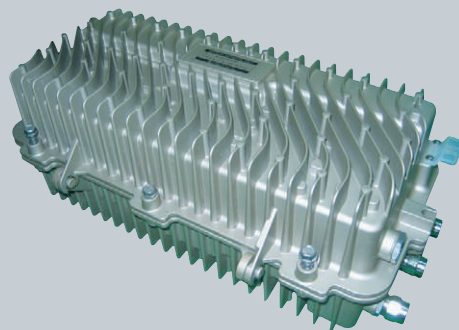


General Products Guide Line



DONGYANG TELECOM

Digital Network & HFC Network Solution

■ History

Years

- 1969.10** Established (Company name : DongYang Antennan Co.,Ltd.)
- 1981.09** Acquirement of type approval for 8 electrical appliances
- 1988.01** Established "Institute of Technology" approved by MOST
- 1989.04** Company name changed to DongYang Telecom Co.,Ltd.
- 1991.06** Started operation of A-san Factory
- 1991.07** Licensed 1st grade of Transmission construction
- 1991.07** Acquirement of Certificate for ISO9002
- 1998.11** Beginning to supply HFC equipments to Thrunet first in Korea
- 2000.07** Listed in KOSDAQ
- 2002.07** Acquirement of KSA/ISO Integrated Quality Control Management System
- 2005.09** Started operation of R&D center in SongDo Techno Park
- 2007.04** Acquirement of KSA/ISO Integrated Environmental Management System
- 2007.08** Approval for data broadcasting business to use broadcasting channel
- 2007.10** Acquirement of patent right for Communication cable detector
- 2009.01** Acquirement of patent right for wireless control system of optical communication repeater
- 2011.04** Merged with Kyung-In Electronics(PCB/TRANSFORMER BIZ)
- 2012.01** Selected as digital conversion company by Korea Communications
- 2013.04** Development of Hybrid FTTH System(RFoG, RFOverlay System)
- 2014.05** Development of FTTH overlay System(HON System)
- 2014.10** Merged with Vissem Electronics Co.,Ltd.

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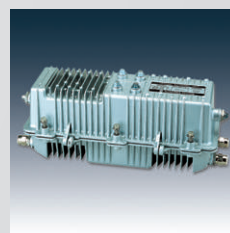
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Philosophy

Pursuit of Innovation

Respect for Humanity

Contribution by Business

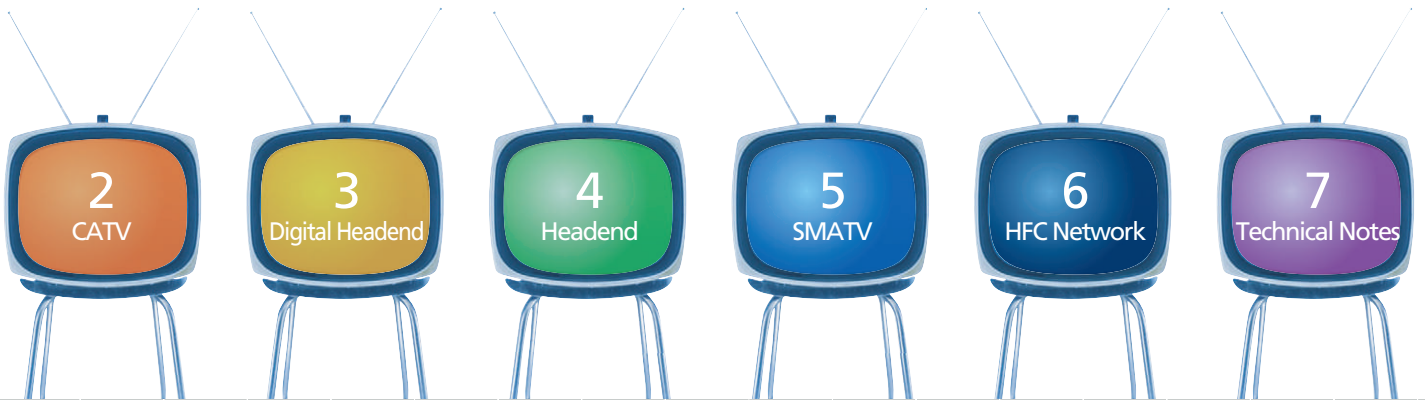


Business Area

■ HFC ■ CATV ■ SMATV ■ Wireless Communication ■ Satellite Broadcasting



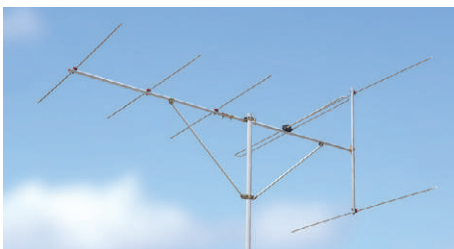
DongYang Telecom Product Steps



Master Antenna

APPEARANCE

FM-6A



FEATURES

- Easy to receive VHF signal by freely adjusting the direction of antenna (omni-directional) regardless of the direction of a VHF transmitting station
- To send U/V signal to TV with one coaxial cable from the waterproof feeder which has built-in U/V mixer.
- To prevent from degrading features of antenna due to the waterproof feeder
- Not affected by weather or influence of salt in the shore.

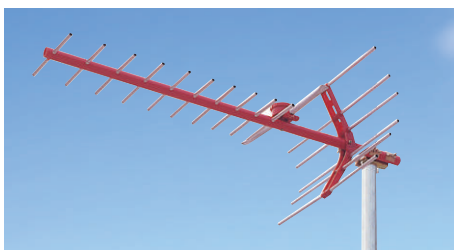
APPEARANCE

Model	Elements	Channel(CH)	Impedance(Ω)	Gain	VSWR	Half Power Width(Degrees)	Front-to-Back ratio
FM-6A	6	Specified 6MHz of FM Band	75/300	7.0	1.5	± 32	15

Home Antenna

APPEARANCE

UL1438-12CR, UM3660-12CR



FEATURES

- Easy to receive UHF signal by freely adjusting the direction of antenna (omni-directional) regardless of the direction of a UHF transmitting station
- To send U/V signal to TV with one coaxial cable from the waterproof feeder which has a built-in U/V mixer.
- To prevent from degrading features of antenna due to the waterproof feeder
- Not affected by weather or influence of salt in the shore.

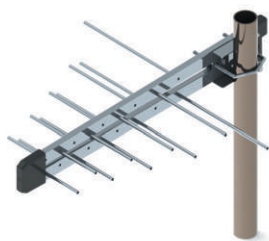
PERFORMANCE

Model	Elements	Channel (CH)	Impedance (Ω)	Gain		VSWR		Half Power Width(Degrees)		F/B ratio	
				L	H	L	H	L	H	L	H
UL1438-12CR	12	14~38	75/300	8.0~12.0		2.5		± 26.0		15~23	
UM3660-12CR	12	36 ~ 60	75/300	8.5~12.0		2.5		± 23.0		15~23	

Digital Antenna

APPEARANCE

UA-20S



FEATURES

- To receive DTV broadcast everywhere through the country as a broadband antenna
- Available to use in weak field strength area
- Made of stainless steel with excellent durability
- Light and small to easily install on the roof both in rural and urban areas
- To fix the antenna with bracket and U-type bolt attached to the boom
- Easy to install by using F-type connector

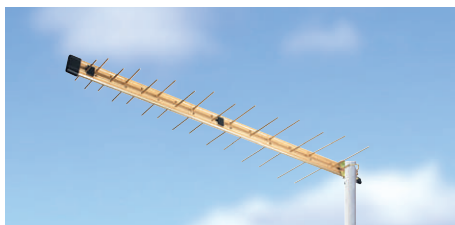
PERFORMANCE

Description	Unit	Specification
Frequency range	MHz	470~806(14~69ch)
Gain	dB	≥ 6
VSWR		≤ 2
Half Power Width	degrees	65 ± 5
F/B ratio	dB	20~27
Impedence	Ω	75
Element	ea	9
Size	mm	430(W)x358(D)x55(H)
Weight	g	900
Material		Stainless

Digital Band Antenna

APPEARANCE

UA-30, UA-30S



FEATURES

- Specifically designed for digital broadcast to receive everywhere through the country as a broadband high gain antenna
- Light materials of aluminium
- Easy to connect cable with F-type output connector
- Easy to install on the roof as a log periodic antenna

PERFORMANCE

Frequency range	Gain	F/B ratio	Half Power Width(degrees)	VSWR	Elements	Boom length	Impedence	Connector type
470 MHz ~862MHz	7~9dB	25dB	$67^\circ \pm 3$	≤ 1.5	30	1,120cm	75 Ω	F-Type

Mixer

APPEARANCE

UV-40S



FEATURES

- To mix VHF(High/Low) signal with UHF signal received from antennas
- Excellent performance and easy to install
- Possible to mount on the wall or to fix to the antenna pole

PERFORMANCE

Model	Channel (CH)			Impedance (Ω)		VSWR		Insertion Loss (dB)		Out-of-Band Rejection(dB)	
	V-L	V-H	UHF	IN	OUT	VHF	UHF	VHF	UHF	VHF	UHF
7DM-67S	2~6	7~13	-	75	75	1.6	-	1.0	-	30	-
UV-40S	2~13		14~60	75	75	1.6	1.8	1.0	1.5	25	25

Digital Antenna

APPEARANCE

DTA-200



FEATURES

- Specifically designed for terrestrial digital broadcasting
- To use in houses with wide window and wide space buildings
- High gain and directional to receive signals from long distance transmitting stations
- Good design, high performance and quality
- Log periodic antenna for Indoor and outdoor use and wideband high gain performance

PERFORMANCE

Specification	Frequency Range	Gain	VSWR	Size(W×D×Hmm)
DTA-200	470 ~ 806MHz	6dBi	≤2.0	321×262×166

Amplifier

APPEARANCE

CA-30B



FEATURES

- High gain of 31dB(forward)
- High output of 105dBmV(77 forward channels) adopting high linearity hybrid IC,
- Easy inspection and maintenance through output monitoring terminal
- Power consumption : $\leq 10W$
- Dimension : 172mm(W) x 150.5mm(D) x 53.7mm(H)

PERFORMANCE

Description	Unit	Specification
Frequency Range	MHz	54~806
Max Transmission	CH	77
Impedence	Ω	75
Max Output Level	dBm V	45
Max Gain	dB	0 ~ -35
Gain Control	dB	≥ -20
Slope Control Range	dB	≥ -20
Noise Figure	dB	≤ 10
Cross Modulation	dB	≤ -60
Return Loss	dB	≤ -10
Hum modulation	dB	≤ -60

Home Booster

APPEARANCE

TB-USW33



FEATURES

- Bright and clear color due to low noise figure($\leq 3.5dB$) even in weak field strength area(33dB)
- 75 Ω cable enables to distribute broadcast signals to each rooms in a house
- Adopting Gain Control Circuit in VHF circuit to protect spurious signal and cross modulation
- Acquired type approval to use safely according to the Electrical Appliances Safety Control Act

PERFORMANCE

Model	Channel (CH)	Gain (dB)	Gain Control Range (dB)	Noise Figure	Rated Output Level (dB)	Proper Input Level (dB)	Impedance(Ω)		VSWR	Power (V)	Remarks
							In	Out			
TB-USW33	14~60	24~28	-	3~4	95	40~70	75	75	2.5	AC 220V	"

Digital Booster

APPEARANCE

DTB-28D



FEATURES

- To simultaneously use both general TV and HDTV by receiving and amplifying both analog and digital signals
- To provide bright and clear color due to low noise figure of LNB in weak field strength area
- 75Ω 5C cable enables to distribute broadcast signals to each rooms in a house
- Designed to use for VHF and UHF band and adopted adjustable gain control circuit to prevent spurious signal and cross modulation caused from excessive input
- Power : AC 220V

PERFORMANCE

Description	Specification		Description	Specification	
	VHF	UHF		VHF	UHF
Frequency Range	54~216MHz	470~806MHz	Frequency Range	54~216MHz	470~806MHz
No. of Max Transmission	≥ 20 Channels		Rated Output Level	95dBuV	
Impedance	75Ω		CSO	≥ 55 dBc	
Max Gain	25dB	27dB	CTB	≥ 55 dBc	
Return Loss	-12dB		X-MOD	≥ 55 dBc	
Gain Control Range	0~10dB		HUM Modulation	≥ 63 dBc	
Noise Figure	≤ 10dBuV		Power Rating	4W	

Distributor (Mini-Type)

APPEARANCE

CA-MD872



FEATURES

- Stable frequency band characteristics in 5.75~1,000MHz
- Excellent durability with the materials of Al-diecasting
- Easy to install due to compact size

PERFORMANCE

Model	Frequency Range(MHz)	Impedance (Ω)	No. of Outputs	Return Loss (dB)	Insertion Loss (dB)	Out to Out Isolation	Remarks
CA-MD872	5.75 ~ 1,000	75	2	≥15	≤4.6	≥20	

Band Pass Filter

APPEARANCE

B.P.F(Specified frequency band)



FEATURES

- To remove unnecessary frequency and to pass specified frequency band among received multi channels from antenna
- Great out-of-band attenuation by using high quality components

PERFORMANCE

Model	Frequency Range(MHz)	Insertion Loss	VSWR
B.P.F-FM	88~108	≤ 4dB	2
B.P.F-Digital	on-demand		
Frequency Range	54~750MHz		
Impedance	75Ω		

