

(54)

가 , 1 1 , 1
 (106) 1 (100) 1 , 1 FFT(108)
 가 .

7

, , , , , , , ,

(digital video capture)

(flicker effects)

, (,)

(reassembled)

(1)

(2) 가
(scene)

(, 가 .)

가

(,)

1 , 1 1 가 1 , 1 ,
1 가 . ,
가 .

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

2

4

가

CMOS

가 AC

50Hz, 60Hz

(illumination)

on)

(integration)

가

(oscillation)

2

가

0

가

RESET
t

"t"

가

2

480

(resolution)

olution) , 480 가 . 가 ,
 가 RESET 가 RESET (,
 가) RESET (Y) 2 , 가
 (X) , (Y) , 가
 3 (,)
 , ,
 , " (picture)"
 가
 4 - , 4
 . Y -
 가 , 8 - - 0 - 255
 ,
 6 .
 가 (Fourier transform)
 (power amplitude) (, |Sin(X)/X|) , 가
 , 가 50Hz 60
 Hz , , 50Hz 60Hz
 가 .
 5 , 60Hz 50Hz
 가 , 0.0132 . 50Hz 60Hz
 , 50Hz 가 0.017 , 60Hz
 가 60Hz , 1
 1 - ()

[1]

0.009
0.0132
0.0184
0.0224
0.0276
0.0317

4 , (fast - Fourier - transform) (FFT) ()

6 4 가 60Hz 가 FFT 4
 120Hz " (spike)"가 , 60Hz 가 (60Hz)
 2 " 120Hz 가 (, 가 60Hz ")

7 (100), (102), - (A/D) (104), (106),
 FFT (108) (110) (110) (112)

(100) (100) (100) A/D (104) 가
 , (100) (106) (106) (112) ,
 A/D (104) (102) A/D (104) (102)
 FFT (108) , FFT (108) (102)
 (110) 가
 (106) (102),
 FFT (108) (110) (112)

(102) (102) A/D (104) ,
 (image enhancement) ()
 가 ,
 (112) (112)

, 7

8 (106) (100) (300) (undersamplin
g) (Nyquist) 가 2 (, 가 가
(60Hz) 2)가 120Hz 가 가

(100) " " 가 , (100)가 16 가
15 120Hz 240Hz

(302) , 13.2 , 60Hz 50Hz
(304) , (302) (106) (, 13.2) 13.
(100) 2

(306) , 가 (horizontal averaged). (ill
umination fluctuations) (dark object) (light o
bject) 가 가
(100) 가 가
4

(308) , 가 가 (, 가
(stitched) , (310) 가

(310) , FFT (108) 가 , 6 ,
(308) (가 60Hz) . 120Hz FFT (resolve) 가 , 100Hz 가
(312)

(312) , 100Hz FFT 120Hz 가 (314) ,
(110) 60Hz (, 100Hz) 120Hz) 50Hz (,
, 가 가 , 60Hz 50Hz 10%
(316)

FFT , 2
FFT (smear)

(alias) 가 2 (smeared out).
가

(316) 가 60Hz, 50Hz (110)

(314) 가 (110) (110)

, 50Hz 60Hz
(non - flickering)

(314)

(110) 가 (110) (flick) (106)

50Hz 60Hz

75Hz 가 가 60Hz

가

(57)

1.

1 ;

1 ;

1 가 ;

1

2.

1 ,

1 2

3.

2 ,

1 ;

2

4.

3 ,

5.

1 ,

1 ,

;

;

1

6.

5 ,

7.

1 ,

1 60Hz

.

8.

1 ,

1 50Hz

.

9.

1 ,

1 0Hz

.

10.

;

,

,

1 ;

1 ;

1 가 ;

1

.

11.

10 ,

1

2

.

12.

11 ,

,

1 ;

2 ,

13.

12 ,

14.

13 ,

,

;

;

1 , 1

15.

14 ,

16.

10 ,

1 60Hz

17.

10 ,

1 50Hz

18.

10 ,

1 0Hz

19.

;

- ;

- ;

20.

