

(a) Coding rate R = 1/2.																													
57	-	-	-	50	-	11	-	50	-	79	-	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	28	-	0	-	-	-	55	7	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	24	37	-	-	56	14	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	53	-	-	53	-	-	1	35	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	20	66	-	-	20	28	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	8	-	42	-	50	-	-	8	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-
69	79	79	-	-	-	56	-	53	-	-	0	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-
65	-	-	-	38	57	-	-	72	-	27	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-
64	-	-	-	14	52	-	-	30	-	32	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-
-	45	-	70	0	-	-	-	77	9	-	-	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-
2	55	-	57	35	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-
24	-	61	-	60	-	-	27	51	-	-	16	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Coding rate R = 2/3.																													
61	75	4	63	56	-	-	-	-	-	8	-	3	17	25	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
56	74	77	20	-	-	-	64	24	4	67	-	7	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-
38	21	68	10	7	14	65	-	-	-	23	-	-	-	75	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-
18	38	43	78	76	-	-	-	-	5	36	-	15	78	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-
40	2	53	25	-	52	62	-	20	-	44	-	-	-	-	-	-	-	-	0	-	-	0	0	-	-	-	-	-	-
69	23	64	10	22	-	21	-	-	-	-	68	23	29	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-
12	0	68	50	55	61	-	40	-	-	53	-	-	-	44	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-
59	8	34	64	70	-	-	11	75	24	-	-	-	-	58	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(c) Coding rate R = 3/4.																													
48	29	29	32	9	61	-	-	-	63	45	90	-	-	-	37	32	22	1	0	-	-	-	-	-	-	-	-	-	-
4	49	62	48	11	30	-	-	-	49	17	61	37	15	-	54	-	-	-	0	0	-	-	-	-	-	-	-	-	-
35	76	78	51	37	35	21	-	17	64	-	-	-	59	7	-	-	32	-	-	0	0	-	-	-	-	-	-	-	-
9	65	44	5	54	56	73	34	42	-	-	35	-	-	-	46	39	0	-	-	-	0	0	-	-	-	-	-	-	-
3	62	7	80	68	26	-	80	55	-	36	-	26	-	9	-	72	-	-	-	-	-	-	0	0	-	-	-	-	-
26	75	13	21	69	59	3	18	-	-	35	-	62	36	28	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
(d) Coding rate R = 5/6.																													
13	48	80	65	4	74	7	30	78	62	37	60	-	49	73	11	74	72	22	-	1	0	-	-	-	-	-	-	-	-
69	63	74	56	50	77	57	65	4	16	51	-	64	-	68	9	48	62	54	27	-	0	0	-	-	-	-	-	-	-
51	19	0	80	24	25	42	54	44	73	71	9	67	35	-	58	-	29	-	53	0	-	0	0	-	-	-	-	-	-
16	29	26	41	44	56	59	37	50	24	-	65	4	65	52	-	4	-	72	34	1	-	-	-	-	-	-	-	-	-

图 1a

$$p_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$p_1 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \end{bmatrix}$$