Surge Protector

APPEARANCE

CSP-87



FEATURES

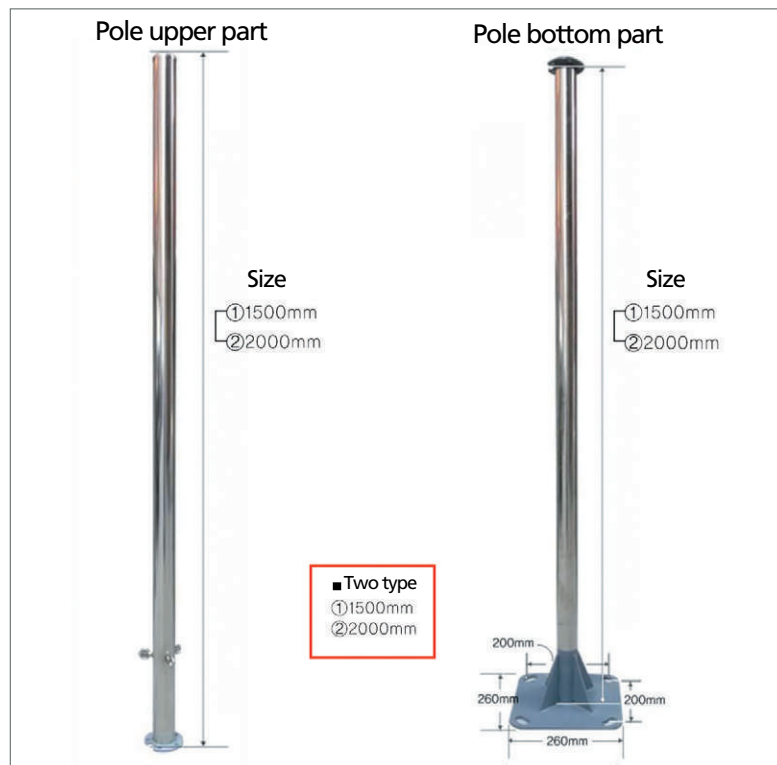
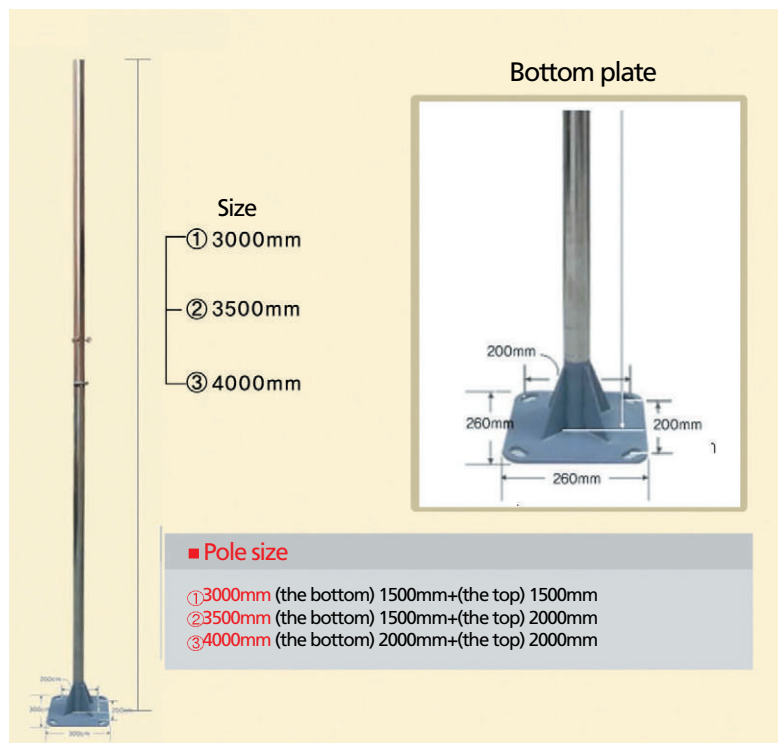
- Highly effective to prevent surge voltage by adopting low loss Surge Arrestor
- To prevent inductive voltage surge inputted by lightning through the CATV/MATV system line
- For indoor and outdoor use

PERFORMANCE

Description		Specification	Remarks
Frequency Range		5~864MHz	
Impedance		75 Ω	
Insertion Loss		$\leq 1.2\text{dB}$	
Return Loss		$\geq 15\text{dB}$	
Insulation Resistance		$\geq 1,000\Omega$	
DC Discharge Voltage		DC 180~300V	
Insulation Voltage		AC 1,000V(1 Minute)	
Noise Figure		$\leq -30\text{dBmV}$	
Impact Current	DC 100V/ μs	$\leq 700\text{V}$	
Discharge Voltage	DC 1000V/ μs	$\leq 900\text{V}$	

Stainless Steel (SUS) MATV Antenna Pole (A-type)

APPEARANCE

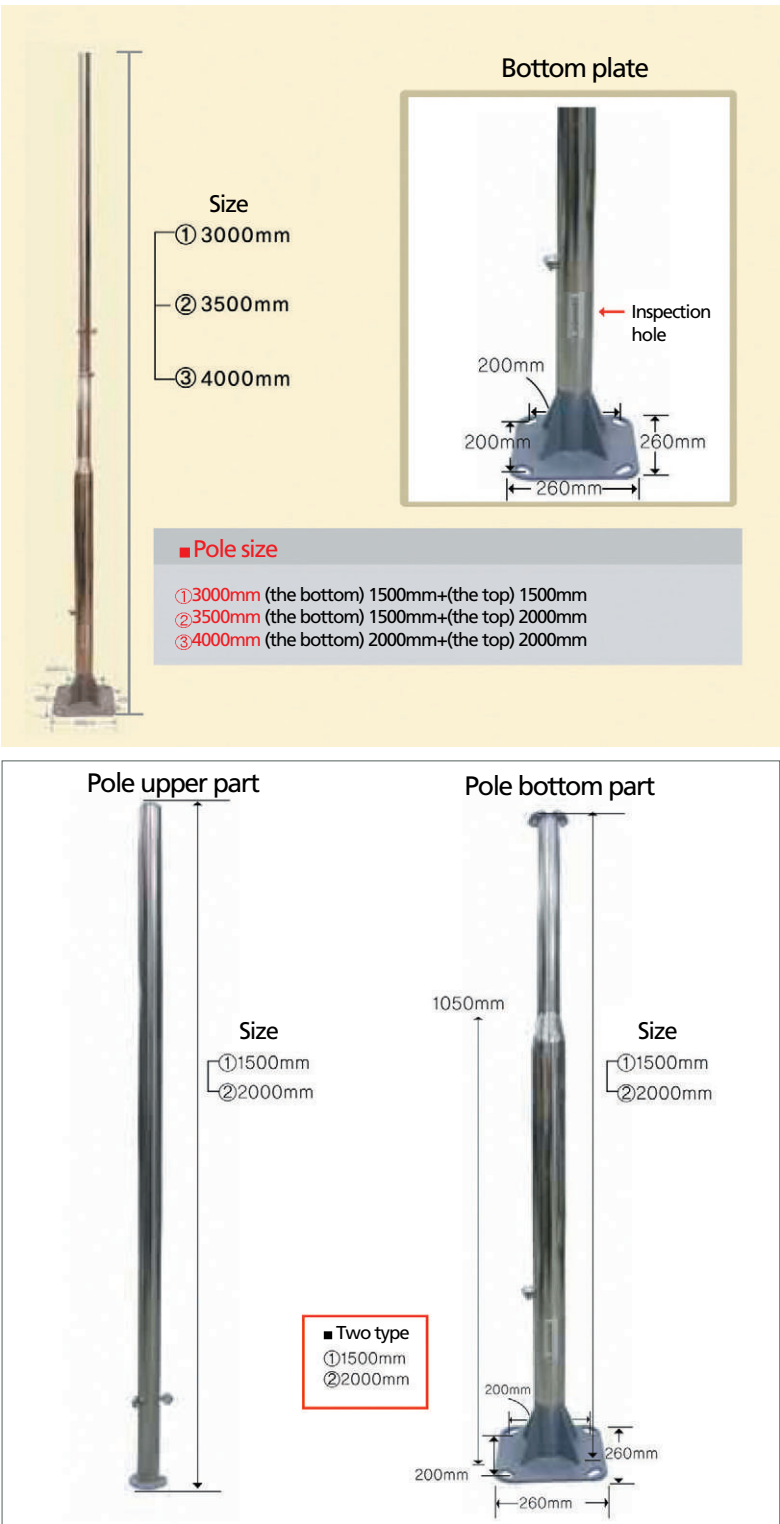


SPECIFICATION

No. of pipe	Material	Height	outer dia.(mm)	Thickness of pipe(mm)	Base Plate		
					Thickness(mm)	size(mm)	distance between holes
2	Stainless Steel(SUS)	3m/3.5m /4m(optional)	upper : 50 lower : 50	1.2	6	260x260	200mm

Stainless Steel (SUS) MATV Antenna Pole (B-type)

APPEARANCE



SPECIFICATION

No. of pipe	Material	Height	outer dia.(mm)	Thickness of pipe(mm)	Base Plate		
					Thickness(mm)	size(mm)	distance between holes
2	Stainless Steel(SUS)	3m/3.5m /4m(optional)	upper:50 lower:76	1.2	6	260x260	200mm

HFBT Cable

APPEARANCE

5C-HFBT, 7C-HFBT, 10C-HFBT,



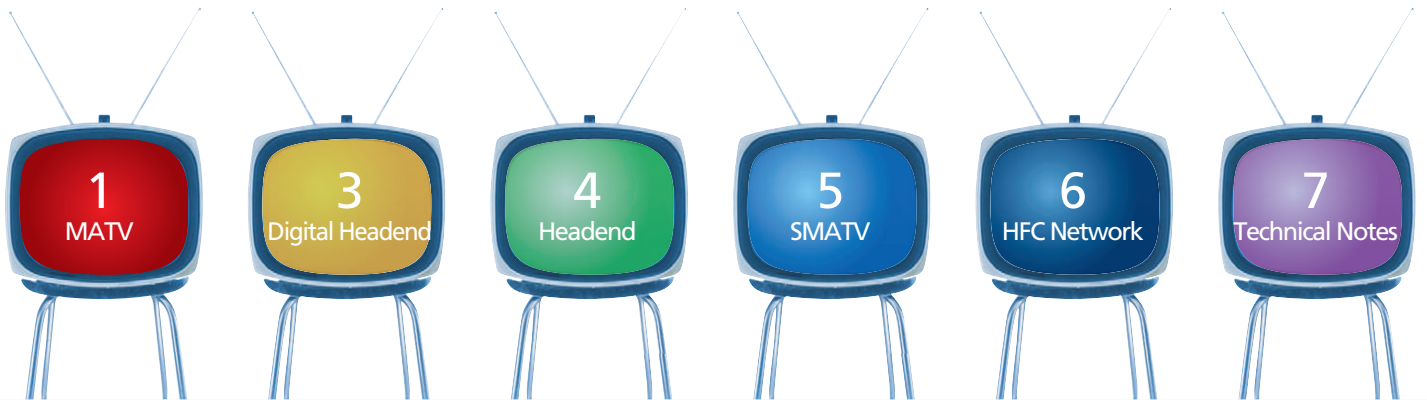
FEATURES

- Insulated cable to use for equipments for broadcasting communication and 2-way internet communication
- Low loss by adopting high foamed polyethylene insulation
- Easy to handle due to the flexibility
- Triple shielding with excellent shielding characteristics

PERFORMANCE

Classification		Unit	5C-HFBT	7C-HFBT	10C-HFBT
Frequency Range		MHz	5.75~864	5.75~864	5.75~864
SWR		dB	1.06	1.18	1.19
Impedance		Ω	75	75	75
Loss	10 MHz	dB / Km	23.81	15.7	12.0
	50 MHz	dB / Km	47.2	30.7	25.4
	150 MHz	dB / Km	77.2	55.1	42.2
	250 MHz	dB / Km	98.9	71.0	54.0
	350 MHz	dB / Km	117.1	86.2	65.7
	450 MHz	dB / Km	137.0	95.9	73.4
	750 MHz	dB / Km	178.0	124.3	96.2
	864 MHz	dB / Km	195.0	133.7	106.2

DongYang Telecom Product Steps



Indoor Amplifier

APPEARANCE

CA-8730D



FEATURES

- 2-way broadband amplifier for CATV, VHF and UHF with stable frequency characteristics and high output
- To separately amplify forward and reverse and to expand frequency band by changing equalizer
- Easy inspection and installation through output monitoring terminal
- Adopting excellent aluminium heat sink plate
- Dimension : 170mm(W) × 247mm(D) × 63.5(H)

PERFORMANCE

Classification	CA-8730D		Remarks
	Forward	Reverse	
Frequency Range(MHz)	54~864	5.75~41.75	
Reference Output(dBmV)	≥45	≥37	
Frequency Response(dB)	±1.0	±0.75	
Max Gain(dB)	≥31	≥20	
Gain Control Range(dB)	0~18	0~18	
Slope Control Range(dB)	0~15	0~15	
Composite Triple Beat(CTB)(dB)	≤-55	-	Note) 1, 2, 3
Composite Second Order(CSO)(dB)	≤-55	≤-63	Note) 1, 2, 3
X- Modulation(dB)	≤-55	≤-63	Note) 1, 2, 3
Noise Figure(dB)	≤10	≤10	Note) 1
Hum Modulation(dB)	≤-63	≤-63	Note) 1
Return Loss(dB)	≥14	≥15	
Power Rating(W)	18		
Power(V)	AC220V		
Operating Temperature	-10 ~ 50°C		

