

(19)
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(24)

2004 03 22
10-0423869
2004 03 09

(21) 10-2001-0076336
(22) 2001 12 04

(65)
(43)

10-2003-0045577
2003 06 11

(73)

4 873-29 4

(72)

329-1 105 1501

3 505

4 834-11

3 가 608

(74)

:

(54)

(Carrier)

가

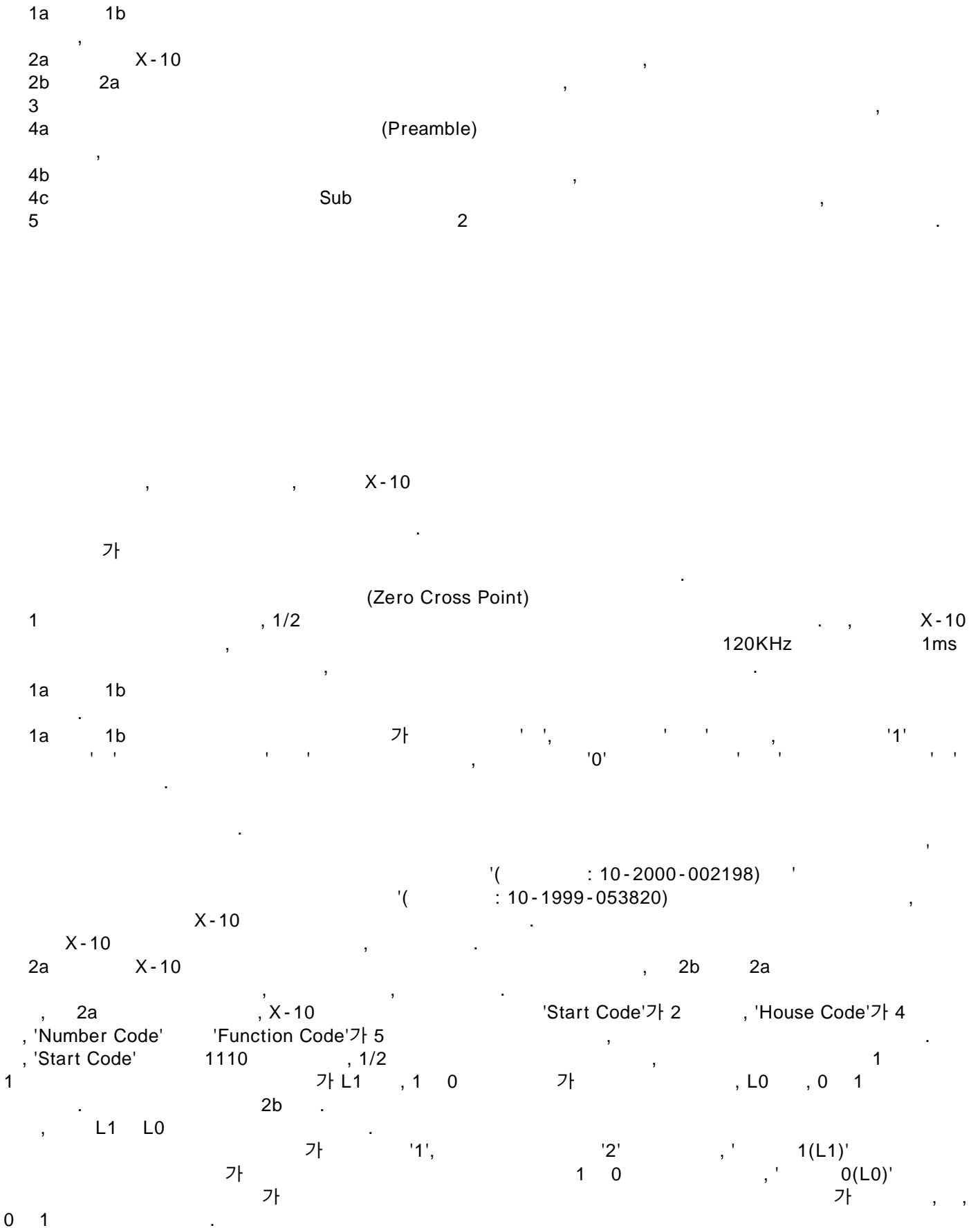
가

()

1

5

, X-10,



, 'Start Code' '1110', 'House Code' 'L0,L0,L0,L1', 'Number/Function Code' 'L0,L0,L0,L1,L1' .
가 SMPS(: Switching Mode Power Supply)가