$$p_2 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$$

$$p_3 = \begin{bmatrix} 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

图 1b

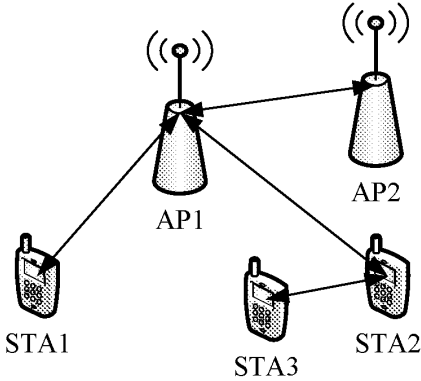


图 2a

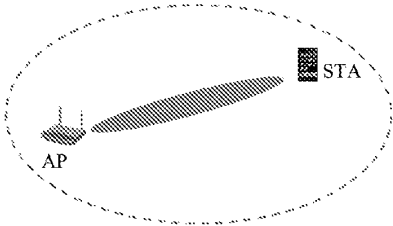


图 2b

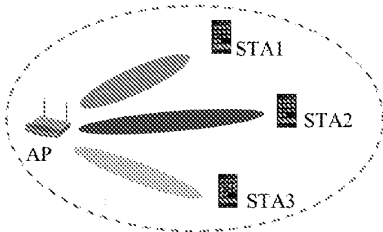


图 2c

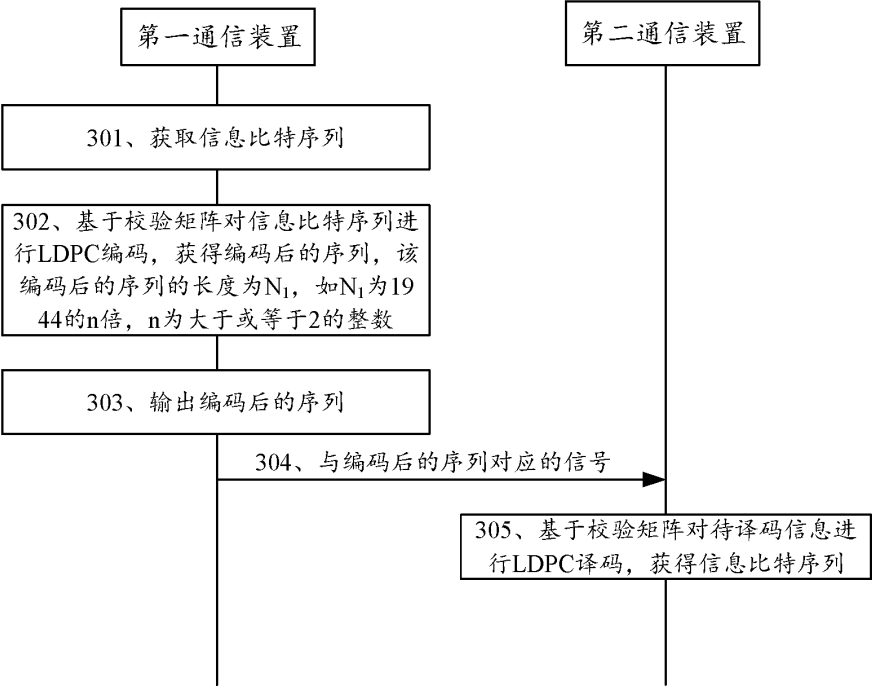


图 3

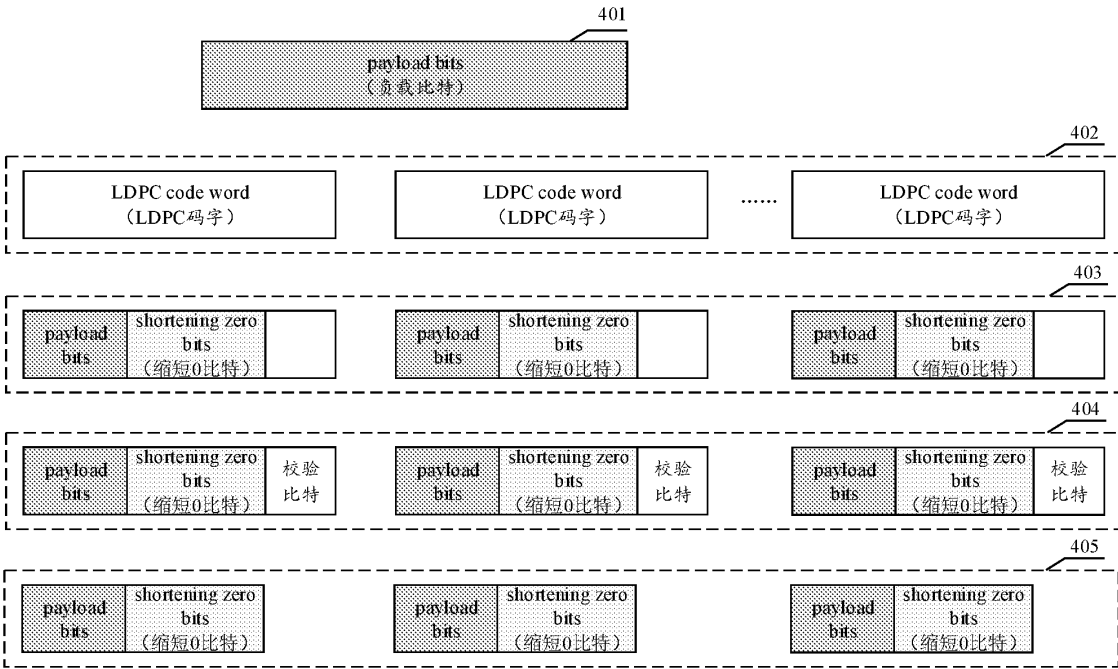


图 4

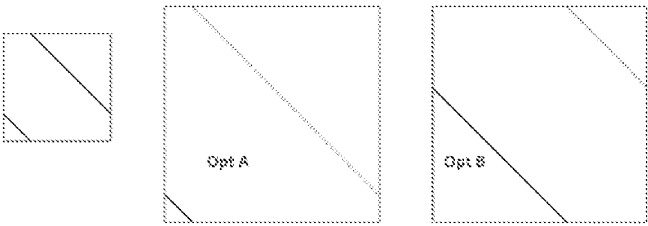


图 5a

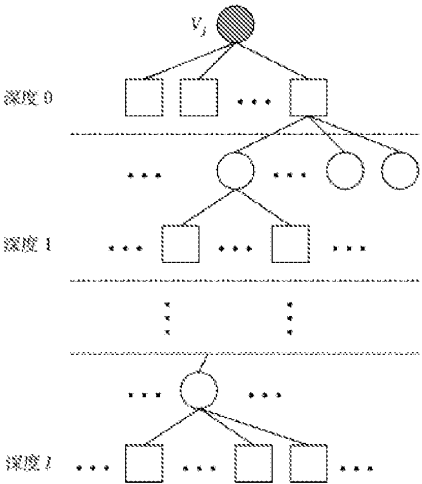


图 5b

$$\mathbf{H} = \begin{matrix} & \begin{matrix} V_1 & V_2 & V_3 & V_4 & V_5 & V_6 & V_7 & V_8 \end{matrix} \\ \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \end{matrix} & \begin{bmatrix} 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 1 & 1 & 0 & 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & 1 & 1 & 0 & 0 & 1 \end{bmatrix} \end{matrix}$$