- NOTE**
1. These result shall be measured in the range of the required gain and the output level(but, the noise figure index measured in the maximum gain)
 2. Reverse - NTSC 6channels,
Forward -NTSC 77channels(CA-30K)
NTSC 110channels(CA-830D)
 3. Reverse · Forward Output Tilt : 0dB

Indoor Amplifier

APPEARANCE

CA-8730P



FEATURES

- High gain of 31dB(forward)
- Adopting plug-in type ATT to control reverse input level
- Easy inspection and installation through output monitoring terminal
- High output characteristics(108dBuV, on the basis of forward NTSC 110 channels) by using high linearity hybrid IC
- Power consumption : ≤ 16W
- Dimension : 152.2mm(W) × 210mm(D) × 53.5(H)

PERFORMANCE

Classification	Reverse	Forward	Remarks
Frequency Range	5.75~41.75MHz	54~864MHz	A-Type
	5.75~65MHz	88~864MHz	B-Type
Reference Output(dBmV)	≥37dbmV	≥45	
No. of Max Transmission C	≥6 Channels	≥110 Channels	
Impedence	75 Ω	75 Ω	
Max Gain	20 dB	30 dB	
Gain Control Range	0 ~ -18 dB	0 ~ -18 dB	
Slope Control Range	0 ~ -15 dB	0 ~ -15 dB	
Composite Triple Beat(CTB)	≤-55 dB	-	
Composite Second Order(CSO)	≤-55 dB	≤-68 dB	
X- Modulation	≤-55 dB	≤-68 dB	
Noise Figure	≤10 dB	≤-10 dB	
Hum Modulation	≤- 63 dB	≤-66 dB	
Return Loss	≥15 dB	≥-14 dB	
Power Rating(W)	18		
Power	AC 220V		
Operating Temperature	-10 ~ 40℃		

Indoor Amplifier

APPEARANCE

CA-1030D, CA-1030P, CA-G35PM



FEATURES

CA-1030D, CA-1030P

- High gain of 30dB(forward)
- Adopting plug-in type ATT to control reverse input level
- Easy inspection and installation through output monitoring terminal
- High output characteristics(105dBmV, on the basis of forward 110 channels) by using high linearity hybrid IC
- Power consumption : $\leq 16W$

CA-G35PM

- High gain of 36dB(forward)
- Adopting excellent aluminium heat sink
- Easy inspection and installation through output monitoring terminal
- High output characteristics(115dBmV, on the basis of forward 110 channels) by using high linearity hybrid IC
- Power consumption : $\leq 20W$

PERFORMANCE

Classification	CA-1030D		CA-1030P		CA-G35PM		Remarks
	Forward	Reverse	Forward	Reverse	Forward	Reverse	
Frequency Range(MHz)	54~1002	5.75~41.75	A,B	A,B	A,B,C,D	A,B,C,D	
Reference Output(dBmV)	≥ 45	≥ 37	≥ 45	≥ 37	≥ 45	≥ 37	
Frequency Response(dB)	± 1.0	± 0.75	± 1.0	± 0.75	± 1.0	± 0.75	
Max Gain(dB)	≥ 30	≥ 20	≥ 30	≥ 20	≥ 36	≥ 20	
Gain Control Range(dB)	0~18	0~18	0~18	0~18	0~18	0~18	
Slope Control Range(dB)	0~15	0~15	0~15	0~15	0~15	0~15	
Composite Triple Beat(CTB)(dB)	≤ -55	-	≤ -55	-	≤ -55	-	Note) 1, 2, 3
Composite Second Order(CSO)(dB)	≤ -55	≤ -63	≤ -55	≤ -63	≤ -55	≤ -63	Note) 1, 2, 3
X- Modulation(dB)	≤ -55	≤ -63	≤ -55	≤ -63	≤ -55	≤ -63	Note) 1, 2, 3
Noise Figure(dB)	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	Note) 1
Hum Modulation(dB)	≤ -63	≤ -63	≤ -63	≤ -63	≤ -63	≤ -63	Note) 1
Return Loss(dB)	≥ 14	≥ 15	≥ 14	≥ 15	≥ 14	≥ 15	
Power Rating(W)	22		18		18		
Power(V)	AC220V		AC220V		AC220V		
Operating Temperature	$-10 \sim 40^{\circ}\text{C}$		$-10 \sim 40^{\circ}\text{C}$		$-10 \sim 40^{\circ}\text{C}$		

NOTE 1. These result shall be measured in the range of the required gain and the output level(but, the noise figure index measured in the maximum gain)

2. Reverse - NTSC 6channels,

Forward - NTSC 110channels

3. Reverse · Forward Output Tilt : 0dB

	Forward	Reverse		Forward	Reverse
A	54~1002	5.75~41.75	C	104~1002	5.75~85
B	88~1002	5.75~65	D	216~1002	5.75~174

Mini Trunk Amplifier

APPEARANCE

MTA-830P, MTA-830D



FEATURES

- Perfect water proof with the aluminum diecasting housing.
- Easy system configuration by plug-in modules.
- High performance by adopting hybrid Amp.
- Free from surge by adopting surge protection circuit.

PERFORMANCE

Classification		Forward	Reverse	Remarks
Frequency Range[MHz]		54 ~ 870	5 ~ 42	
Reference Output	TA	≥ 45	≥ 38	Note)2
Level[dBmV]	DA	≥ 41	≥ 34	
Frequency Response[dB]		± 0.75	± 0.75	
Operational	TA	≥ 31	≥ 18	Note)2
Gain[dB]	DA	≥ 28	≥ 15	Note) 1, 3, 4
Composite Triple Order[dB]		≤ -65	≤ -64	Note) 1, 3, 4
Composite Second Order[dB]		≤ -65	≤ -64	Note) 1, 3, 4
Cross Modulation[dB]		≤ -65	≤ -68	Note) 1, 3, 4
Hum Modulation[dB]		≤ -63	≤ -63	Note) 1
Noise Figure[dB]		≤ 10	≤ 10	
Return Loss[dB]		≥ 14	≥ 15	
Power(W)		AC 40~90V/50~60Hz		

- NOTE**
1. These result shall be measured in the range of the required gain and the the output level(but, the noise figure index measured in the maximum gain.
 2. Optional ouput director.(TA : Directional coupler module, DA : Distributor module).
 3. Reverse – NTSC 6 channels, Forward – NTSC 77 channels.
 4. Forward Tilt : 10dB.

Distributors (Shelf Mount Type)

APPEARANCE

RCD-2FTP, 4FTP, 8FTP



FEATURES

- Easy to install in 19-inch Standard rack
- Easy to test as the test terminal is located in front.
- To install maximum 17 units of 2-way or 4-way distributors

PERFORMANCE

Description	Unit	Specification	Remarks
Frequency Range	MHz	5~1000	
Frequency Response	dB	± 0.6	
Return Loss	dB	≥ 16	
Port to Port Isolation	dB	≥ 30	
Insertion Loss	dB	$\leq 4.2 / 9 / 12$	
Test Port Level	dB	-20	
Connector Type		F Type	
Dimension	mm	222(W) x 127(H) x 180.5(D)	

Distributors (Shelf Mount Type)

APPEARANCE

RCDP-2FTP, 4FTP, 8FTP / Frame:RDMF-1000A



FEATURES

- Stable frequency characteristics at the frequency range of 5~1000MHz
- Easy to install in 19-inch Standard rack
- To adjust irregular signal stable with pad

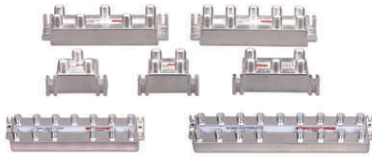
PERFORMANCE

Description	Unit	RCDP-2FTP	RCDP-4FTP	RCDP-8FTP
Frequency Range	MHz	5~1000	5~1000	5~1000
Frequency Response	dB	± 0.6	± 0.6	± 0.6
Return Loss	dB	≥ 16	≥ 16	≥ 16
Port to Port Isolation	dB	≥ 30	≥ 30	≥ 30
Insertion Loss	dB	≤ 5.6	≤ 9	≤ 13
Monitor Level	dB	-20	-20	-20
Connector Type	-	F Type	F Type	F Type

Distributor

APPEARANCE

CA-D872, CA-D873, CA-D874, CA-D875,
CA-D876, CA-D878, CA-D8712, CA-D8716



PERFORMANCE

Model	Frequency Range(MHz)	Impedance (Ω)	No. of Outputs	Return Loss (dB)	Insertion Loss (dB)	Out to Out Isolation	Remarks
CA-D872	5~1000	75	2	≥ 15	≤ 4.6	≥ 20	
CA-D873	5~1000	75	3	≥ 15	≤ 7.8	≥ 20	
CA-D874	5~1000	75	4	≥ 15	≤ 8.2	≥ 20	
CA-D875	5~1000	75	5	≥ 15	≤ 11.0	≥ 20	
CA-D876	5~1000	75	6	≥ 15	≤ 11.0	≥ 20	
CA-D878	5~1000	75	8	≥ 15	≤ 13.0	≥ 20	
CA-D8712	5~1000	75	12	≥ 15	≤ 16.0	≥ 20	
CA-D8716	5~1000	75	16	≥ 15	≤ 17.0	≥ 20	

FEATURES

- Stable frequency characteristics at the frequency range of 5~1000MHz
- Excellent durability with the materials of Al-diecasting
- Dimension : CA-D872, D873 : 53.6(W) $\times$ 18(H) $\times$ 37.5(D)
CA-D874, D875 : 76(W) $\times$ 18(H) $\times$ 37.5(D)
CA-D876, D878 : 120.4(W) $\times$ 18(H) $\times$ 37.5(D)
CA-D8712 : 178(W) $\times$ 29(H) $\times$ 46.5(D)
CA-D8716 : 226(W) $\times$ 29(H) $\times$ 46.5(D)

Directional Coupler

APPEARANCE

CA-C181, CA-C182
CA-C184, CA-C188



PERFORMANCE

Model	Frequency Band (MHz)	Impedance (Ω)	Return Loss (dB)	Insertion Loss (dB)	Isolation Out Tap (dB)	Isolation Tap-Tap (dB)	Error Tap Value (dB)
CA-C181	8dB	5 ~ 1000	≥ 15	≤ 3.2	≥ 22	≥ 20	± 1.5
	11dB			≤ 2.3	≥ 24		
	14dB			≤ 1.7	≥ 27		
	17dB			≤ 1.5	≥ 28		
	20dB			≤ 1.3	≥ 31		
CA-C182	8dB	5 ~ 1000	≥ 15	≤ 4.6	≥ 22	≥ 20	± 1.5
	11dB			≤ 3	≥ 24		
	14dB			≤ 2	≥ 26		
	17dB			≤ 1.3	≥ 31		
	20dB			≤ 1.3	≥ 31		
CA-C184	11dB	5 ~ 1000	≥ 15	≤ 4.6	≥ 22	≥ 20	± 1.5
	14dB			≤ 3	≥ 25		
	17dB			≤ 2	≥ 27		
	20dB			≤ 1.6	≥ 30		
CA-C188	14dB	5 ~ 1000	≥ 15	≤ 4.8	≥ 23	≥ 20	± 1.5
	17dB			≤ 3	≥ 26		

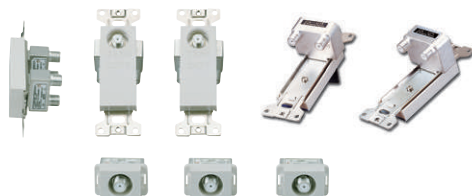
FEATURES

- Stable frequency characteristics at the frequency range of 5~1000MHz
- Excellent durability with the materials of Al-diecasting
- To split signals in transmission lines
- Tap loss : 8~20dB (optional, 3 dB steps)
- Dimension : CA-C181, C182 : 53.6(W) $\times$ 18(H) $\times$ 37.5(D)
CA-C184 : 76(W) $\times$ 18(H) $\times$ 37.5(D)
CA-C188 : 120.4(W) $\times$ 18(H) $\times$ 37.5(D)

