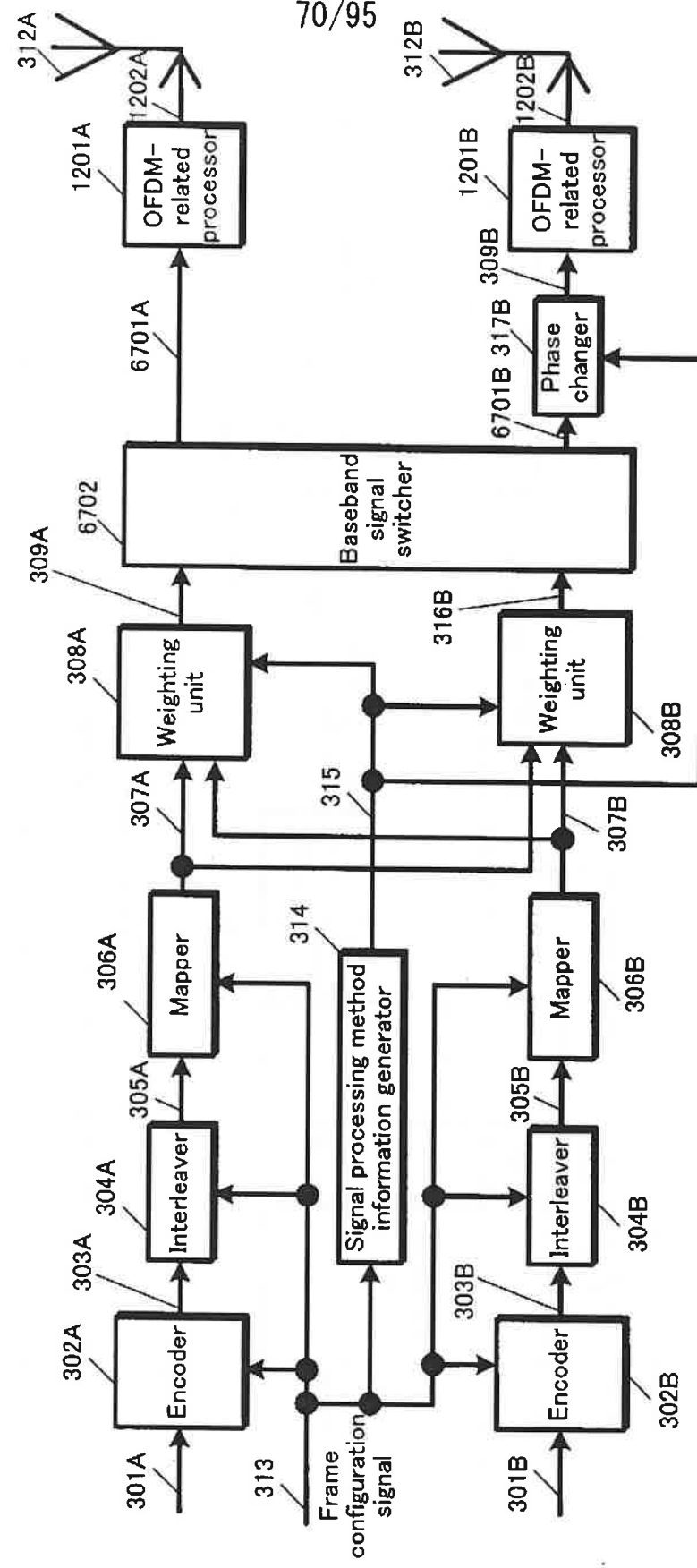


FIG. 71A

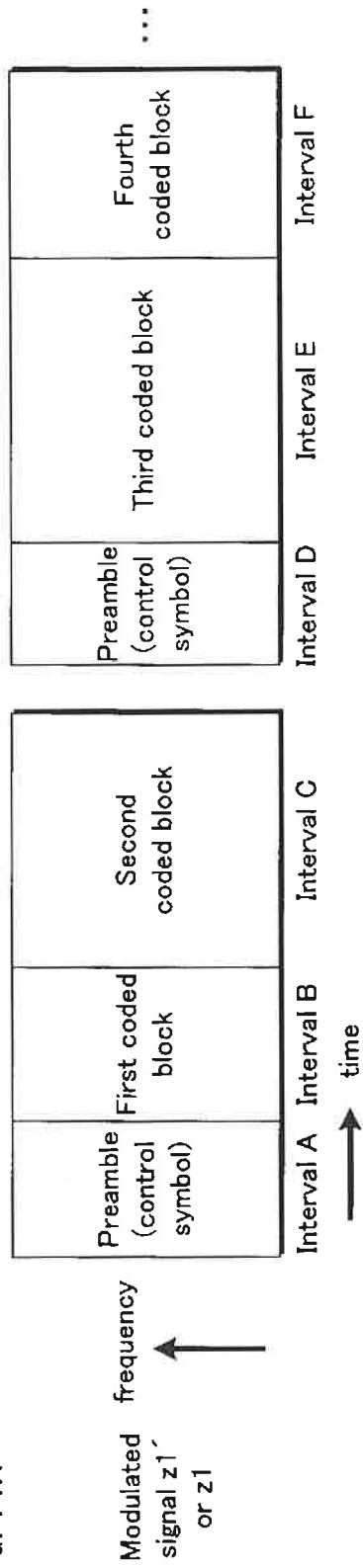


FIG. 71B

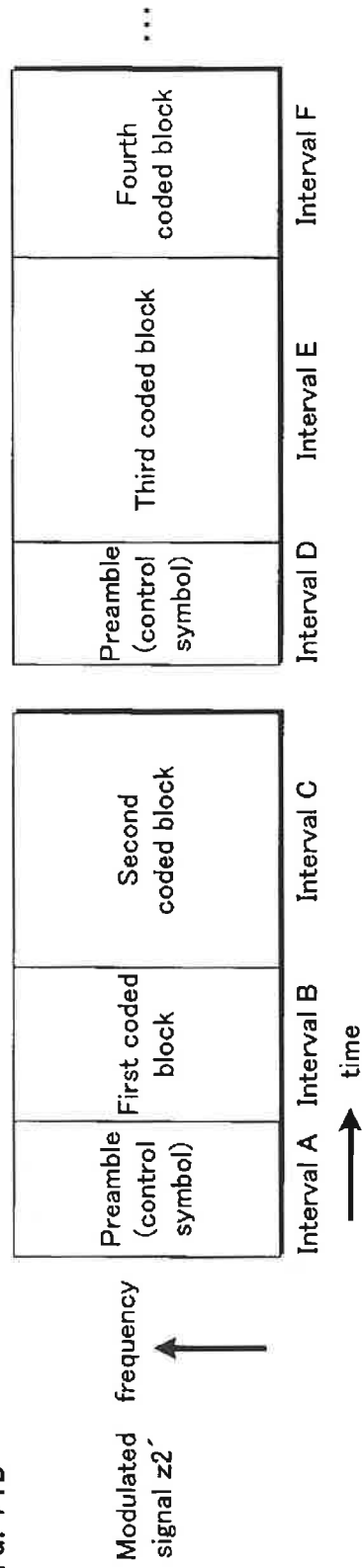


FIG. 72

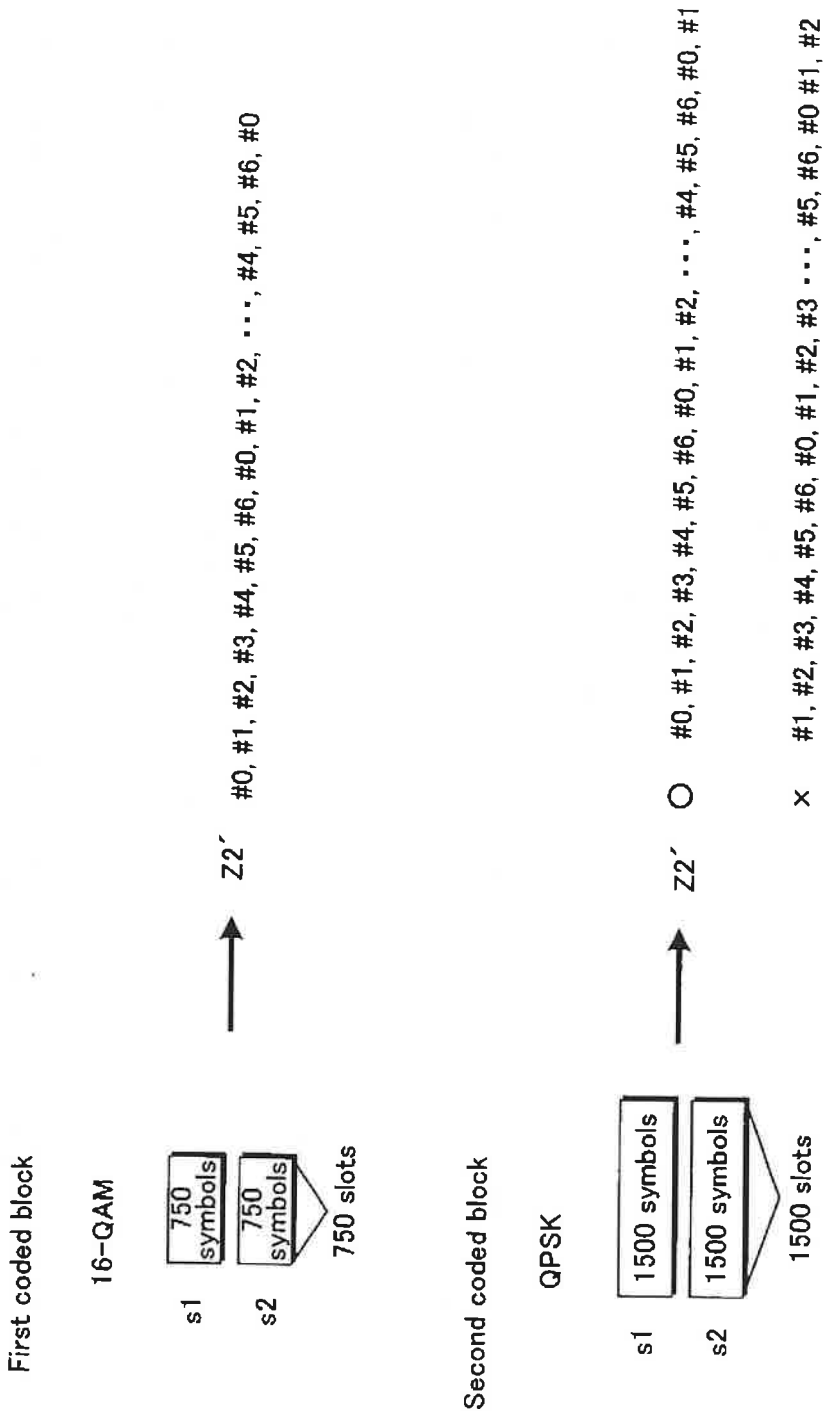


FIG. 73

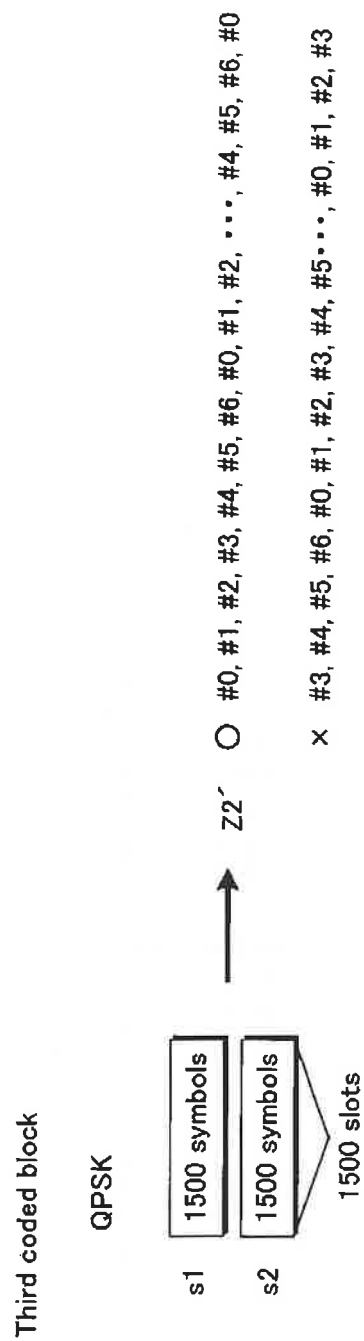


FIG. 74