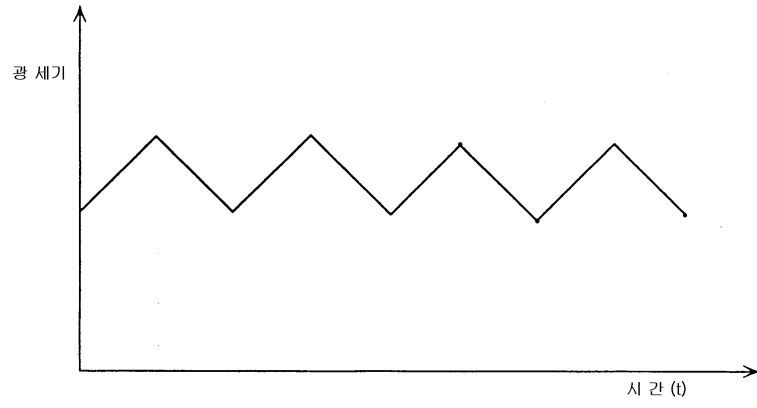
19 ,

,

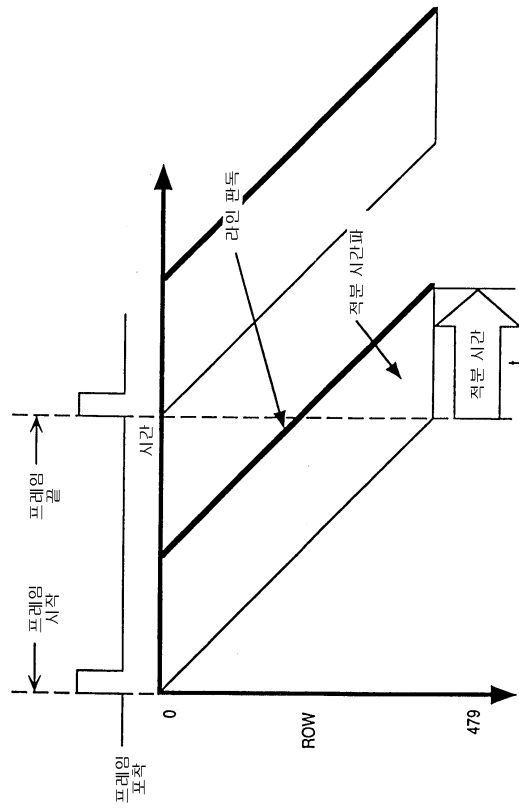
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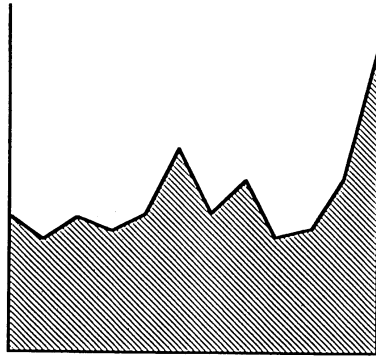
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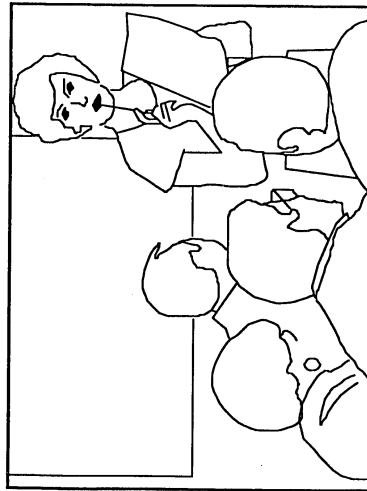
2