TV Wall Outlet

APPEARANCE

CA-U81,U8R, U81S, MU81,MU8R



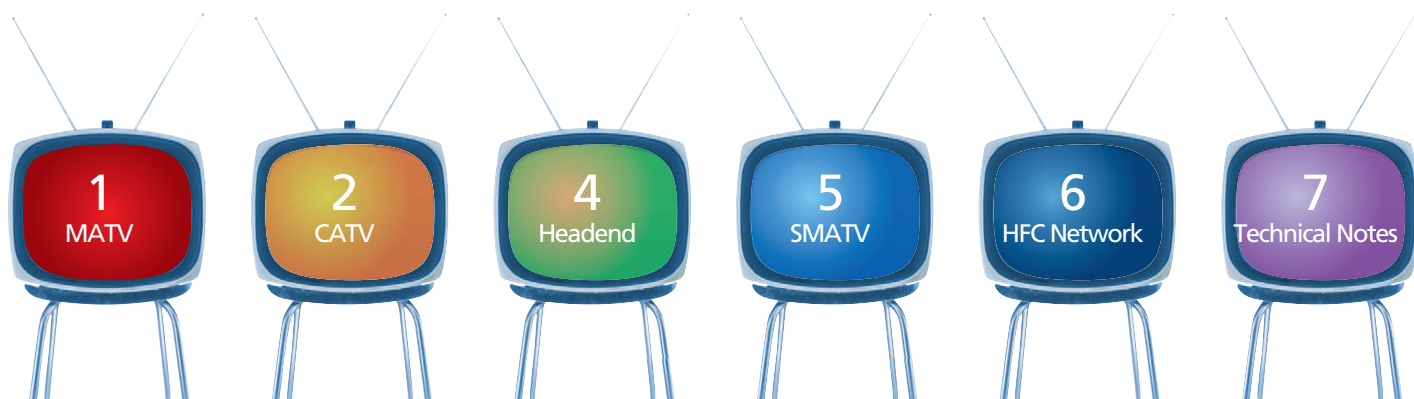
FEATURES

- Stable frequency characteristics at FM, VHF, UHF and CATV band
- Designed for compact size to install easily
- 2-way wall outlet with tap loss ranging 1~32dB(optional, 1dB, 5dB and every 3dB steps up to 32dB)

APPEARANCE

Model	Frequency Range (MHz)	Impedance (Ω)	No of TV Outs	Return Loss (dB)	TV Tap Loss (dB)	Insertion Loss (dB)	Isolation TV Out To TV(dB)	Isolation BR TO To Out(dB)
CA-U81	5.75~870	75	1	≥16	8~23	0.8~2.0	22~35	≥20
CA-U8R					3.5~20	-	-	-
CA-U81S					11~23	0.8~2.1	23~35	≥20
CA-MU81					11~23	0.8~2.1	23~35	≥20
CA-MU8R					3.5~20	-	-	-

DongYang Telecom Product Steps



8-VSB Remodulator

APPEARANCE

DSP-R300



FEATURES

- Designed to re-transmit ATSC DTV signal.
- Available to use in terrestrial DTV network, terrestrial digital broadcasting system, MATV system, CATV system and the like.
- To consist of 8-VSB DTV signal receiving , 8-VSB modulation and RF up-converter
- To support VHF/UHF frequency band to re-transmit DTV signal

PERFORMANCE

Modulator	
Standard(Scheme)	ATSC A,53(8-VSB)
Symbol Rate	10,762MSps
Bit Rate	19,392Mbps
MER	>34dB(without Eq.)
Channel Bandwidth	6MHz
RF In/Out	
Input Frequency Range	54~864MHz
Input Level	35~85dBμV
Output Frequency Range	54~864MHz
RF Output Level	100~115dBμV
Spurious	<-60dB
Frequency Tolerance	<±5ppm
Phase noise	Typical -90dB@10KHz
Frequency Response	<±0,5dB
Group Delay	<±50ns
Return Loss	>15dB
Connector Type	75Ω F-type Connector
Mechanical and Power	
Power Input Voltage	AC 90~260V
Operating Temperature	0~60° C
Storage Temperature	-40~70° C
Vibration and Shock	In accordance with MIL-STD-810D
Dimensions	483 x 44 x 347(WxHxDmm)
Rack Mount	1RU(19" rack)
Power Consumption	35W Max.
Control and Monitoring	
Display	Graphic LCD Display
6 Buttons	Up, Down, Left, Right, Esc, Enter

SD Encoder & 8-VSB Modulator

APPEARANCE

DYT-AT100



FEATURES

- Designed to support for MPEG-2 SD Encoding and to transmit ATSC DTV signal
- To consist of MPEG-2 SD Encoder, 8-VSB Modulation and RF up-converter
- To support VHF/UHF frequency band to re-transmit DTV signal

PERFORMANCE

Modulator	
Standard(Scheme)	ATSC A,53(8-VSB)
Symbol Rate	10,762MSps
Bit Rate	19,392Mbps
MER	>34dB(without Eq.)
Channel Bandwidth	6MHz
RF In/Out	
Input Interface	Component, S-Video, CVBS, ASI
Output Frequency Range	54~864MHz
RF Output Level	100~115dBμV
Spurious	<-60dB
Frequency Tolerance	<±5 ppm
Phase noise	Typical -90dB@10KHz
Frequency Response	<±0,5dB
Group Delay	<±50ns
Return Loss	>15dB
Connector Type	75Ω F-type Connector
Mechanical and Power	
Power Input Voltage	AC 90~260V
Operating Temperature	0~60° C
Storage Temperature	-40~70° C
Vibration and Shock	In accordance with MIL-STD-810D
Dimensions	483 x 44 x 347(WxHxDmm)
Rack Mount	1RU(19" rack)
Power Consumption	35W Max.
Control and Monitoring	
Display	Graphic LCD Display
6 Buttons	Up, Down, Left, Right, Esc, Enter

8-VSB Remodulator

APPEARANCE

DSP-R1000



FEATURES

- Designed to re-transmit ATSC DTV signal.
- Available to use in terrestrial DTV network, terrestrial digital broadcasting system, MATV system, CATV system and the like.
- To consist of 8-VSB DTV signal receiving , 8-VSB modulation and RF up-converter
- To support VHF/UHF frequency band to re-transmit DTV signal

PERFORMANCE

	Description	Specification
Modulator	Standard (Scheme)	ATSC A.53 (B-VSB)
	Symbol Rate	10.762MSps
	Bit Rate	19.392Mbps
	MER	>34dB (Without Eq.)
	Channel Bandwidth	6MHz
RF In/Out	Input/Output Frequency Range	54~864MHz
	Input Level	35~85dBmV
	RF Output Level	100~115dBmV
	Spurious	< -60dB
	Frequency Tolerance	< ± 5 ppm
	Phase noise	Typical -90dB@10KHz
	Frequency Response	< ± 0.5 dB
	Group Delay	< ± 50 ns
	Return Loss	> 15dB
Mechanical and power	Power Input Voltage	AC 90~260V
	Operating Temperature	0~60 °...
	Storage Temperature	-40~70 °...
	Vibration and Shock	In accordance with MIL-STD-810D
	Dimensions	483(W) °ø 44(H) °ø 347(D)
	Rack Mount	1RU (19°± RACK)
	Power Consumption	35W Max.

HD Encoder & 8-VSB Modulator

APPEARANCE

DYT-HD200



FEATURES

- Designed to modulate inputted digital or analogue video and audio signals into the 8-VSB(ATSC) and transmit into RF signal.
- To support HD or SD signal input
- Boot time : ≤ 10 seconds
- Automatic detection of input signal type and resolution

PERFORMANCE

Item		Function	Specification
Input		Video	Component, HDMI, CVBS HD-SDI(Optional)
		Audio	Stereo, Embedded Audio
Encoding	Video	Encoding Format	MPEG-2 MP@HL
		Encoding Size	1080i / 720p / 480p / 480i
		Encoding Rate	5~18Mbps
		Chroma Format	4:2:0
		Latency Time	500ms 400ms
	Audio	Encoding Format	MPEG-1 L2 Dolby AC3 2.0
		Sampling Rate	48KHz
		Encoding Rate	192Kbps
Output	RF	Modulation	8-VSB
		MER	≥40dB(EQ : off)
		Group Delay	≤20dB
		Frequency Range	50MHz~870MHz
		Phase Noise	VHF: ≤-110dB/Hz, UHF: ≥-105dB/Hz
		Output Level	0dBm ± 2dBm
		Impedance	75 Ω
		Level Control	0~20dB
		Return Loss	≥15dB
		Spurious	≤-60dB
		Frequency Tolerance	≤± 5ppm
		Frequency Response	±0.5dB
	Power Requirements		AC 220V / 60Hz
General	Power Consumption		≤40W
	Dimensions (W * H * D mm)		433*44*280

Digital to Analog Modulator

APPEARANCE

TDA-900



FEATURES

- To convert digital terrestrial signal into analog TV signal
- To consist of digital receiver and Modulator in a unit
- Available to mount in 19-inch standard rack
- Convenient user environment of automatic channel search
- Input channel : Ch.2~Ch.69
- Output channel : Ch.2~Ch.69, CATV Ch.2~Ch.117

PERFORMANCE

Description		Specification			
		Unit	MIN	TYP.	MAX
Video Signal	Input Level	Vp-p		1	
	Differential Gain	%		5	
	Differential Phase	Deg		5	
	Signal to Noise Ratio	dB	50		
Audio Signal	Input Level	Vp-p		2.5	
	Harmonic Distortion	%			0.5
	Audio Frequency Response	dB	-0.5		0.5
	Impedance	Ω		600	
	Audio over Modulation	KHz	23		27
RF Output	Output Frequency	CH	CATV : CH02 CH117, UHF : CH02 CH69 (55~801MHz)		
	Video Signal Output Level	dB _{μV}	95		105
	Frequency Stability	KHz	± 15		15
	Spurious	dB	55		
	Impedance	Ω		75Ω Unbalanced	
	Output Power Range	dB	0		40
	Audio Frequency	MHz		4.5MHz ±15MHz	
	Return Loss	dB	8		
Power Rating		W		10	

Digital Signal Processor

APPEARANCE

DSP-910



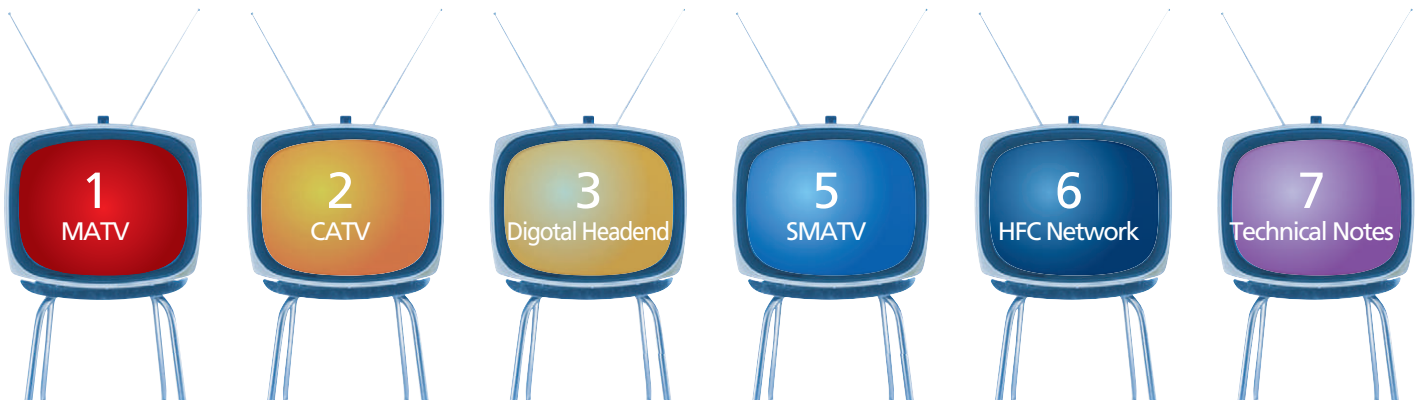
PERFORMANCE

FEATURES

- To convert specified TV signal from an antenna into IF frequency band
- After signal amplification, AGC, and removing spurious signal, it converts the specified channel into the same channel and amplifies
- Not being affected by airwaves due to transmitting in phase with public TV signal when transmitting in strong field strength.
- Suitable for transmitting adjacent channel by adopting high performance saw filter in RF circuit to minimize adjacent channel interference
- To adjust inputted level fluctuations by adopting AGC circuit at input
- Suitable for transmitting adjacent channel by adopting 2-step filter at output to minimize spurious

Classification	Unit	Specification DSP-910
Input Frequency	MHz	54 ~ 864
Input Level	dBmV	60 ~ 55
Input Impedance	Ω	75
Output Power	dB _{μV}	110 ± 5
AGC(Auto Gain Control)	dB	25
Output Impedance	Ω	75
Output Return Loss	dB	≥ 15
Group Delay	ns	≤ ± 50
SNR	dB	≥ 27
Frequency Deviation	ppm	± 10
Spurious	dBc	≥ 60
Output Power Range	dB	0 ~ -20
Power Rating	W	6

DongYang Telecom Product Steps



FM Processor

APPEARANCE

TFM-1000



FEATURES

- Designed to receive FM broadcasting in poor reception area
- To convert FM broadcasting channels received from antenna into FM broadcasting frequency of 88~108MHz
- Output level : $\geq 110\text{dBuV}$
- Easy to install in 19-inch 1U rack and excellent radiation of heat

PERFORMANCE

■ General Characteristics

Classification	Unit	Specification	Remark
Frequency Range	MHz	88 ~ 108	
Input Level	dBmV	40 ~ 60	
Output Level	dBmV	≥ 100	
AGC	dB	$\geq -10 \sim +10$	Input
	dB	$\leq \pm 1$	Output
Retrun Loss	dB	≥ 14	
Frequency Response	dB	$\leq \pm 1$	
Output Level Stability	dB	$\leq \pm 0.5$	
Spurious	dB	≥ -60	
Output Level Control Range	dB	≥ 15	
Noise Figure	dB	≤ 10	
Hum Modulation	dB	≤ -60	
Attenuation	dB	≤ 40	