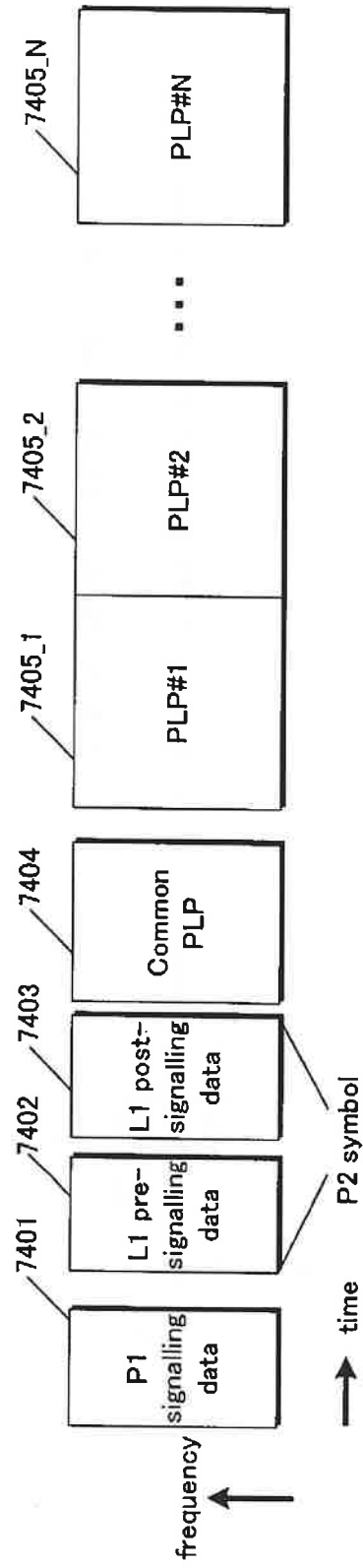


FIG. 75

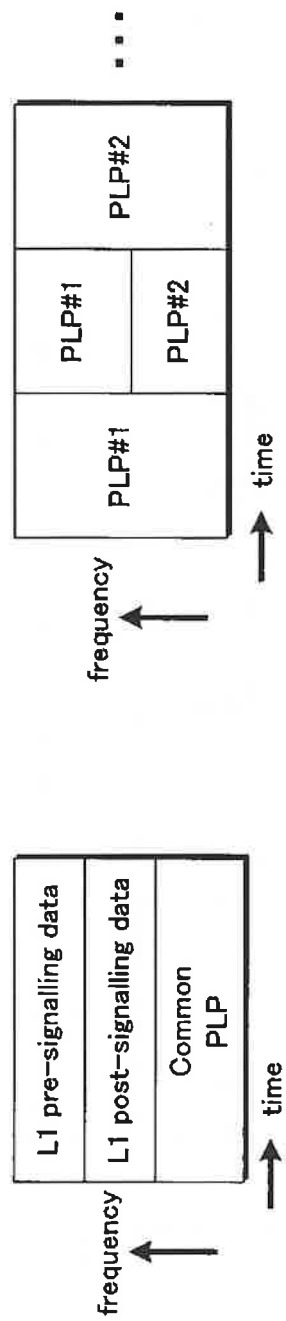


FIG. 76

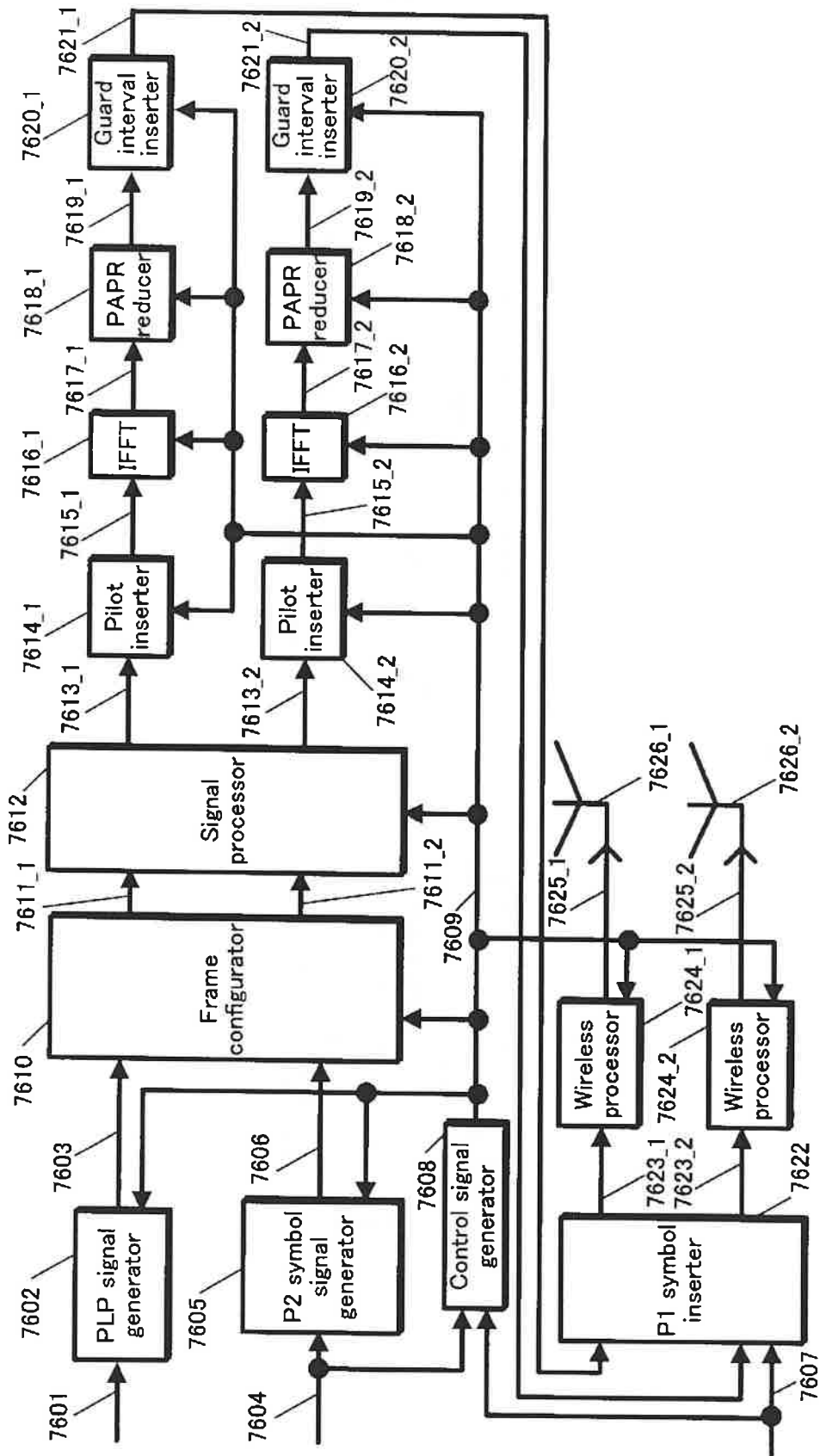


FIG. 78

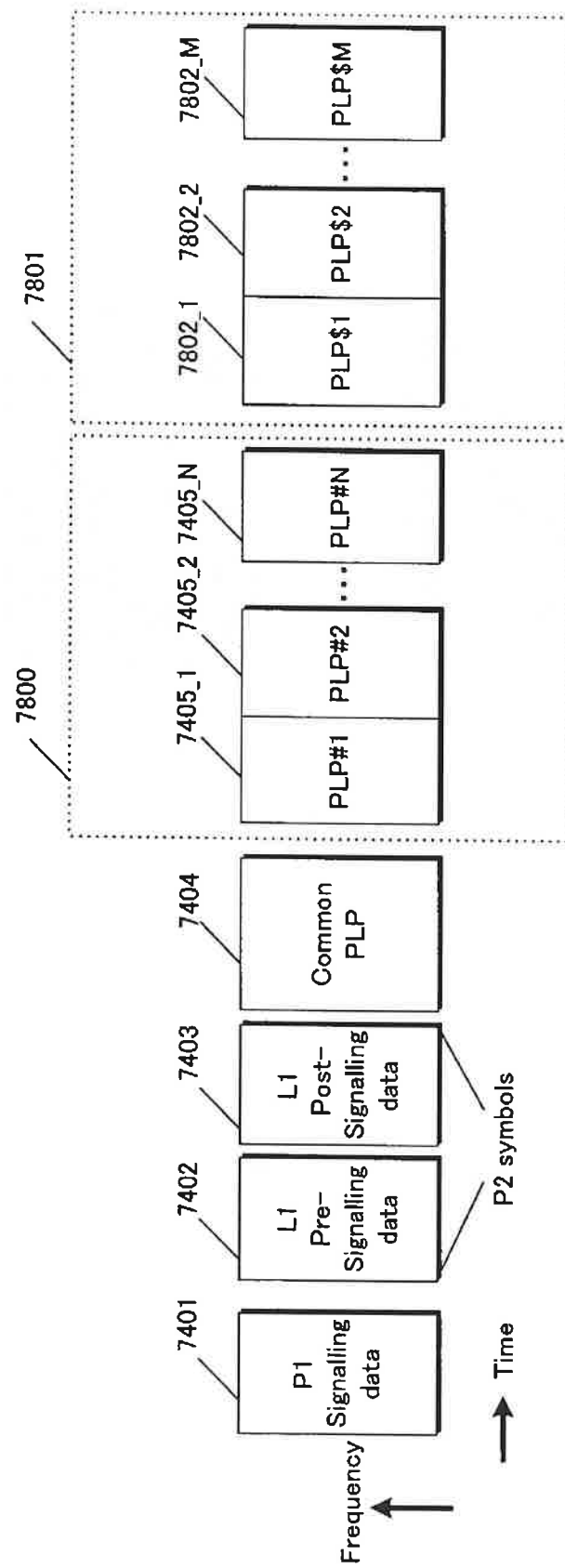


FIG. 79

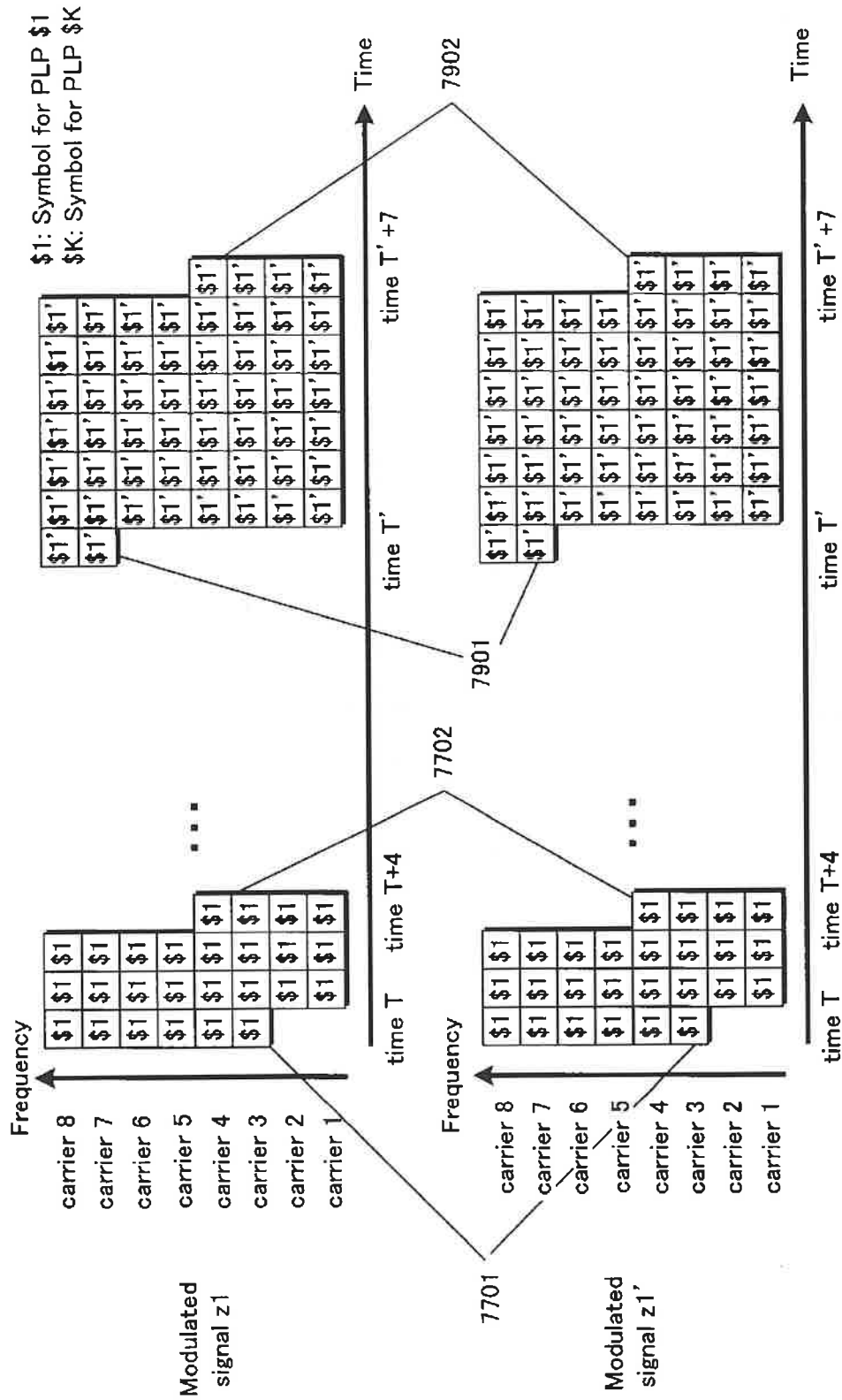


FIG. 80