3

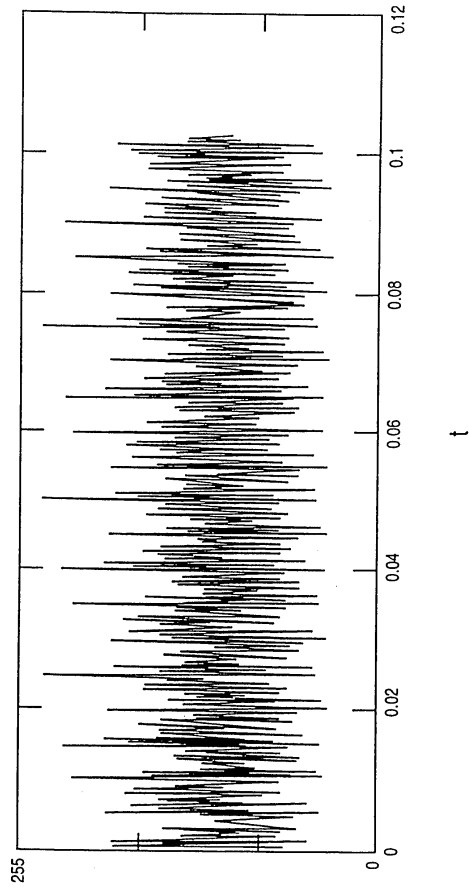


시간

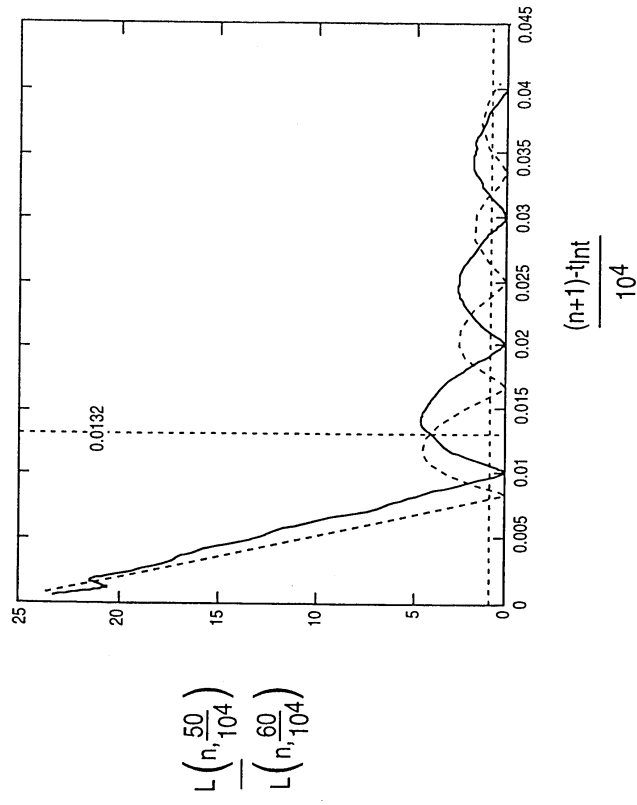


경상도 근무

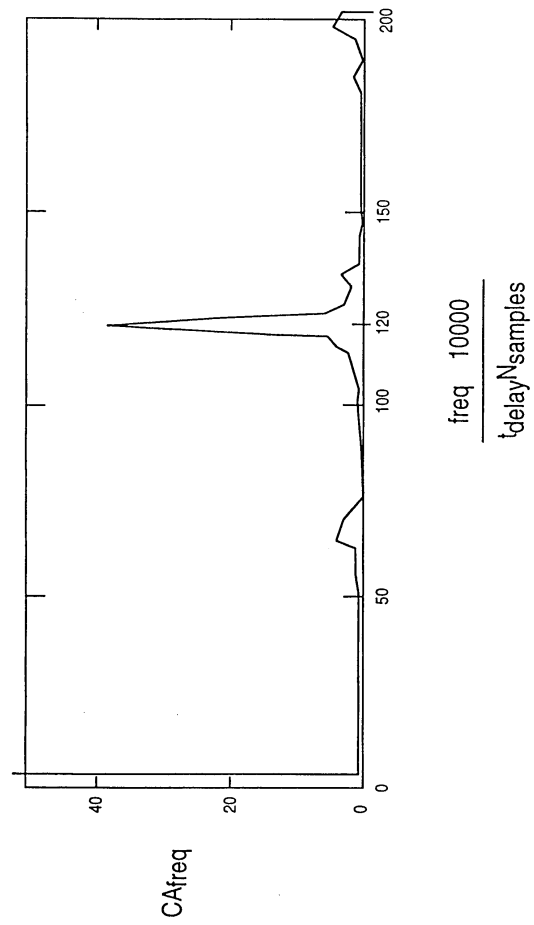
4



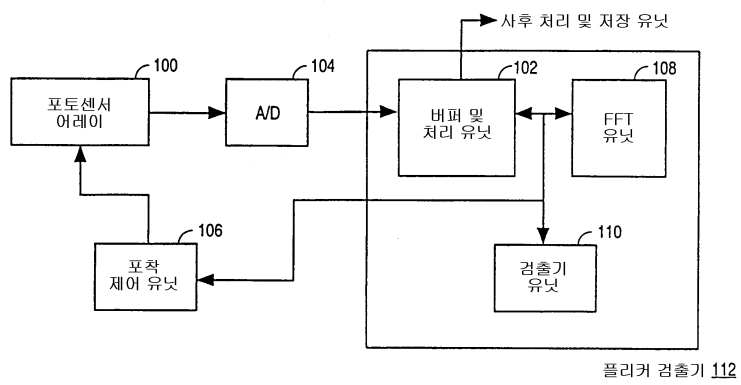
5



6



7



8

