

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. 7
H04L 29/02

(11)
(43)

2002 - 0015647
2002 02 28

(21) 10 - 2001 - 0047716
(22) 2001 08 08

(30) 60/227,140 2000 08 22 (US)
09/821,600 2001 03 29 (US)

(71) .
46

(72) ,
, 46074, 20
,
, 46032, 11388

(74)
:

(54)

가 , 가
(215) 가 (220) CATV (225)

1

2

3

< >

12 : 15 :

20 : 30 :

35 : MCNS 60 :

62 : HPNA 65 :

75 : USB

, TV, VCR, (inte
ractive bi - directional communication)

(PC/TV) 가 (home entertainment systems)
(multiple source) (multiple destination)
가 (multiple locat
ion)
sion)(HDTV) (High Definition Televi
sion)(HDTV) (Multi - point Microwave Distribution System)(MM
DS) (Digital Video Broadcasts)(DVB) (terrestrial sour
ces) (coaxial lines)(
CDROM, VHS TV) (DVD),
VHS(DVHS™) , PC

가 (cable distribution network) (transmission power level
variation) 가

< >

(interruption)

가 CATV

1 CATV (head end)
 (, DOCSIS)
 PC(TV) (communication bridge) TV
 MP(Simple Network management Protocol)() SN
 가
 (performance threshold) 가
 " (early warning)" (cable operator)

CATV
 (cable operator upstream path)

가
 (cable plant amplifier) RF

(central cable operator network management station)

(up - time)

가 가

1 TCP/IP{ / (Transmission Control Protocol/Internet Protocol)}, (Ethernet) MPEG{ 가 (Motion Picture Experts Group)} (, 1994 6 10 MPEG2 ISO/IEC 13818 - 1, 1995 1 20 ISO/IEC 13818 - 2)
 (Multimedia Cable Networks Systems) (MCNS) 1998 3
 (ITU) DOCSIS 1.0{ (Data Over Cable Service Interface Specification) 1.0} EuroDOCSIS IETF()
 , RFC 2669 RFC() . RFC 가 ,

SIS , , ADSL, ISDN, DOC

(IP)

1 { (12)} / (HFC) ((10) RF CATV (12) ((72) LANs) / / (72) (82, 77) (USB) HPNA(가)

, HPNA USB (PCs),
 , VCR, DVD, 가
 V 1 (12) (20) (10) {CAT
 (12) } (12) CATV }
 (20) (5 42MHz) (88
 860MHz) 가 (60) ,
 (10) CATV DOCSIS/MPEG2 (72,
 82,77) , USB HPNA 1 (72,
 (12) (60) , (72,82,77) , USB HPNA
 (10) CATV 가 DOCSIS
 1 (12) (60)
 RF DOCSIS (12) (60)
 CNS() (15), (25), (30) M
 (35) . DOCSIS IP
 MPEG2
 (60) 1 (12) (12) CATV 가
 2 (12) , 2
 가 1 DOCSIS (12) 가 (60)
 2 (255) , (60)(1) (15)가 DOCSIS 가 RF
 (60) 가 MCNS (35) (12)
 DOCSIS
 2 (260) , (60) MCNS (35), (85) RF (87) CATV
 (12) (ranging)
 가 (12) CATV 가
 (12) CATV 가
 (20) CATV (12) () (M
 AC)
 2 (265) , (60) (12) DHCP DHCP()
 CATV (12) IP() DHCP (6
 0) , IP 가 , 가

2 (270) , (60) TIME TIME
TFTP TFTP() (12) CATV (12)
SNMP (12) / . SNMP
(12) CATV . SNMP
OCSIS }가 CATV { (12)
. D
가
DOCSIS .
가 (12)
가 , 가 (12) 가 가
가 가 CATV 가 가 가

2 (275) , (60) CATV (12) 가
(12) CATV (12) CATV
(12) , CATV (12) 가 가
(12) . 2 (280) .