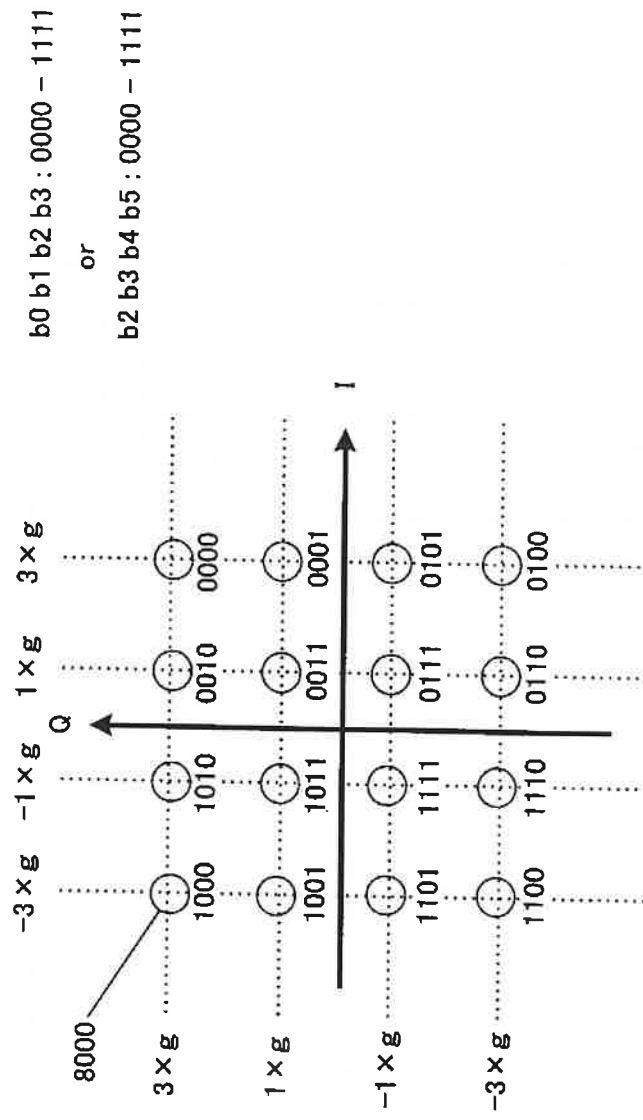


FIG. 81

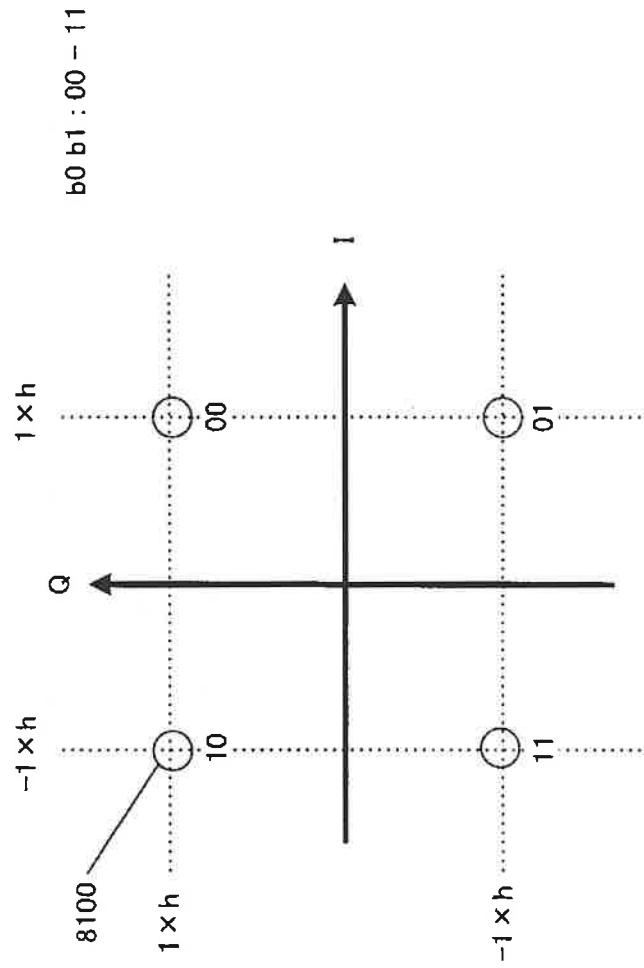


FIG. 82

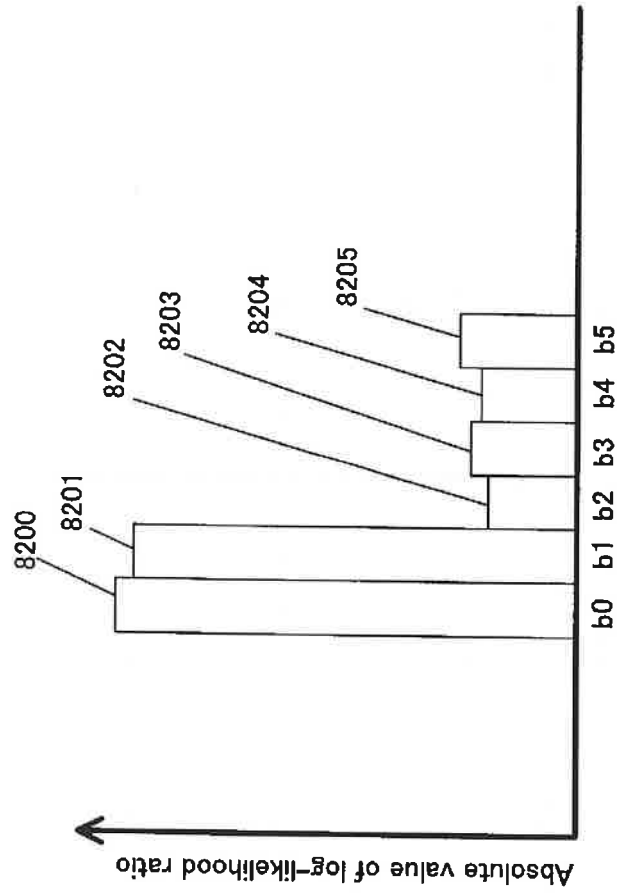


FIG. 83

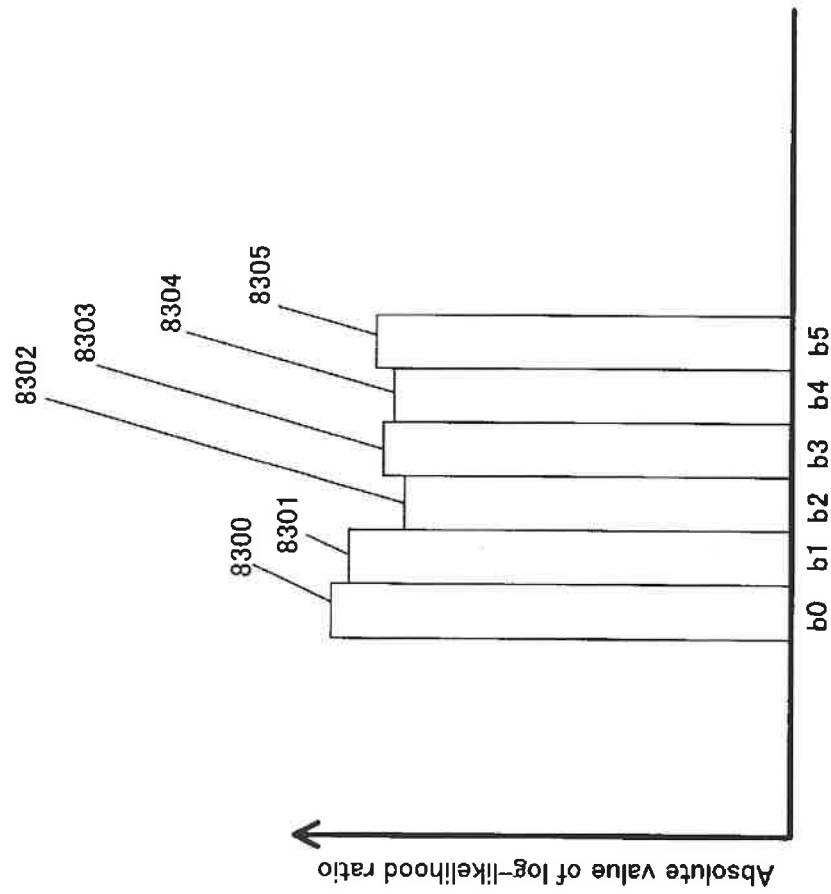


FIG. 84

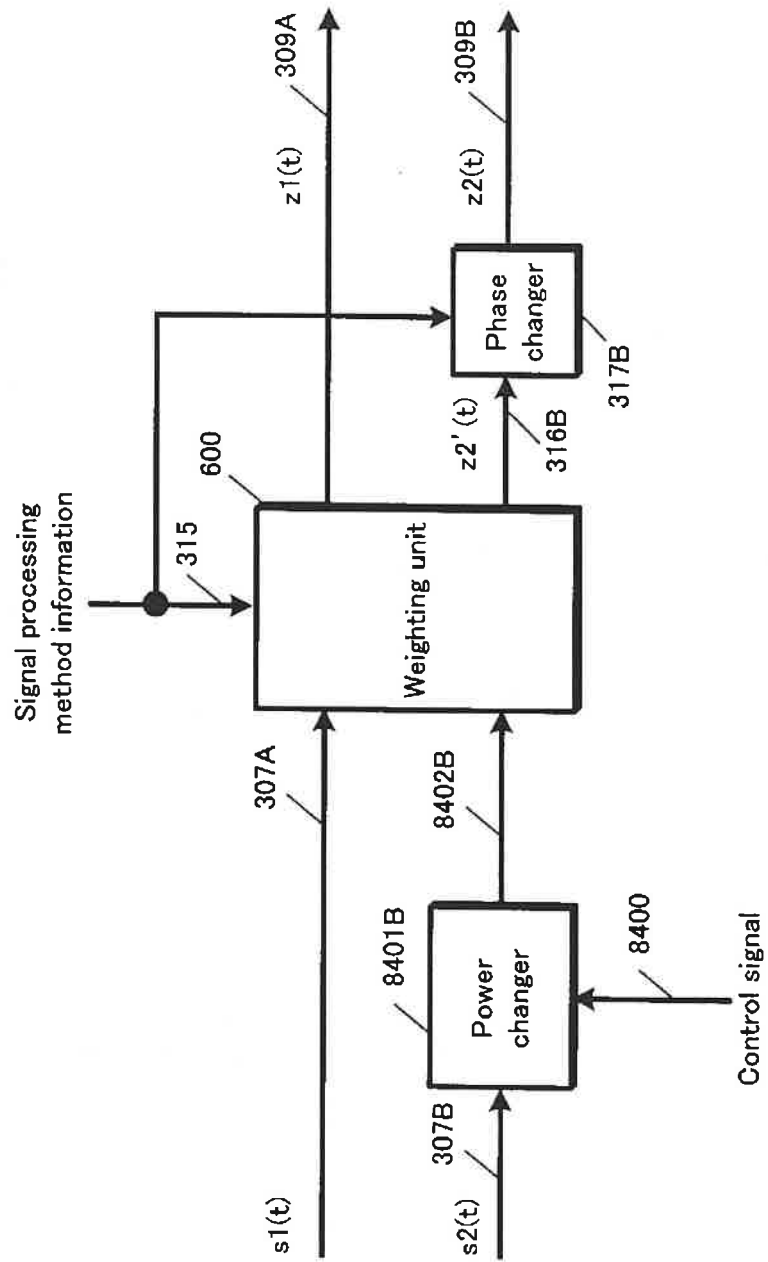


FIG. 85

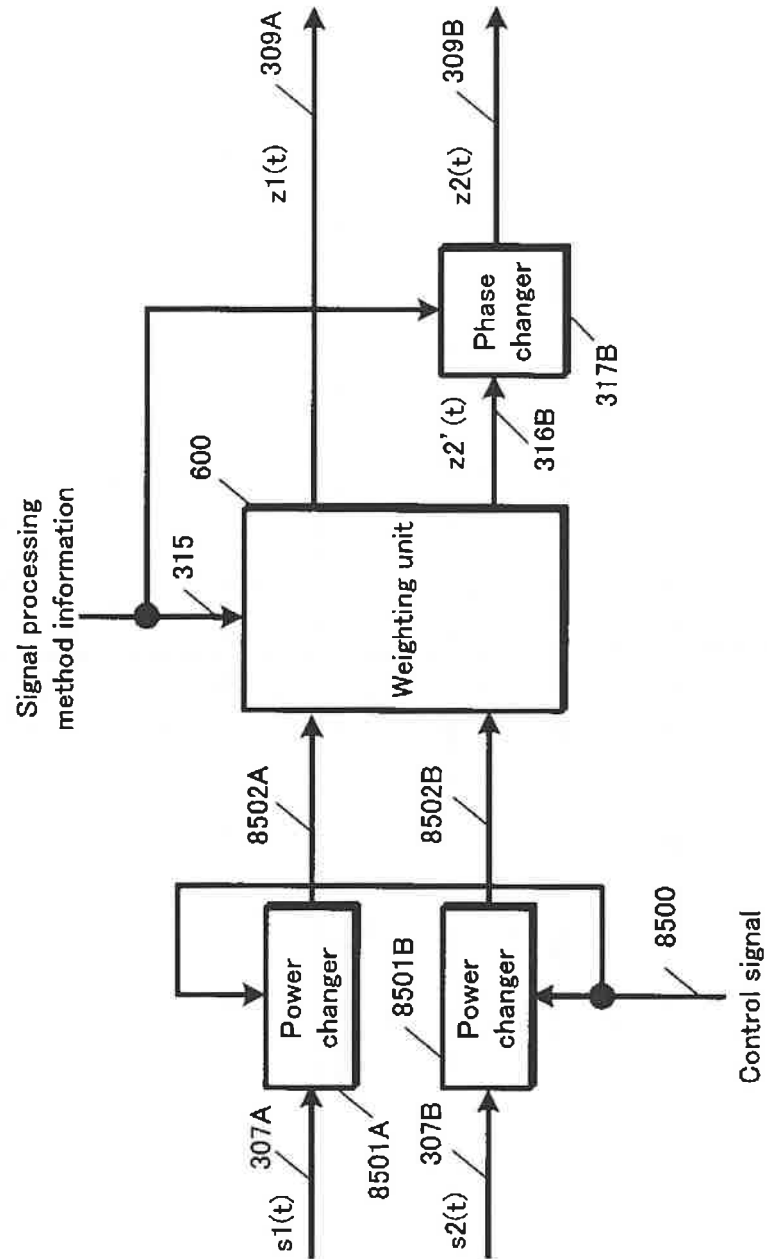