X-10

(Carrier) 가 () ; 가
1 , , ;

Preamble) ; 1 Half Area 2 Half Area , 2 1010 (가
3 Half Area 4 Half Area 가 ; 3 Half Area 3 , 4 Half Area가 ;

Carrier) 가 () ; 가 (Ca
amble) ; 1 Half Area 2 Half Area ; 2 1010 (Pre
3 Half Area 4 Half Area 가 ; 3 Half Area 3 , 4 Half Area가 ; 1

, 0 ,
X-10

120 KHz 1ms
(Adaptive Twin Carrier)

3 , , X-10
() 4 가 5 가 (Sub A, Sub B, Sub C)
) 2 1ms (X-10) ,

'1' , 1/2 (Half Cycle) 4 , 가 120 KHz 1ms
 120KHz 1ms 가 ('1') 가 .
 '0' 가 , (Sub) 가 ,
 가 , '0' 가 '1'
 가 , Sub 가 '1'
 4a (Preamble)
 4b , 4c
 Sub ,
 4a , 2 '1010' Sub , Sub 5
 가 , 1 Half Area 가 , 2 Half Area
 4b 가 , 1 Half Area 가 , 2 Half Area
 가 , 1 Half Area 가 , 2 Half Area
 1 Half Area 2 Half Area가 , 1 H
 alf Area 2 Half Area가 , 2 Half Area
 가 , 1 Half Area
 가 , 3 , 4 Half Area 가 , 1 , 2 Half Ar
 ea
 , 1 , 2 Half Area
 , 3 Half Cycle 4 Half Cycle 가 , 가 ,
 , 4c Sub 가 ,
 5 2 ,
 , S1201 , , S1202
 , Sub First_sub , S1203 , First_sub가
 S1203 , S1204 ,
 S1201 S1205 ,
 S1205 , S1206 , Sub
 Second_sub S1207 , Second_sub가
 S1207 S1208 ,
 S1201 ,
 S1209 ,
 S1210 , First_sub ,
 S1205 가 , S1211 , Sub
 , Second_sub S1212 , Second_sub가
 S1212 , Second_sub가 , S1213 , Second_sub
 , S1210 ,
 S1212 , Second_sub가 , S1210
 , S1210 , S1214 ,
 S1214 , S1201 , S1215 , S
 ub , Third_sub , S1216 , Third_sub가
 S1216 , S1201 , S1217 , T
 hird_sub First_sub가 ,
 S1217 , S1201 , S1218 , S
 ub

가

(57)

1.

가 (Carrier) 가 () ; 가

1 ;

2.

120 KHz, 1 ms

3.

120 KHz, 1 ms

4.

0

5.

6.

7.

가 (Carrier) 가 () ; 가

2 1010 (Preamble) ;

1 Half Area 2 Half Area 가 , ;

3 Half Area 4 Half Area 가 , ;

3 Half Area 가 , ;

1 , 2 Half Area 3 , 4 Half Area가 , ;

1 ;

8.

120 KHz, 1 ms

9.

7

120 KHz, 1 ms

10.
7 0

11.
7

12.

가 (Carrier) 가 () ; 가

1 ;
0

13.

14.

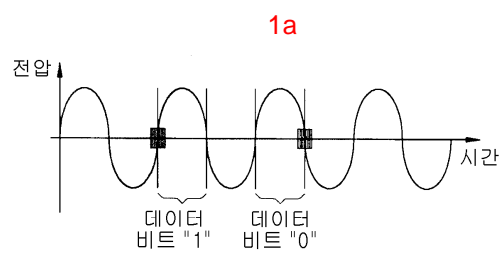
가 (Carrier) 가 () ; 가

2 1010 (Preamble) ;
1 Half Area 2 Half Area 가 ;
3 Half Area 4 Half Area 가 ;
3 Half Area 가 ;
1 , 2 Half Area 3 , 4 Half Area가 ,

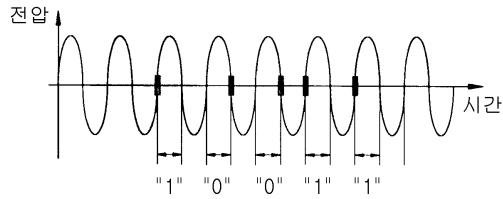
1 ;
0

15.