■ Power

Rated Voltage	Power Consumption	Rated Fredquence
AC 220V (AC 86V ~ 265V)	$\leq 10\text{W (MAX)}$	60Hz

■ ect

Classification	Size	Remark
Size[mm]	482(W) X 215(D) X 44(H)	
Weight[Kg]	1.2	
Temperature	-15 ~ +50 °C	
Material	Al Case	

TV Modulator

APPEARANCE

TUM-1000



FEATURES

- Convenient to control Audio, Video and output level
- Easy to choose input and output channel by up-down switch at front panel
- Excellent heat radiation due to bottom aluminium panel

PERFORMANCE

Classification		Unit	Specification
Video Section	Input Impedance	ohms	75
	Bandwidth	MHz	4.2
	Differential Gain		5% max
	Differential Phase		5 degree max
	Hum & Noise	dB	-75
Audio Section	Input : 50Hz ~ 15KHz	dBm	0(0.8V)
	Impedance	ohms	600or300
	Frequency Tolerance, $\pm 1.5\text{KHz}$	MHz	4.5($\pm 1.5\text{KHz}$)
	Frequency Distortion	KHz	± 25
	Harmonic Distortion		1% max
First IF Section	Video IF Level	dB μ V	76
	Audio IF Level	dB μ V	62
	IF Frequency		
	Video Carrier	MHz	45.75
	Audio Carrier	MHz	41.25
	Video-Sound Spacing	MHz	+ 4.5 ($\pm 1.5\text{KHz}$)
	Vestigial Sideband Width(45.75MHz)		$\leq +1.5\text{MHz} -60\text{dB}(47.25\text{MHz}-50\text{MHz})$
RF Section	Output Frequency		50MHz ~ 870MHz(Variable)
	Frequency Tolerance	KHz	± 12
	SN	dBc	-52dBc
	Output Level Adjustable	dB μ V	max 110 ~115
	Output Typical Operating Level	dB μ V	110
	Single Second Order(-4.5MHz)	dB	≤ -60
	Hum Modulation	dB	≤ -75
	Composite Triple Beat	dB	≤ -60
	Spurious	dB	≤ -60
	Output Impedance	ohms	75
	Return Loss(out)	dB	≤ -14
	AC Operating Voltage		86V-265VAC / 60 Hz
	Operating Temperature	$^{\circ}\text{C}$	-15 ~ 50
	Dimension	mm	W482 ×H44 × D240

■ Dimension : 169mm(W) x 220mm(H) x 60mm(D)

TV Modulator

APPEARANCE

TUM-F710



FEATURES

- Output Frequency range(output channel variable)
CATV : CH.02~CH.117, UHF : CH.14~CH.69
- Possible to transmit adjacent channel by saw filter
- Possible to rock main functions after selection
- Easy to change the mode of CATV and UHF band
- Dimension : 482mm(W) × 44mm(H) × 200mm(D)

PERFORMANCE

Description		Unit	Specification	Remarks
Video Signal	Input Impedance	Ω	75	
	Input Level	Ire	140 ± 3	
	Return Loss	dB	≥ 30	
	Frequency Response	Hz ~ MHz	25 ~ 6	
	Differential Gain	%	≤ 5	
	Differential Phase	$^{\circ}$	≤ 5	
	Signal to Noise Ratio	dBc	≥ 60	
Audio Signal	Input Impedance	Ω	$600 \pm 5\%$	Balanced, Unbalanced
	Input Level	dBm	0 ± 6	
	Frequency Deviation	KHz	± 25	
	Frequency Response	Hz ~ MHz	50 ~ 15	
	Signal to Noise Ratio	dBc	≥ 60	
	Harmonic Distortion	%	± 0.5 Less	
RF Output	Output Frequency	MHz	54 ~ 864	Video Signal
	Power Level	dB μ V	≥ 100	
	Frequency Stability	KHz	± 12 Less	
	Return Loss	dB	≥ 12	
	Impedance	Ω	75	
	Hum Modulation	dBc	≥ 60	
	Spurious	dBc	≤ 55	
	Output Power Range	dB	0 ~ 20	
Power Rating		W	5	

Agile Modulator

APPEARANCE

TMD-910



FEATURES

- To convert audio and video signals of inputted base band into RF frequency and amplify the signal
- Suitable for transmitting adjacent channel by adopting high performance saw filter in IF circuit which minimizes adjacent channel interference
- Suitable for transmitting multi channel by adopting 2-step filter at output to minimize spurious
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Description		Unit	Specification	Remarks
Video Signal	Frequency Range	TMD-910(Output Variable)	Hz ~ MHz	25 ~ 4.2
	Input Level		Ire	140 ± 5
	Frequency Response		KHz	±1
	Differential Gain		%	≤ 5
	Differential Phase		°	≤ 5
	Signal to Noise Ratio		dBc	≥ 60
Audio Signal	Frequency Range		Hz ~ MHz	50 ~ 15
	Frequency Response		KHz	± 0.5
	Input Impedance		Ω	600 ± 5%
	Signal to Noise Ratio		dBc	≥ 60
	Harmonic Distortion		%	± 0.5 Less
RF Output	Output Frequency		MHz	54~864
	Power Level	TMD-910(Output Variable)	dB _{μV}	≥ 110
	Audio Carrier level		dB	- 14
	Frequency Stability		KHz	± 12 Less
	Impedance		Ω	75(Unbalanced)
	Return Loss		dB	≥ 15
	Spurious		dB	≤ -60
	Output Power Range		dB	0 ~ 20
Power Rating		W	5	

Stereo Modulator

APPEARANCE

TMD-930



FEATURES

- Sound-multiplex system(two carrier)
- Preventing adjacent channel interference by adopting Saw Filter
- 19-inch standard rack mount type(1U)
- Built-in Dual Sound Coder
- Built-in VBI decoder
- Excellent heat radiation due to aluminium panel
- Dimension : 482mm(W) × 44mm(H) × 240mm(D)

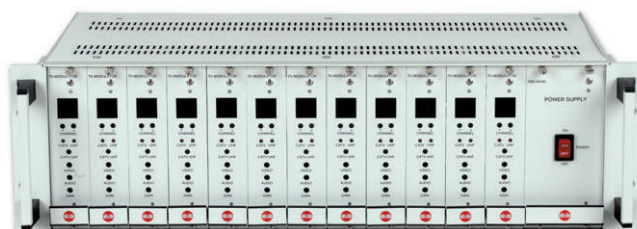
PERFORMANCE

Description		Unit	Specification	Remarks
Video Signal	Input Impedance	Vp-p	0.5 ~ 2	
	Output Level	dBmV	55 ± 5	
	Return Loss	dB	≥ 30	
	Video Carrier	MHz	45.75	
	Signal to Noise Ratio	dBc	≥ 60	
	Luminance Response	Ire	± 5	
Audio Signal	Frequency Response	Hz ~ MHz	25 ~ 4.2	≥ 60
	Input Level	dBm	0 ± 6	± 25KHz Deviation ± 27.5KHz Deviation
	Output Level	dB	± 5	
	Input Impedance	Ω	600 ± 5%	
	Audio 1 Carrier	MHz	41.25	
	Audio 2 Carrier	MHz	41.0258	
	Dual	dB	≥ 55	
	Stereo	dB	≥ 30	
RF Output	Output Frequency	MHz	54 ~ 864	
	Return Loss	dB	≥ 18	
	Impedance	MHz	75	Unbalanced
	Spurious	Ω	≥ 55	
	Output Power	dBc	≥ 105	
	Output Power Range	dB	0 ~ -20	
Power Rating		W	6	

Plug-in Type Modulator

APPEARANCE

TMD-M300



FEATURES

- To convert audio and video signals of inputted base band into RF frequency and amplify the signal
- Possible to select random input channel in-band, variable output channel according to band
- Stabilizing local oscillator frequency by method of PLL
- Dimension : 485mm(W) X 133mm(H) X 260mm(D)

PERFORMANCE

Description		Unit	Specification	Remarks
Video Signal	Input Impedance	Ω	75	
	Input Level	Ire	140 ± 3	
	Return Loss	dB	≥ 30	
	Frequency Response	Hz ~ MHz	25 ~ 4.2	
	Differential Gain	%	≤ 5	
	Differential Phase	$^{\circ}$	≤ 5	
	Signal to Noise Ratio	dBc	≥ 60	
Audio Signal	Input Impedance	Ω	$600 \pm 5\%$	Balanced, Unbalanced
	Input Level	dBm	0 ± 5	
	Frequency Deviation	KHz	± 25	
	Frequency Response	Hz ~ MHz	50 ~ 15	
	Signal to Noise Ratio	dBc	≥ 60	
	Harmonic Distortion	%	± 0.5	
RF Output	Output Frequency	MHz	54 ~ 864	Local Variable
	Power Level	dB μ W	$\geq 90 \pm 5$	
	Frequency Stability	KHz	± 12	
	Return Loss	dB	≥ 14	
	Impedance	Ω	75	
	Hum Modulation	dBc	≥ 60	
	Spurious	dBc	≤ 55	
	Output Power Range	dB	0 ~ 20	
Power Rating		W	20	

Divider

APPEARANCE

CDV-700, 712, 716



FEATURES

- To equally distribute signal of various RF channels in Headend
- Number of output : 8, 12 and 16 ports
- Minimizing loss by adopting hybrid type branch circuit
- Not being affected between input ports due to excellent combined characteristic
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Classification	Unit	Specification		
Frequency Range	MHz	54 ~ 864		
Output Port	Port	8	12	16
Insertion Loss	dB	≤ 12	≤ 16	≤ 16
Return Loss(In/out)	dB	≥ 16		
Impedance	Ω	75		
Port to Port Isolation	dB	≥ 22		

Power Supply

APPEARANCE

RPS-710



FEATURES

- To convert input power into AC 60V to supply for amplifiers of transmission lines
- Built-in voltage stabilizer to adjust input voltage fluctuation
- 19-inch standard rack mount type
- To supply stable power in spite of various noise
- Dimension : 482mm(W) X 125mm(H) X 240mm(D)

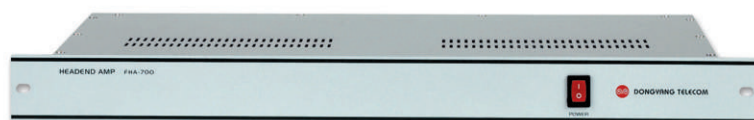
PERFORMANCE

Description	Unit	Specification	Remarks
Input Voltage	V/Hz	220 / 60	
Output Voltage	V	60 ± 5%	0 ~ 100V
Output Current	A	990VA(10A)	0 ~ 10A
Output Frequency	Hz	60 ± 2%	
Insulation Resistance	MΩ	≥ 100	Supply Dc 500V Power
Power Rating	W	360	

Head Amplifier

APPEARANCE

FHA-700, FHA-830



FEATURES

- To compensate loss of forward and reverse signals caused by Combiner and Divider
- Low noise and excellent linearity
- Dimension : : 482mm(W) X 44mm(H) X 200mm(D)
- Operating Temperature : 0C° ~50C°
- Operating Humidity : 20~80% RH at Non Condensing

PERFORMANCE

Classification	Unit	Specification
Frequency Range	MHz	54~864
Output Level	dBmV	≥40dBmV
Impedance	Ω	75
Noise Figure	dB	≤10dB
Hum Modulation	dB	≤-65dB
Return Loss	dB	≥14dB
Gain Control Range	dB	≥16dB
Weight	kg	≤4kg
Demension	cm	483(W)×200(D)×44(H)
Power Rating	W	10

Character Generator

APPEARANCE

A-100



PERFORMANCE

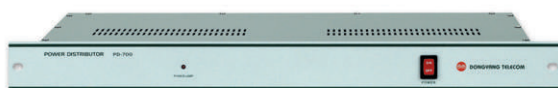
Classification	Specification
Edit Function	- To support Korean, English, Chinese character and special character 256 level anti-aliasing · 32 bit image display - To support mono color, gradation, texture for character and graphic
Effect Function	- Cut, Fade, Scroll, Wipe, flickering - Scroll / Wiper fade-in/out
Output Function	- Bypass(Video output), Super(Video+Character), Telop(Character) - Automatic delivery with adjusting repetition number and delivery interval - Possible to check operation screen and delivery screen with a monitor
Video Input	· NTSC Composite Video, 1 Vpp, RCA Jack 2ea
Video Output(Program)	· NTSC Composite Video, 1 Vpp, RCA Jack 2ea
Video Output(Monitor)	· NTSC Composite Video, 1 Vpp, RCA Jack 1ea
Output	· Bypass / Super / Telop
Serial Port	· RS232C 9p DIN, USB 2 PORT

※Manufacturer : NES TECHNOLOGY INC. CO.