FIG. 86

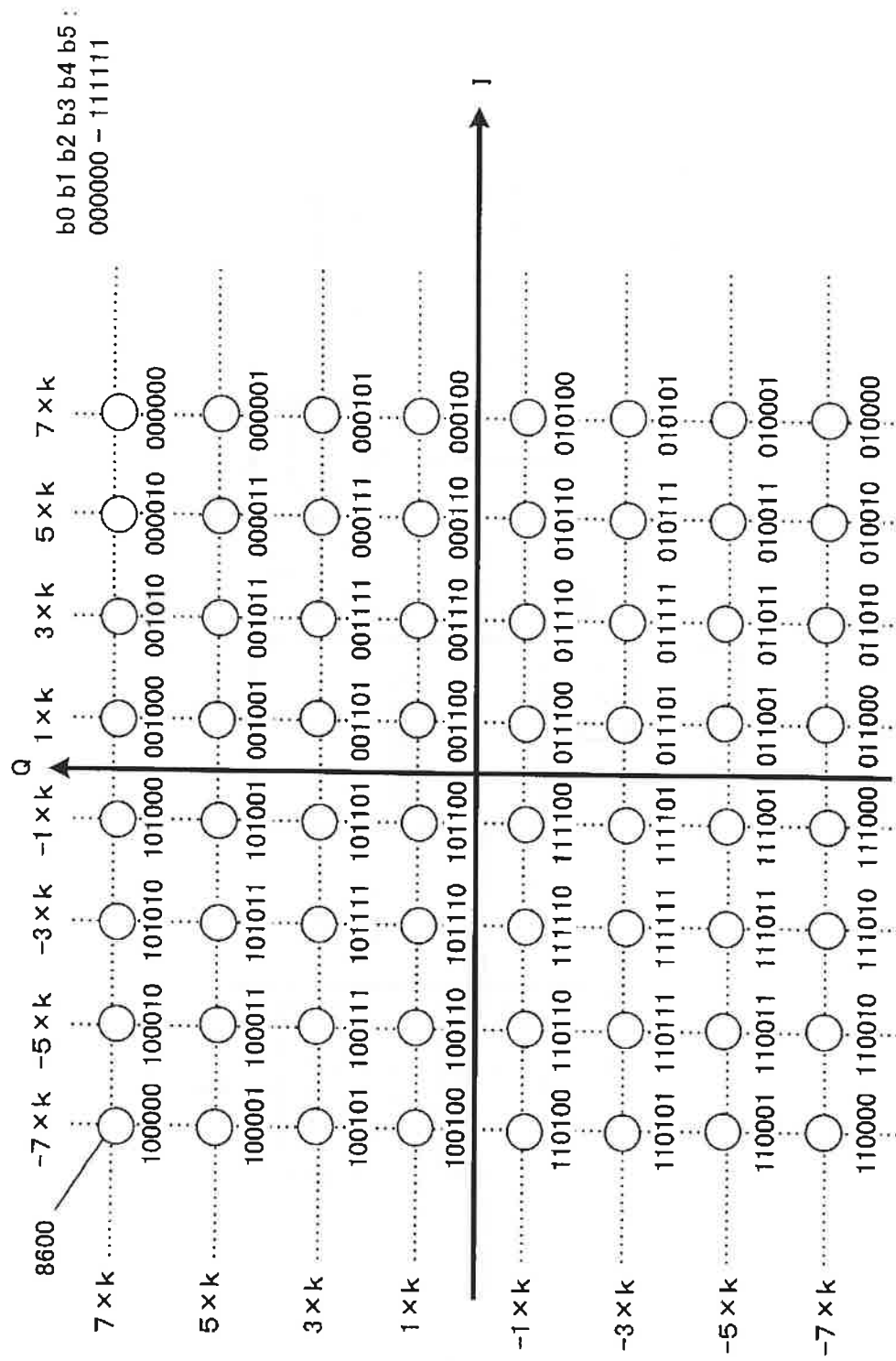


FIG. 87

Cycle of phase change: 3													
$s_1(t)$	QPSK	QPSK	QPSK	16QAM	16QAM	16QAM	QPSK	QPSK	QPSK	16QAM	16QAM	16QAM	...
$s_2(t)$	16QAM	16QAM	16QAM	QPSK	QPSK	QPSK	16QAM	16QAM	16QAM	QPSK	QPSK	QPSK	...
Power changer (8501A)	$v=a$	$v=a$	$v=a$	$v=b$	$v=b$	$v=b$	$v=a$	$v=a$	$v=a$	$v=b$	$v=b$	$v=b$	...
Power changer (8501B)	$u=b$	$u=b$	$u=b$	$u=a$	$u=a$	$u=a$	$u=b$	$u=b$	$u=b$	$u=a$	$u=a$	$u=a$	...
Phase changing value	$y[0]$	$y[1]$	$y[2]$	$y[0]$	$y[1]$	$y[2]$	$y[0]$	$y[1]$	$y[2]$	$y[0]$	$y[1]$	$y[2]$	...
Time (Frequency)	$t=0$ ($f=f_0$)	$t=1$ ($f=f_1$)	$t=2$ ($f=f_2$)	$t=3$ ($f=f_3$)	$t=4$ ($f=f_4$)	$t=5$ ($f=f_5$)	$t=6$ ($f=f_6$)	$t=7$ ($f=f_7$)	$t=8$ ($f=f_8$)	$t=9$ ($f=f_9$)	$t=10$ ($f=f_{10}$)	$t=11$ ($f=f_{11}$)	...