图 6a

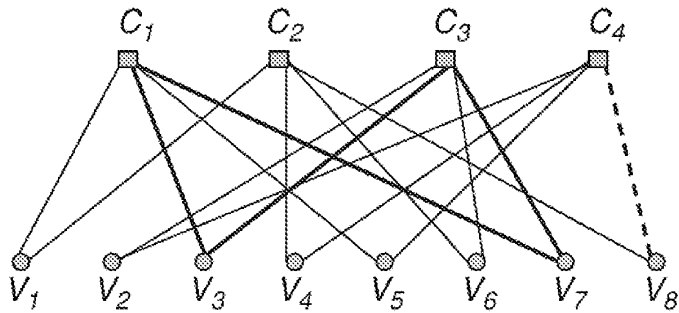


图 6b

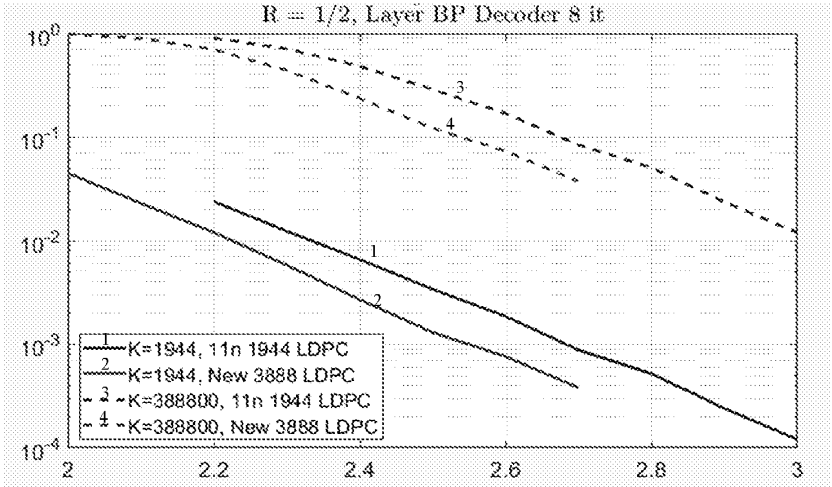


图 7a

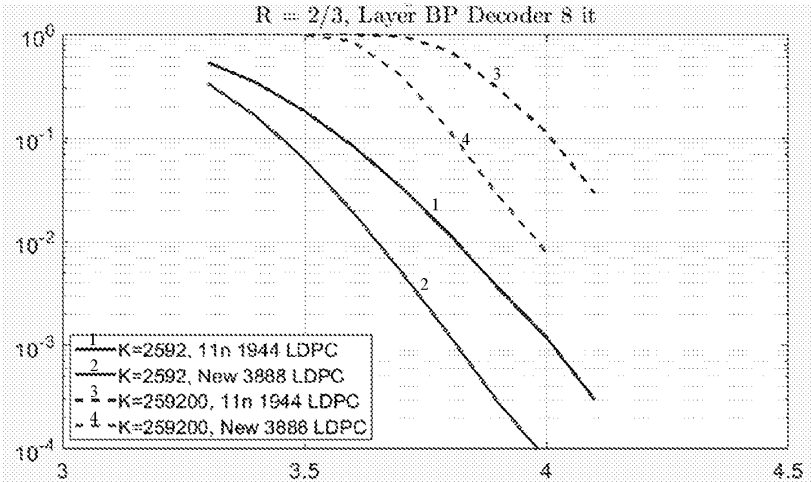


图 7b

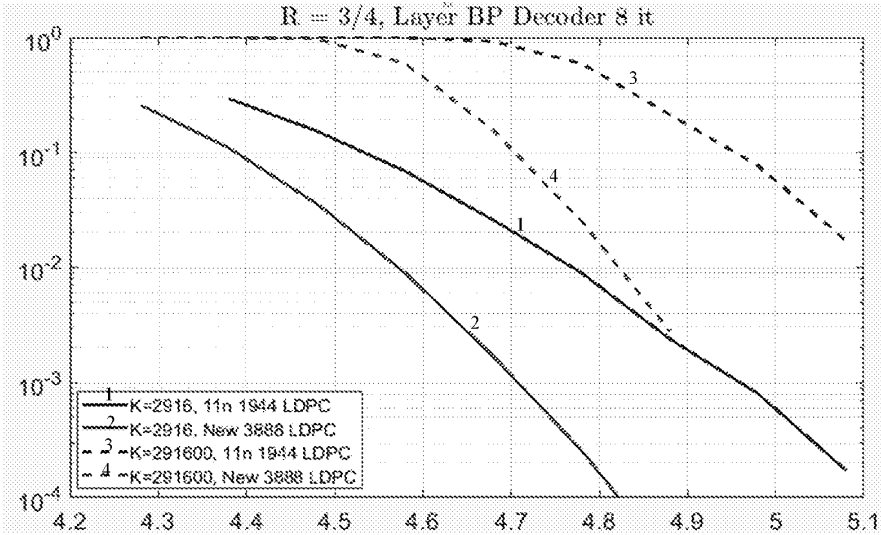