Power Distributor

APPEARANCE

PD-700



FEATURES

- To supply stable voltage to the equipments mounted in Headend rack
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Classification	Specification	Remarks
Input Power	AC 110/220V	
Output Power	AC 110/220V	

Channel Processor

APPEARANCE

TCP-700FM



FEATURES

- To convert VHF/UHF TV signal into IF frequency and then into TV RF frequency
- Due to wide range of input level, it is suitable to use in the area of huge variation of input level
- Fast response of AGC
- Stable output by adopting in/out filter of low loss characteristics
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Classification	Unit	Specification	Remarks
Frequency Range	MHz	88~108	
Input Level	dB _μ V	40~60	
Output Level	dB _μ V	100	
AGC Control Range	dB	-10 ~ +10	
Gain Deviation	dB	± 1	
Return Loss	dB	≥14	
Spurious	dBc	≥ 60	
Out of Band Rejection	dBc	≥ 60	
Hum Modulation	dBc	≥ 60	
Power Rating	W	5	

Combiner

APPEARANCE

CCM-700, CCM-712, CCM-716



FEATURES

- To send combined signals from TV modulator, Signal Processor, Pilot Signal Generator and the like through one output
- Input ports : 8, 12 and 16 ports (optional)
- Possible to transmit multi channels due to broadband frequency response characteristics
- Optimal performance when transmitting multi channels due to low insertion loss by adopting hybrid type distribution circuit (built-in amp)
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Classification	Unit	Specification		
		CCM-700	CCM-712	CCM-716
Frequency Range	MHz	5 ~ 864		
Port	Port	8	12	16
Insertion Loss	dB	≤12	≤16	≤16
Return Loss	dB	≥ 15		
Impedance	Ω	75		
Isolation	dB	≥ 20		
Power	V / Hz	220V / 60		

Demodulator

APPEARANCE

TVD-900



FEATURES

- To separately output video and audio signal after converting inputted TV RF signal into base band signal.
- All channels selected in band shall be stable by adopting PLL tuner
- Adopting Saw Filter to prevent interference of adjacent channel
- Excellent performance of AGC to minimize output level fluctuations according to the changes of input level
- 19-inch standard rack mount type
- Easy maintenance
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Description		Unit	Specification	Remarks
Input	Input Frequency	MHz	54 ~ 864	
	Input Level	dB μ V	60 ~ 80	
	Return Loss	dB	≥ 16	
	Impedance	Ω	75	
Audio Signal	Frequency Range	Hz ~ KHz	50 ~ 15	
	Frequency Response	KHz	± 0.5	
	Impedance	Ω	$600 \pm 10\%$	Balanced, Unbalanced
	Harmonic Distortion	%	± 0.5	
Video Signal	Frequency Range	Hz ~ KHz	50 ~ 4.2	
	Frequency Response	KHz	± 0.5	
	Differential Gain	%	≤ 5	
	Harmonic Distortion	%	≤ 3	

Diplex Filter

APPEARANCE

DPF-1000



FEATURES

- Separating forward signal and reverse signal to send forward signal to transmission line and reverse signal to Headend
- Dimension : 482mm(W) X 44mm(H) X 260mm(D)

PERFORMANCE

Description		Unit	Specification	Remarks
Frequency Range	Forward	MHz	54 ~ 1000	
	Reverse	MHz	5 ~ 42	
Band Isolation		dB	≥ 40	
Return Loss(in/Out)		dB	≥ 16	
Insertion Loss		dB	≤ 1.5	
Temperature Range		°C	0 ~ 50	

Head Amplifier

APPEARANCE

FHA-S8100A(Forward) RHA-S6000A(Reverse)



FEATURES

- To compensate loss of forward and reverse signals caused by Combiner and Divider
- Low noise and excellent linearity
- Dimension : 482mm(W) X 44mm(H) X 200mm(D)

PERFORMANCE

Classification	RHA-S6000A(Reverse)	FHA-S8000A(Forward)	Remarks
Frequency Range	5~65MHz(42)	54~864MHz	
Frequency Response	± 1 dB	± 1 dB	
Reference Output Level	≥ 32 dBmV	≥ 40 dBmV	
Operational Gain	≥ 17 dB	≥ 20 dB	
Composite Triple Order	≤ -67 dB	≤ -68 dB	
Composite Second Order	≤ -67 dB	≤ -68 dB	
Cross Modulation	≤ -70 dB	≤ -65 dB	
Noise Figure	≤ 10 dB	≤ 10 dB	
Hum Modulation	≤ -63 dB	≤ -60 dB	
Return Loss	≥ 15 dB	≥ 15 dB	
Gain Control Range	≥ 16 dB	≥ 16 dB	

Power Distributor

APPEARANCE

PD-700D



FEATURES

- To supply stable power to the mounted equipments in Headend
- AC Power multi-tap function with 12 output ports
- To display AC voltage at front panel with digital segment
- 19-inch standard rack mount type
- Dimension : 482mm(W) X 133mm(H) X 260mm(D)

PERFORMANCE

Classification	Unit	Specification
Input Power	V	220
Output Power	V	220
AC Output Ports	Port	12
Operating Temperature	°C	-10°C~50°C

Power Supply

APPEARANCE

RPS-710D



FEATURES

- To convert input power into AC 50~60V to supply for amplifiers of transmission lines
- To supply stable power in spite of various noise due to the built-in Power Insert function
- Built-in output voltage stabilizer to adjust input voltage fluctuations
- To display AC voltage at front panel with digital segment
- 19-inch standard rack mount type
- Dimension : 482mm(W) X 133mm(H) X 260mm(D)

PERFORMANCE

Classification	Unit	Specification
Input Power	V	220
Output Power	V	60V / 10A
RF Input Range	MHz	50~870
RF Output Range	MHz	50~870
RF Output Power Supply Volt	V	AC 50~60
Operating Temperature	°C	-10°C~50°C
Power Rating	W	360

Rack

APPEARANCE

RCA-610~622



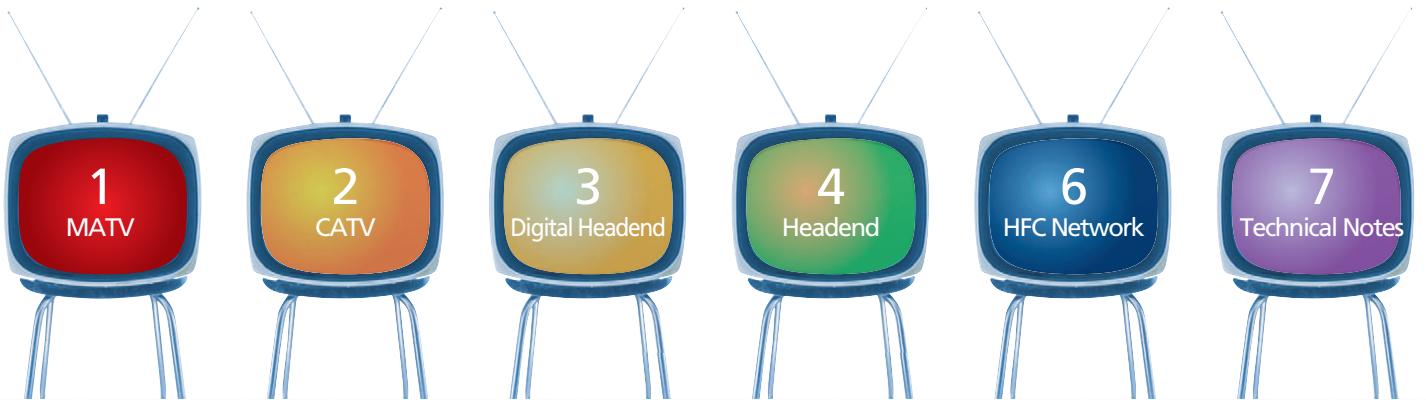
FEATURES

- Designed to mount various equipment modules for transmitting and receiving and so on according to EIA standard
- Easy to connect and to maintain
- Dimension : 600mm(W) X 1000mm(H) X 600mm(D)
 600mm(W) X 1200mm(H) X 600mm(D)
 600mm(W) X 1600mm(H) X 600mm(D)
 600mm(W) X 1800mm(H) X 600mm(D)
 600mm(W) X 2000mm(H) X 600mm(D)
 600mm(W) X 2200mm(H) X 600mm(D)

PERFORMANCE

Description	RCA-610/622	Remarks
Main Frame	Aluminium 2.5mm(Thickness)	
Height per Unit(Max.)	44mm(1H)	
Material of Shelf	Steel	
Temperature Range	-10°C~ +50°C	
Power	AC 110/220V, 60Hz	
Color	Optional	
Size	19"	Standard

DongYang Telecom Product Steps



Satellite Antenna

APPEARANCE

BS-A120, BS-A180, BS-A240



FEATURES

- To reflect the signals from satellites to the dish's focal point to gather the signals and supply to a low noise block down-converter or LNB.

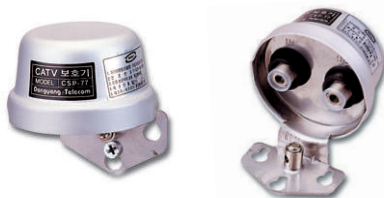
PERFORMANCE

Description	Unit	Specification	
Antenna Size	Cm	120, 180, 240	
Reflection Formula		Parabola Method	
Reception Frequency	GHz	3.4 ~ 12.75	
Reception Channel		BS, AS, Koreasat, BBC, CNBC	
Gain	dB	A240	47.2
		A180	45.3
		A120	41.5
Antenna Efficiency	%	65%	
Direction Control Range	°	Azimuth Travel 360, Elevation Travel 0~70	

Surge Protector

APPEARANCE

SCSP-77



PERFORMANCE

Description	MA	SDM
Frequency Range	54~806MHz	950 ~ 2150MHz
Insertion Loss	≤ 1.2dB	≤ 3dB
Return Loss	≥ 10dB	≥ 8dB
Insulation Resistance	≥ 1,000Ω	
Impedance	75Ω	
Isolation Voltage	AC 1000V (1 Minute)	

FEATURES

- Highly effective to prevent surge voltage by adopting low loss Surge Arrestor
- To prevent inductive voltage surge inputted by lightning through the CATV/MATV system line
- For indoor and outdoor use
- Excellent electromagnetic shielding characteristics and light aluminium die casting Case

Satellite IF AMP

APPEARANCE

BS-L20



FEATURES

- To compensate the cable loss between LNB and tuner
- Easy to install due to mini-type

PERFORMANCE

Description	Specification
Frequency Range	950 ~ 2,350MHz
Gain	≥ 13 dB
Noise Figure	≤ 5 dB
Output Level	94dB
Power	DC 12 ~ 22V

Mixer

APPEARANCE

SCW-215



FEATURES

- To transmit mixed signals of MATV and Satellite IF signal inputted respectively from the transmission lines to terminal equipments
- Excellent in band characteristic
- Easy to install
- Power passing between in/out port and input port of Satellite

PERFORMANCE

Description	Unit	MA	SDM
Frequency Range	MHz	54~806	950~2,150
Insertion Loss	dB	≤ 2	≤ 3
Return Loss	dB	≥ 10	
Band Isolation	dB	≥ 35	
Current	V	DC 13V ~ 18V, 0.5A(LNB Power Supply)	
Connector		F-Type	

Satellite Receiver

APPEARANCE

BS-D800S



FEATURES

- To extract audio and video signals from IF frequency after converting satellite signals received from satellite dish
- Suitable to watch high quality Japanese NHK, BS1, BS2 and so on.
- Possible to upgrade program through USB port

PERFORMANCE

Classification	Specification
Input Connector Type	F-Type
Frequency Range	950~2150MHz
Input Level	-65 to -25dBm
Aspect Ratio for Video Output	4:3, 16:9
Resolution	1080i, 480i
Video Output	RCY, YPbPr, HDMI
Audio Output	Audio L/R, S/PDIF
Power	100~250V AC, 50/60Hz / Maximun 30W
Temperature Range	0°C to +45°C, -10°C to +70°C
Relative Humidity Allowance	10%~95%, 2.1kg(without ACC' Y)
Size and Weight	485×245×44(mm)

Forward Optical Transmitter

APPEARANCE

T2600B



FEATURES

- To convert RF signals such as CATV Video signal, Digital data and the like received from antenna and other outside equipments into optical signal of 1550nm.
- Designed to transmit broadband of HFC/CATV/Satellite IF signals

PERFORMANCE

Description	Unit	Specification		Remarks
Wavelength	nm	1550 ± 10		
Output	dBm	Optical Output	10 ± 1	
Flatness	dB	54~806 MHz	± 1	
		950~2,150 MHz	± 2	
Return Loss	dB	54~806 MHz	12	
		950~2,150 MHz	8	
CSO	dB	≤ -55		MATV Band, 77ch, Standard
CTB	dB	≤ -55		MATV Band, 77ch, Standard
IMD3	dB	≤ -55		Satellite Band, 2 Tone Test

L.N.B.