Cycle of phase change: 6=3 x 2
(when taking phase change and
switching between modulation
schemes into consideration)

FIG. 88

	Cycle of phase change: 3								
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	
s1(t)	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	...
s2(t)	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	...
Power changer (8501A)	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	...
Power changer (8501B)	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	...
Phase changing value	y[0]	y[1]	y[2]	y[0]	y[1]	y[2]	y[0]	y[1]	...
Time (Frequency)	t=0 (f=f0)	t=1 (f=f1)	t=2 (f=f2)	t=3 (f=f3)	t=4 (f=f4)	t=5 (f=f5)	t=6 (f=f6)	t=7 (f=f7)	...

FIG. 89

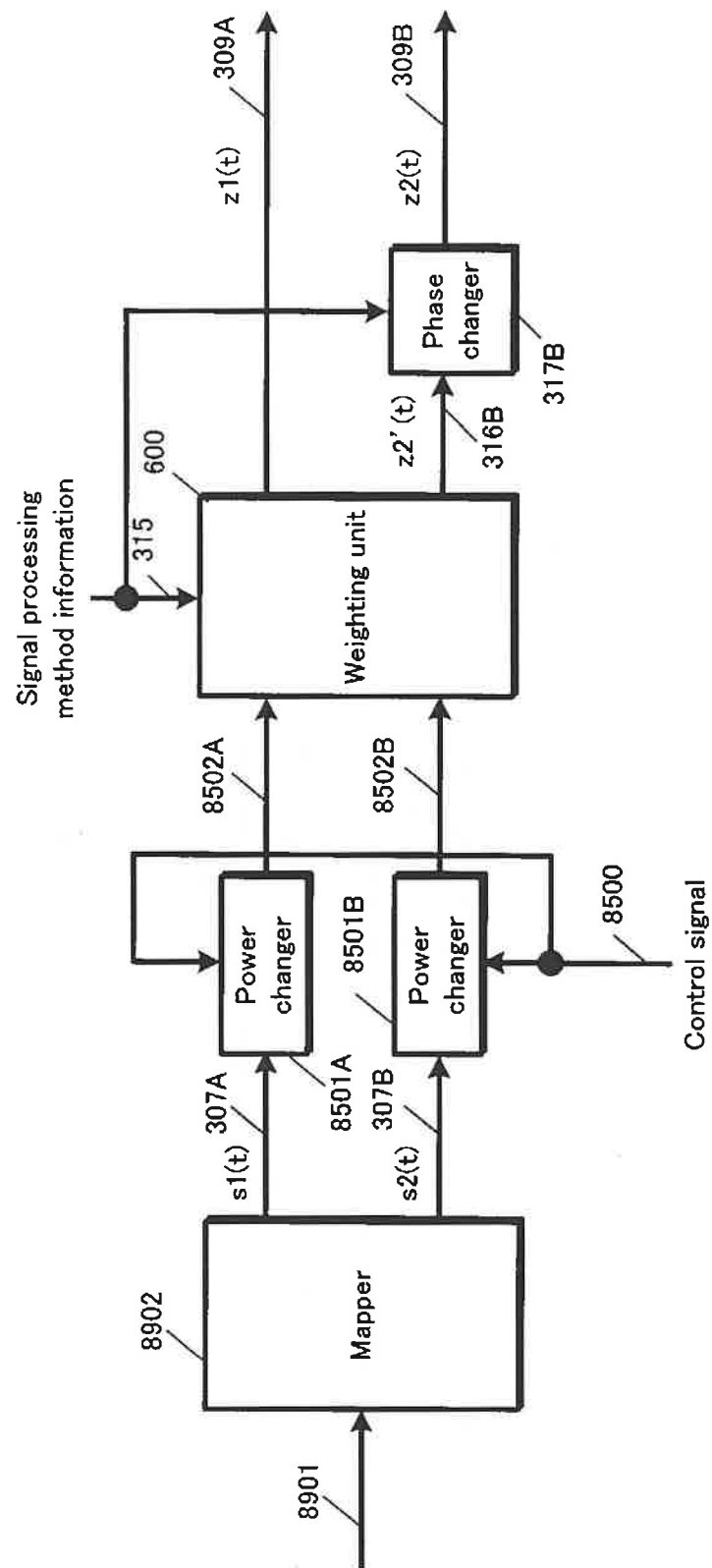


FIG. 90

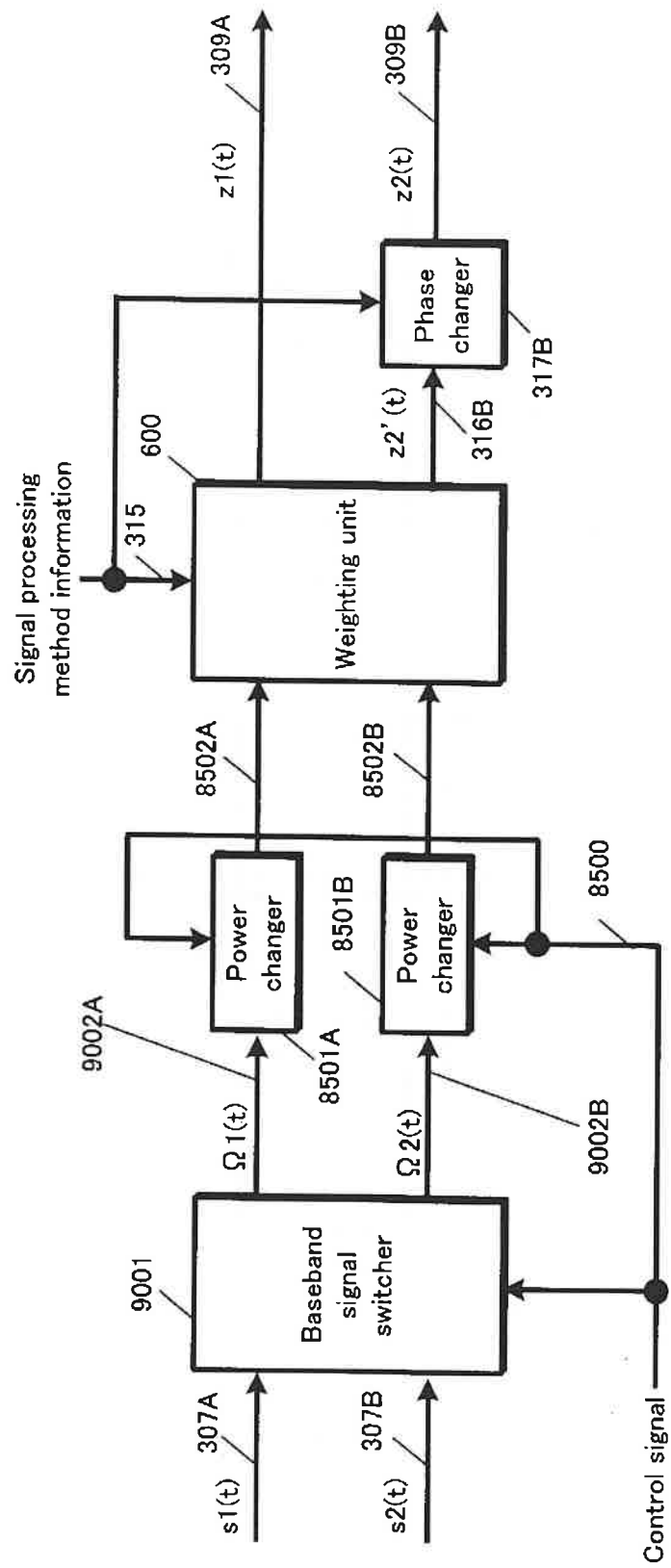


FIG. 91

Cycle of phase change: 3																	QPSK											...																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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s2(t)																		16QAM											...																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
$\Omega 1(t)$	QPSK	QPSK	QPSK	16QAM	16QAM	16QAM	16QAM	16QAM	QPSK	QPSK	QPSK	QPSK	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM	16QAM</