图 7c

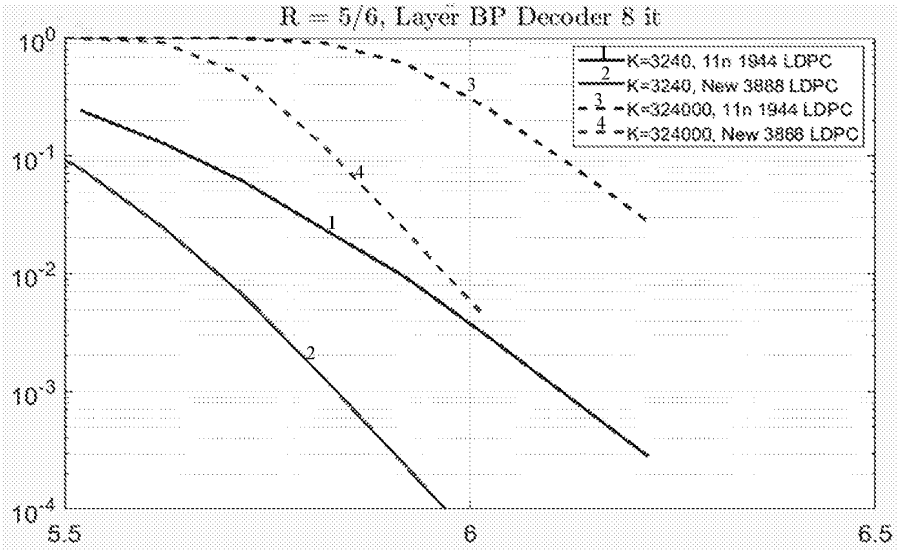


图 7d

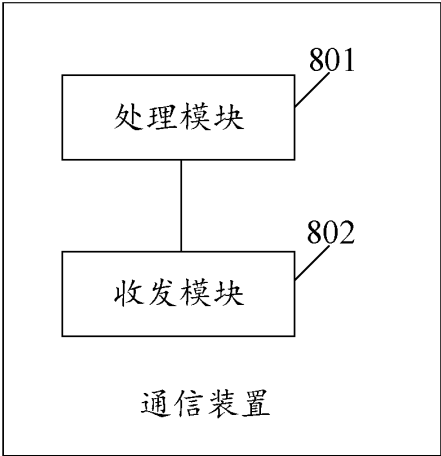


图 8

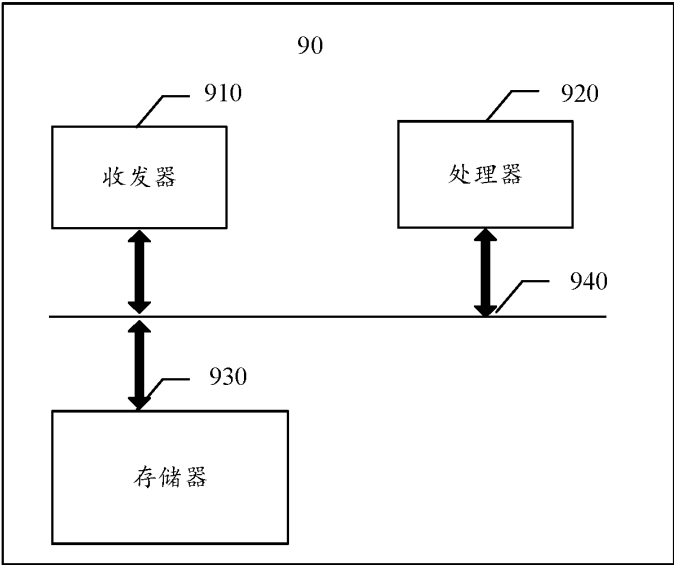


图 9

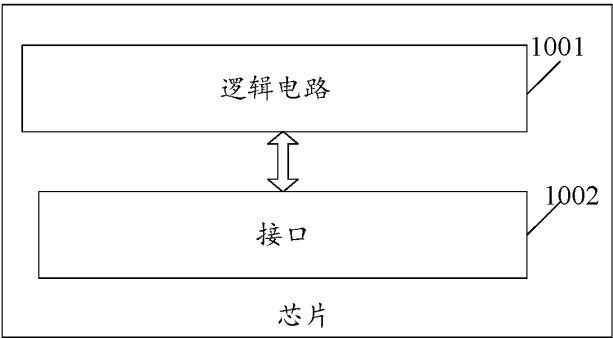


图 10