3 DOCSIS 가
CATV (listening)
(12) . DOCSIS
(MIB) 가
(SNMP) . MIB ,
(1) 가 MIB MIB 3 (60)
. .

3 (200) (205) , 가
(12) CATV (60) (12) .
{ (12) }가 CATV
72) 가 (MIB PC(, 1
). (210) , (12) - DOCSIS PC
PC (12) PC
가 - DOCSIS ,

(215) , (60) (220) ,
 (205) PC 가 (60)
 (225) CATV (8dBmV DOCSIS) 54dBmV (58dBmV
 DOCSIS) 가 (205)
 CATV (, 3) SNMP ()
 (60) (215,220) (225) (215,2
 20) CATV () 가
 (,) SNMP SNMP
 , 1 (12)
 , RF 64 256 QAM() MPEG2
 . MPEG2 HTML()
 IP (15) (15) RF . MPEG
 (20) (25) (20) (25)
 MCNS (35) (30)
 (30) MCNS (35)
 (35)
 , Lee Messerschmidt " " (KI
 uwer Academic Press 1988) , (35) , MPEG2
 (60)
 (60) CATV (35) (35)
 CATV (60) (35)
 , (60) LAN
 가 (a)
 (parental) , (b) " - "
 , (c) , (d) (e)
 (65), (70) (72) PC
 (60) (65) (72) PC (70) (72) PC
 (condition)

(60) (82) USB (77) HPNA
 (35) () MAC . USB (82)
 USB LAN (75) (EMI/ESD)
 (80) , HPNA (77) HPNA LAN
 (62) (67)

(12) , (transmission power level)
 PC CATV (data upstream)
 (12) (60) , PC (72), (65) / (70)
) (35) RF (35) 16 QAM QPSK(4
 85), (87) (diplexer)(20) (10)
 (85) CATV
 가 (87) (12)

(12) USB (82) HPNA (77)
 , (12) (60) (75)
 (75) (82) (80) USB (35)
 (67) HPNA USB (60) (62) (77)

(60) / (90) 가
 (60) CATV (12)
 (60) (10) (12)
 (rate limit) (60)
 , CATV (72, 77 82) LAN
 (60) CATV (ranging communication)
 CATV (polling)

1 (12) 3 (60)
 가, (iterative adjustment) (monitorin
 g) , (threshold)

가

,가
가 .

(57)

1.

, (impaired) :

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3.

1 , , .

4.

1 , (SNMP; Simple Netwo
rk Management Protocol) ,

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5.

1 , , .

6.

5 , , .

7.

5 , .

8.

1
, (a) (b)

9.

1

10.

1 가

11.

1 (a) (b) (c)

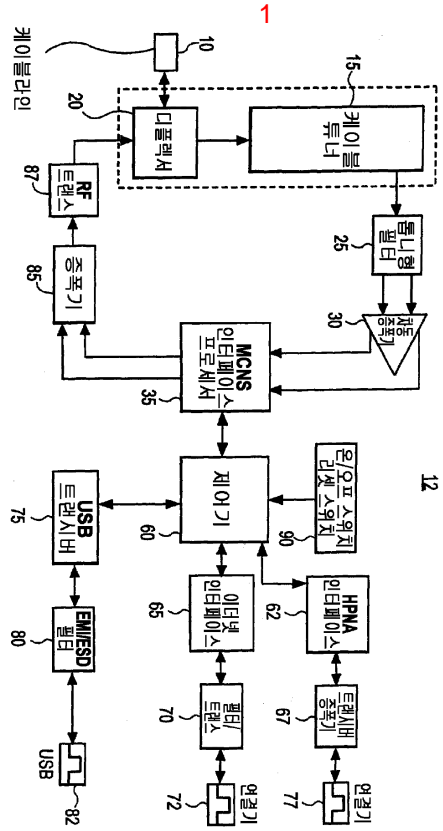
12.

11 (a) (b) (c)

13.

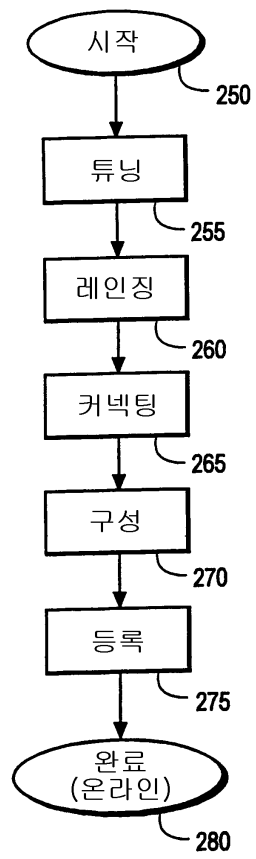
14.

13



12

2



3