APPEARANCE

BS, CS Converter



PERFORMANCE

Description	Unit	BS(Ku)	CS(C)
Receiving Frequency	GHz	11.70~12.01	3.7~4.2
Lo. Frequency	GHz	10.678	5.15
IF Frequency	GHz	0.95~1.45	0.95~1.35
Noise Figure	dB	≤ 0.9	≤ 0.7
Gain	dB	≥ 55	≥ 65
VSWR		2.0(1 TYPE)	2.0(1 TYPE)
Connection		F type	F type
Operating Temperature	V	8~30V / DC 15mA	15~25V / 90mV

FEATURES

- Ku Band : To convert 12GHz of SHF band from satellite dish into IF frequency
- C Band : To convert 4GHz of SHF band from satellite dish into IF frequency

HD Satellite Receiver

APPEARANCE

DSR-HD800S



FEATURES

- Converting satellite signals received from satellite dish into IF frequency, it extracts audio and video signals
- Output of Component(Y Pb Pr) & Composite(CVBS), to support NTSC/PAL
- To support HDMI interface and upgrade through satellite
- To support 3,600 channels and to manage preference channel group
- To save sound volume per channel
- Age limit function
- Automatic time adjustment

PERFORMANCE

Classification	Specification
Tuner & Channel	
Antenna Input port	F-Type, IEC 169-24, Female
Frequency Range	950MHz to 2150MHz
Input Level	-25 to -65dBm
Power Supply for Antenna	Vertical :+13.3V, Horizontal:+18.3V, Current : Max 500mA
22KHz Tone	Frequency: 22 ± 4 KHz, Size : 0.7 ± 0.2 V
DiSEqC	Version 1.0, 1.2, USALS
Demodulation	QPSK, 8APSK, 16APSK, 32APSK
Input Symbol Range	DVB-S : 2~45MS/s, DVB-S2 : 10~30MS/s (QPSK/8PSK)
MPEG Decoding	
Profile	MPEG-2 MP@HL, MP@L3,MP@L4, HP@L4
Input Range & Video Format	15MB/s Max &4:3, 16:9
Resolution	1080i, 1080P, 480I/576I, 480P/576P, 720P
Audio Decoding & Audio Mode	MPEG-1 Layer II, Dolby-AC3 Audio
Memory	
Flash Memory	4MB
RAM	DDR II 128MB
Audio/Video	
Output	RCA(CVBS) YPbR, HDMI, Audio L/R, S/PDIF(Digital Audio Output)
General Features	
Power	90~250V AC, 50/6Hz, 30W
Size/Weight	485(W)×245(D)×44(H)mm, 2.1Kg
Temperature	0~+45(Operation), -10~+70(Storage)

EDFA (Erbium Doped Fiber Amplifiers)

APPEARANCE

OFA-2000A



FEATURES

- To receive optical signal of 1550nm from optical transmitter and to amplify for improving the transmitting distance
- Low noise, high linearity and excellent stability of frequency response
- Designed for low power consumption
- Built-in status monitoring LED
- Wide range of optical output : 16~26dBm

PERFORMANCE

■ Optical and RF Characteristics

Classification	Unit	Specification
Wavelength Range	nm	1528~1562
Input Level	dBm	0
Output Level	dBm	16~26
Noise Figure	dB	≤6
Optical Isolation	dB	≥30
Return Loss	dB	≥55
Polarization Mode Dispersion	dB	≤0.3
Polarization-defendant gain	dB	≤0.5

■ General Characteristics

Classification	Unit	Specification
Power	V	AC85~265V / DC-36~72V / 25W
Temperature	°C	0~50(Operation), -40~85(Storage)
Humidity	%	0~95
Size	mm	81.8(W)x74.5(D)x23.5(H)

SMATV Video Optical Receiver

APPEARANCE

OR-2600C



FEATURES

- To convert optical signal from optical transmitter into RF signal and to amplify with specified output level for SMATV Video Optical Transmission System and Video Overlay Transmission System
- Designed to transmit HFC/CATV/Satellite IF signals
- Easy to install by compact size
- Low noise, high linearity and excellent stability of frequency response
- Low power consumption, built-in status monitoring LED

PERFORMANCE

■ Optical Characteristics

Classification	Unit	Specification
Input Wavelength	nm	900~1650
Input Power	dBm	-10~-3
Return Loss	dB	≥55

■ RF Characteristics

Classification	Unit	Specification	
		MATV	Satellite
Frequency Range	MHz	54~806	950~2150
Flatness	dB-pp	0.5~1.0	2.0~3.0
Output Power Level	dBuV	85	75
Return Loss	dB	≤15	≤12
CNR *1	dB	≤50	≤40
CSO	dBc	≤65	-
CTB	dBc	≤75	-
IMD3	dBc	-	≤70

Note 1) Optical input level : -8dBm (OMI : MATV 7.5%/CH, Satellite 2.3%/CH)

■ General Characteristics

Classification	Unit	Specification
Power Consumption	W	≤2
Power	V	DC 5V / AC 90~242V(50/60Hz)
Temperature	°C	-20~60(operation), -40~85(Storage)
Humidity	%	0~95
Size	mm	81.8(W)x74.5(D)x23.5(H)

Indoor Amplifier

APPEARANCE

SCA-38A



FEATURES

- To support the frequency band of 54~806MHz and 950~2150MHz such as terrestrial broadcasting, CATV and Satellite broadcasting.
- Possible to adjust gain and tilt of the band respectively due to the separation of MATV forward band and Satellite band
- Built-in LED Indicator to check the status of the amplifier
- Dimension : 169mm(W) x 220mm(H) x 60mm(D)

PERFORMANCE

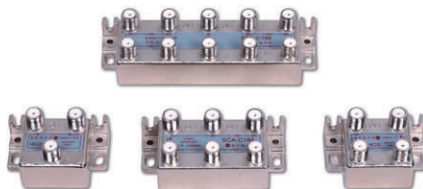
Description	Unit	Forward	Satellite	Remark
Frequency Range	MHz	54 ~ 806	950 ~ 2,150	
Gain Deviation	dB	±1.0	±2.0	
Reference Output Level	dB _μ V	≥ 105	≥ 110	
Gain	dB	≥ 30	≥ 40	
Gain Control Range	dB	≥ 18	≥ 15	
Slope Control Range	dB	≥ 15	≥ 12	
Composite Triple Order(CTB)	dB	≤ -55	-	Note) 1,2,3
Composite Second Order(CSO)	dB	≤ -55	-	Note) 1,2,3
Cross Modulation	dB	-	-	Note) 1,2,3
Noise Figure	dB	≤ 10	≤ 10	Note) 1
Hum Modulation	dB	≤ -63	≤ -63	Note) 1
Return Loss	dB	≥ 14	≥ 8	
LNB Power		-	DC 15V, 0.5A	
IMD	dB	-	50	
Power	V	AC 220 ± 10%		

- NOTE**
- 1) Measured in the range of the required gain and the output level (but, the noise figure to be measured in the maximum gain)
 - 2) Reverse-NTSC 6 channels, Forward-NTSC 77 channels
 - 3) Revers and Forward Output Tilt : 0 dB

Directional Coupler

APPEARANCE

SCA-C181, C182, C184, C188



FEATURES

- Stable frequency response in 54~2150MHz
- Excellent durability with the Aluminium die-casting case
- Excellent electromagnetic wave shield characteristics
- Power passing between input ports and output ports
- Tap-loss : 8~20dB(optional), 3dB step

PERFORMANCE

Description		Unit	Specification									
Frequency Range		MHz	54 ~ 2150									
Tap Loss			8		11		14		17		20	
			MA	SDM	MA	SDM	MA	SDM	MA	SDM	MA	SDM
Insertion Loss	Way 1	dB Less	2.5	4.5	2	3.5	1.5	3	1.3	2.7	1	2.5
	Way 2	dB Less	5	6.5	2.7	5	2.5	3.5	2	3	1.5	2.7
	Way 4	dB Less	-	-	-	-	5.5	7	3	4	2.5	3.2
	Way 8	dB Less	-	-	-	-	8.7	10.5	4.5	6	3.5	5.5
Out to Tap Isolation Loss	Way 1	dB Above	21	20	23	20	25	20	27	20	29	20
	Way 2	dB Above	21	20	23	20	25	20	28	20	30	20
	Way 4	dB Above	-	-	-	-	21	20	22	20	30	22
	Way 8	dB Above	-	-	-	-	22	20	24	20	25	20
Port to Port Isolation Loss	Way 1	dB Above	-	-	-	-	-	-	-	-	-	-
	Way 2	dB Above	20	18	21	19	22	19	22	20	25	20
	Way 4	dB Above	-	-	-	-	20	20	20	20	20	20
	Way 8	dB Above	-	-	-	-	19	18	19	18	20	19
Tap Loss	Way 1	dB Less	8.5	2	11.5	12	14.5	15	17	17.5	20	20.5
	Way 2	dB Less	8.5	10.5	12	13	14.5	16.5	17.5	18.5	20.5	21.5
	Way 4	dB Less	-	-	-	-	14	17	17.5	18	20.5	21
	Way 8	dB Less	-	-	-	-	15	19	19.5	21.5	21	22

(MA Reference Value : 54~806MHz, SDM Reference Value : 950~2150MHz)

Attenuator

APPEARANCE

ATT-()



FEATURES

- Excellent attenuation by adopting high performance filter
- Excellent frequency response
- Dimension : 482mm(W) X 44mm(H) X 260mm(D)

PERFORMANCE

Description	Unit	MA	Remarks
Frequency Range	MHz	54~7150	
Diminution Loss	dB	3, 6, 9, 12	
Return Loss	dB Above	13(MA) / 12(SDM)	
Frequency Response	dB Less	±2	
Connector		F-Type	

Distributor

APPEARANCE

SCA-D872~878



FEATURES

- 2-way distributor with stable frequency response in 54~2150MHz
- Excellent durability with the Aluminium die-casting case
- Excellent electromagnetic wave shield characteristics

PERFORMANCE

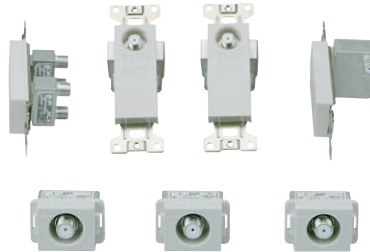
Description	Unit	Specification									
Frequency Range	MHz	54~ 2150									
Number of Port		2way		3way		4way		6way		8way	
		MA	SDM	MA	SDM	MA	SDM	MA	SDM	MA	SDM
Insertion Loss	dB Less	4.5	6	7.5	9.5	8.5	11	11.5	16	13	18.5
Return Loss	dB Above	14	12	13	11	10	10	10	10	11	9
Port to Port isolation	dB Above	20	17	20	17	20	17	20	17	20	17
Frequency Response	dB	±1.5(MA) / ±3.0(SDM)									
Hum Modulation	dB Less	-65(MA) / -60(SDM) (Passed Type Only)									
Current	Ampere	0.5(Passed Type Only)									
Impedance	OHM	75									

(MA Reference Value : 54~806MHz, SDM Reference Value : 950~2150MHz)

TV Wall Outlet

APPEARANCE

SCA-U81, SCA-U8R



FEATURES

- Stable frequency response in 54~2150MHz
- Suitable for installation in outlet box due to compact size
- Tap Loss (optional) : SCA-U81(8~20dB) 3dB step, SCA-U8R(1dB, 4dB)

PERFORMANCE

SCA-U81

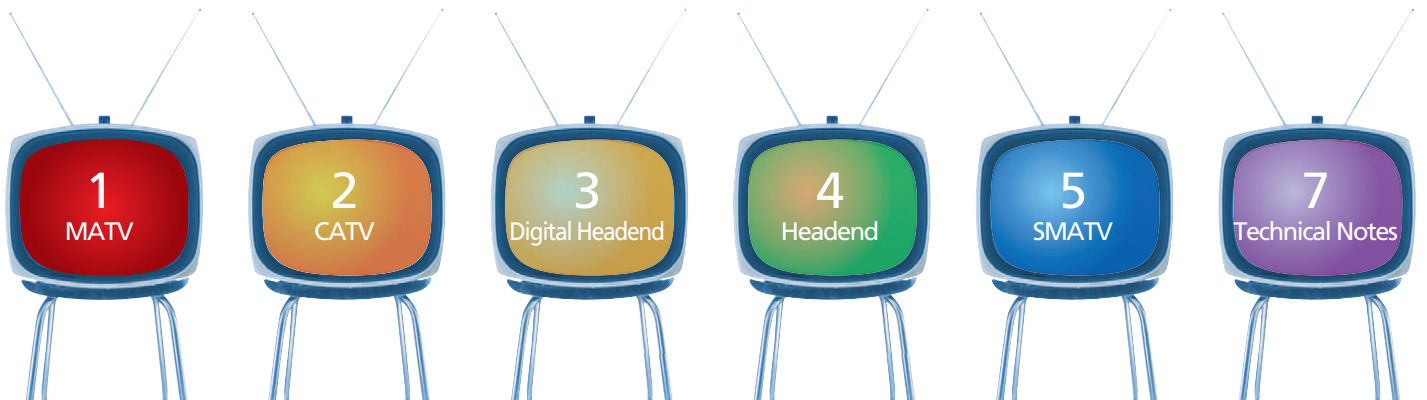
Description	Unit	Specification									
Frequency Range		54 ~ 2150									
Insertion Loss	dB	8		11		14		17		20	
		MA	SDM	MA	SDM	MA	SDM	MA	SDM	MA	SDM
Insertion Loss	dB Below	3	4	2.5	3.8	2	2.8	1.4	2.5	1.2	2
Out to Tap Isolation Loss	dB Below	22	20	24	20	26	20	27	20	30	27
Tap Loss	dB Below	9	9	10.5	11	13.5	14	16.5	17	21	21.5

SCA-U8R

Description	Unit	MA		SDM	
Frequency Range	MHz	54 ~ 806		950 ~ 2150	
Insertion Loss	dB	1		4	
Insertion Loss Error	dB Less	±0.75		±1.5	
Return Loss	dB Above	13		10	
Frequency Response	dB Less	±0.75		±1.5	