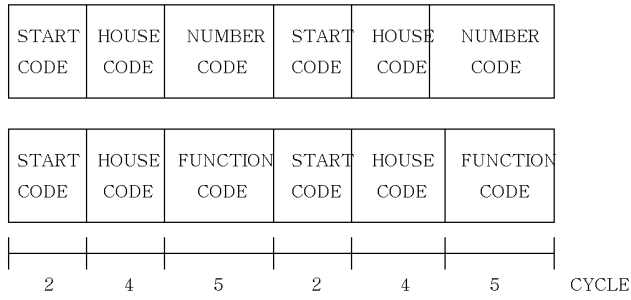
14 가



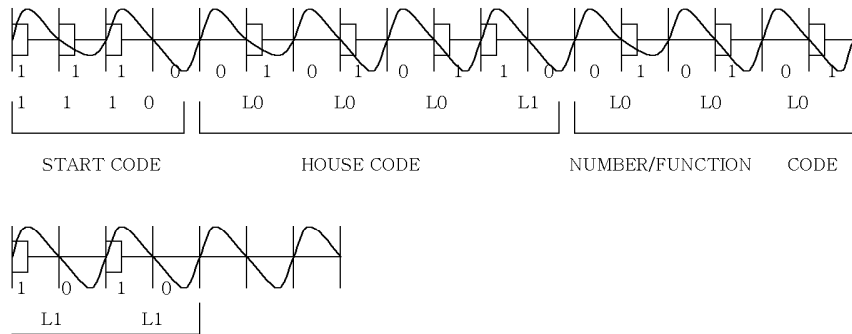
1b



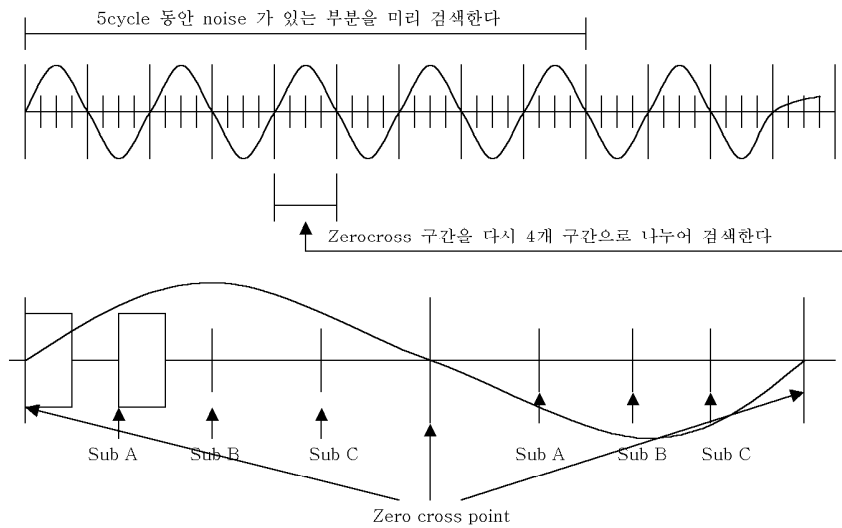
2a



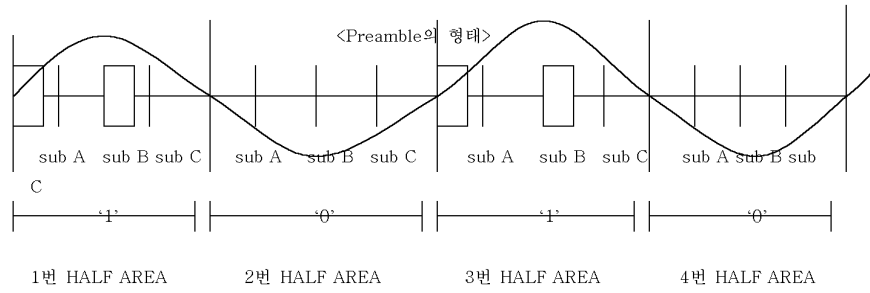
2b



3



4a



4b

	첫번째 HALF CYCLE	두번째 HALF CYCLE	획득구간
Sub A	0	1	0
	0	0	0
	1	1	0
	1	0	1
Sub B	0	1	0
	0	0	0
	1	1	0
	1	0	1
Sub C	0	1	0
	0	0	0
	1	1	0
	1	0	1

4c

ZERO CROSS 구역의 DATA	Sub구간의 DATA	최종 수신 값
0	1	0
0	0	0
1	1	1
1	0	0

5