FIG. 92

																	
s1(t)	QPSK																...
s2(t)	16QAM																...
$\Omega_1(t)$	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	...
$\Omega_2(t)$	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	...
Power changer (8501A)	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	v=a	v=b	...
Power changer (8501B)	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	u=b	u=a	...
Phase changing value	y[0]	y[1]	y[2]	y[0]	y[1]	y[2]	y[0]	y[1]	y[2]	y[0]	y[1]	y[2]	y[0]	y[1]	y[2]	y[0]	...
Time	t=0	t=1	t=2	t=3	t=4	t=5	t=6	t=7	t=8	t=9	t=10	t=11	t=12	t=13	t=14	t=15	...
(Frequency)	(f=f0)	(f=f1)	(f=f2)	(f=f3)	(f=f4)	(f=f5)	(f=f6)	(f=f7)	(f=f8)	(f=f9)	(f=f10)	(f=f11)	(f=f12)	(f=f13)	(f=f14)	(f=f15)	...
																	
	Cycle of phase change: $6=3 \times 2$ (when taking phase change and switching between modulation schemes into consideration)																

FIG. 93

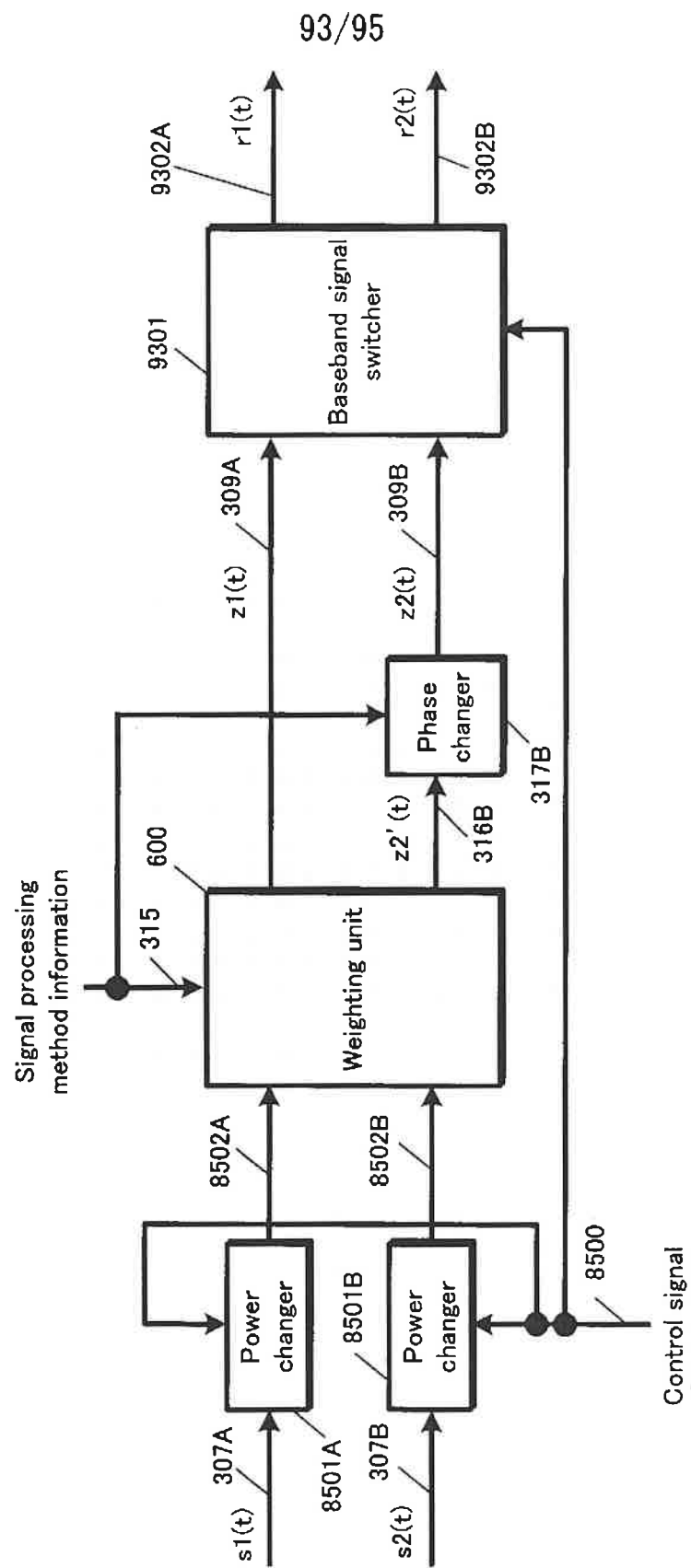


FIG. 94

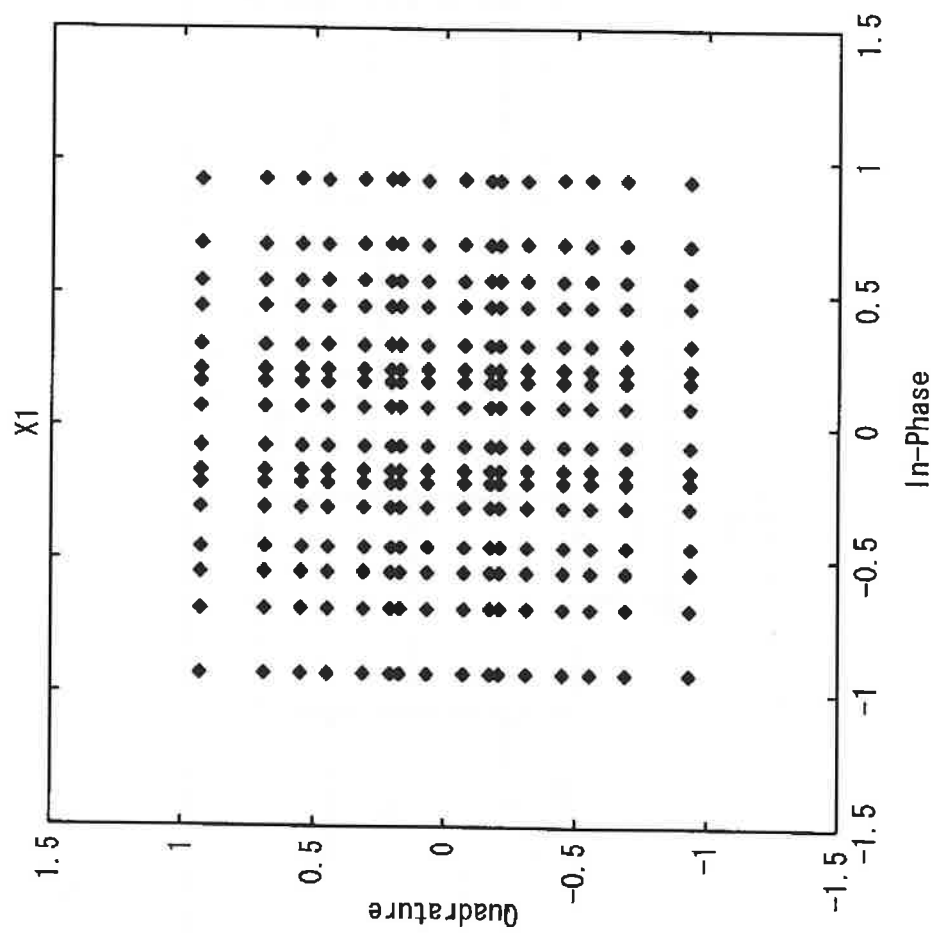


FIG. 95