(MA Reference Value : 54~806MHz, SDM Reference Value : 950~2150MHz)

DongYang Telecom Product Steps



Forward Optical Transmitter

APPEARANCE

T1000A



FEATURES

- Low distortion characteristics
- Direct modulation method
- Plug-in type main frame for standard 19-inch rack
- 24 units mountable in 7RU
- Convenient user interface by adopting μ -processor
- To support NMS
- Optical output wavelength for CWDM : 1290nm, 1310nm, 1330nm, 1350nm

PERFORMANCE

■ Optical Characteristics

Classification	Specification
Optical Output Level	3~14dBm
Optical Output Wavelength	1310 $\pm$ 20nm
Optical Return Attenuation	55dB(min)
Connector	SC/APC, FC/APC(Optional)

■ RF Characteristics

Classification	Specification	Remarks
Frequency Range	45 ~ 1,000MHz	
RF Input Level(Based on 77 channels)	15dBmV	
Flatness	1dB(peak to Valley)	
Gain Adjustment Range	Input Attenuator	0 ~ 15.5dB(0.5dB Step)
	AGC Gain	-5 ~ 1dB(0.5dB Step)
Return Loss	16dB	
CNR	52dBc	Note) 1,2,3,4
CSO	64dBc	Note) 1,2,3
CTB	67dBc	Note) 1,2,3
X-MOD	65dBc	Note) 1,2,3
HUM	65dBc	

NOTE

1. Based on 0dBm input power to optical receiver
2. Channel Plan : Analog-NTSC 77 channels, Digital-256QAM 75channels
3. Optic cable : 20Km SMF-28 or compatible
4. CNR measurement : Based on 4MHz band

■ Electrical / Mechanical Characteristics

Classification	Specification
RF Connector	F-Type
Power Consumption	15W(Max)
Size	24mm(W) X 98.5mm(H) X 235mm(D)
Operating Temperature	0°C~ +40°C
Operating Limit Temperature	-10°C~ +60°C

Reverse Optical Receiver

APPEARANCE

R200S



FEATURES

- Built-in redundancy switch
- Plug-in type main frame for standard 19-inch rack
- 24 units mountable in 7RU
- Convenient user interface by adopting μ -processor
- To support NMS

PERFORMANCE

■ Optical Characteristics

Classification	Specification
Optical Input Level	-12~0 dBm
Optical Output Wavelength	1260~1600 nm
Optical Return Attenuation	55dB(min)
Connector	SC/APC, FC/APC (Optional)

■ RF Characteristics

Classification	Specification	Remarks
Frequency Range	5~200MHz	
RF Input Level	30dBmV	
Flatness	1dB(peak to valley)	
Switching time	5ms(min.)	
Return Loss	16dB	
CNR	51dBc	Note) 1,2,3,4
CSO	62dBc	Note) 1,2,3
CTB	65dBc	Note) 1,2,3
Separation between ports	60dB	
Test Ports	-20dB	

NOTE

1. Based on -6dBm(OMI 10%/CH) optical input
2. Based on analog 6 channels for RF channel loading
3. Optical Cable : 20Km SMF-28 or compatible
4. CNR measurement : Based on 4MHz band

■ Electrical / Mechanical Characteristics

Classification	Specification
RF Connector	F-Type
Power Consumption	4W(Max)
Size	24mm(W) X 98.5mm(H) X 235mm(D)
Operating Temperature	0°C~ +40°C
Operating Limit Temperature	-10°C~ +60°C

Main Frame

APPEARANCE

MF-1000A



PS-600A

FEATURES

- Designed to operate Optical Transmitter(T1000A) and Optical Receiver(R200S)
- To install plug-in type Power Supply, Optical Transmitter and Optical Receiver
- To support power distribution(50:50) when adopting power redundancy
- To supply interface for displaying status and setting of T1000A, R200S and Power Supply
- To support NMS
- Mountable 24 slots of Optical Transmitter and Optical Receiver in 7RU
- To support SNMP and HTTP for remote monitoring

PERFORMANCE

Classification	Specification
Operation Temperature	0°C~50°C
AC Input power	220V(198~242V)
DC Input power	48V(38~70V)
Power Consumption	5~80W
Power Redundancy	Optional
Status of Operation/Alarm	Built-in LED, VFD
Alarm Function	Status of Main Frame, Optical Transmitter, Optical Receiver

Main Frame

APPEARANCE

MF-1000B



PS-300A

FEATURES

- Designed to operate Optical Transmitter(T1000A) and Optical Receiver(R200S)
- To install plug-in type Power Supply, Optical Transmitter and Optical Receiver
- To support power distribution(50:50) when adopting power redundancy
- To supply interface for displaying status and setting of T1000A, R200S and Power Supply
- To support NMS
- Mountable 12 slots of Optical Transmitter and Optical Receiver in 4RU
- To support SNMP and HTTP for remote monitoring

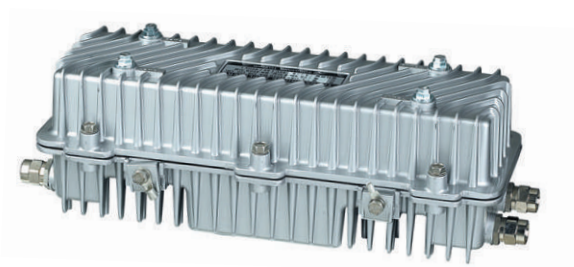
PERFORMANCE

Classification	Specification
Operation Temperature	0°C~50°C
AC Input power	198V~242V
DC Input power	38/48/70V
Power Consumption	5~80W
Power Redundancy	Optional
Status of Operation/Alarm	Built-in LED, VFD
Alarm Function	Status of Main Frame, Optical Transmitter, Optical Receiver

Trunk Bridge Amplifier

APPEARANCE

STBA - G402D



FEATURES

- Aluminium Diecasting housing and stability of frequency response
- Designed for high gain
- High power hybrid IC(GaAs FET) and excellent low distortion
- Suitable for large scale system by adopting AGC/ASC circuit
- Built-in surge protection circuit
- Easy application of NMS with the ports for wink switch and NMS
- Easy maintenance by installing SMPS in upper housing

PERFORMANCE

Classification	Unit	Forward		Reverse	Remarks
		TA	BR		
Frequency Range	MHz	54(88) ~ 1002		5~42(65)	Note 4
Operating Gain	dB	≥33	≥40(max43)	≥18	-
Flatness	dB	±0.75			
Output Level	dBmV	≥43	≥56	≥40	Note 5
Return Loss	dB	≥16			
Noise Figure	dB	≥10	≥10	≥15	
CSO	dB	≥73	≥68	≥73	Note 1,2,3
CTB	dB	≥73	≥68	-	Note 1,2,3
X-MOD	dB	≥70	≥65	≥70	Note 1,2,3
HUM	dB	≥65			
AGS/AGC	-	Output changes within ±0.5dB at input level of 10dBmV±4			

NOTE

1. Values are measured at the rated gain and the defined output level range. However, noise figure is measured at the maximum gain.
2. Reverse : 6 NTSC channels / Forward : 77 analog NTSC channels(54~550MHz) + 75 digital signal channels(550~1002MHz) (set 6dB lower than analog signals)
3. Output tilt : Forward 12dB, Reverse 0dB
4. A-type ~42/54MHz, B-type ~65/88MHz, C-type ~88/104MHz, D-type ~174/206MHz
5. Based on upper limited frequency

High Gain Trunk Bridge Amplifier

APPEARANCE

STBA-G452D



FEATURES

- Aluminium Diecasting housing and stability of frequency response
- Designed for high gain with output level of more than 56dBmV(Bridge)
- High power hybrid IC(GaAs FET) and excellent low distortion
- Suitable for large scale system by adopting AGC/ASC circuit
- Built-in surge protection circuit
- Easy application of NMS with the ports for wink switch and NMS
- Easy maintenance by installing SMPS in upper housing

PERFORMANCE

Classification	Unit	Forward		Reverse	Remarks
		TA	BR		
Frequency Range	MHz	54(88)~1002		5~42(65)	Note 4
Operating Gain	dB	≥32	≥45	≥24	-
Flatness	dB	±0.75		±0.5	
Output Level	dBmV	≥43	≥56	≥40	Note 5
Return Loss	dB	≥16			
Noise Figure	dB	≥10	≥10	≥15	
CSO	dB	≥73	≥68	≥73	Note 1,2,3
CTB	dB	≥73	≥68	-	Note 1,2,3
X-MOD	dB	≥70	≥65	≥70	Note 1,2,3
HUM	dB	≥65			
AGS/AGC	-	Output changes within ±0.5dB at input level of 10dBmV±4			

NOTE

1. Values are measured at the rated gain and the defined output level range. However, noise figure is measured at the maximum gain.
2. Reverse : 6 NTSC channels / Forward : 77 analog NTSC channels(54~550MHz) + 75 digital signal channels(550~1002MHz) (set 6dB lower than analog signals)
3. Output tilt : Forward 12dB, Reverse 0dB
4. A-type ~42/54MHz, B-type ~65/88MHz, C-type ~88/104MHz, D-type ~174/206MHz
5. Based on upper limited frequency

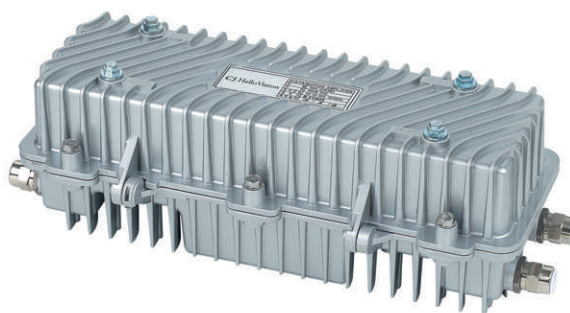
■ General Characteristics

Classification	Specification
Power	AC40~90V(50/60Hz), Max AC38~100V, 49.5W(max)
Temperature	-25~60°...(Operation), -35~70°...(Operation Limit)
Humidity	5~95%
Size/Weight	510mm(W)x202mm(D)x164mm(H) / 8.1Kg

Distribution Amplifier

APPEARANCE

SDA-G403BD



FEATURES

- Aluminium Diecasting housing and stability of frequency response
- High gain balanced type
- High power hybrid IC(GaAs FET) and excellent low distortion
- Suitable for large scale system by adopting AGC/ASC circuit
- Built-in surge protection circuit
- Easy application of NMS with the ports for wink switch and NMS
- Easy maintenance by installing SMPS in upper housing

PERFORMANCE

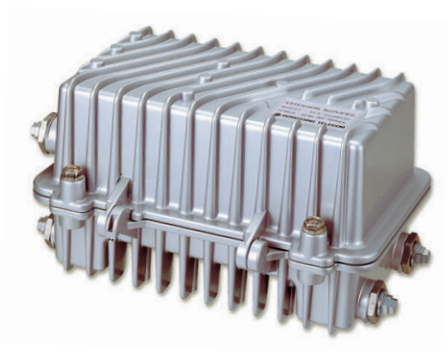
Classification	Unit	Forward	Reverse	Remarks
Frequency Range	MHz	54(88)~1002	5~42(65)	Note 4
Operating Gain	dB	≥40	≥18(25)	-
Flatness	dB	±0.75		
Output Level	dBmV	≥49(max51)	≥38	Note 5
Return Loss	dB	≥16		
Noise Figure	dB	≥10	≥15	
CSO	dB	≥68	≥73	Note 1,2,3
CTB	dB	≥68	-	Note 1,2,3
X-MOD	dB	≥65	≥70	Note 1,2,3
HUM	dB	≥65		
AGS/AGC	-	Output changes within ±0.5dB at input level of 10dBmV±4		

- NOTE**
1. Values are measured at the rated gain and the defined output level range. However, noise figure is measured at the maximum gain.
 2. Reverse : 6 NTSC channels / Forward : 77 analog NTSC channels(54~550MHz) + 75 digital signal channels(550~1002MHz) (set 6dB lower than analog signals)
 3. Output tilt : Forward 12dB, Reverse 0dB
 4. A-type ~42/54MHz, B-type ~65/88MHz, C-type ~88/104MHz, D-type ~174/206MHz
 5. Based on upper limited frequency

Extension Amplifier

APPEARANCE

SEA-G401D



FEATURES

- Shield-type Aluminium Diecasting housing and stability of frequency response
- Designed for high gain : $\geq 40\text{dB(AGC)}$, $\geq 44\text{dB(MGC)}$
- High power hybrid IC(GaAs FET) and excellent low distortion
- Suitable for large scale system by adopting AGC/ASC circuit(optional)
- Built-in surge protection circuit
- Easy to change to ONU from Extension Amplifier and vise versa

PERFORMANCE

Classification	Unit	Forward	Reverse	Remarks
Frequency Range	MHz	54(88)~1002	5~42(65)	Note 4
Operating Gain	dB	≥ 40	$\geq 18(25)$	-
Flatness	dB	± 0.75		
Output Level	dBmV	≥ 49	≥ 38	Note 5
Return Loss	dB	≥ 16		
Noise Figure	dB	≥ 10	≥ 15	
CSO	dB	≥ 68	≥ 73	Note 1,2,3
CTB	dB	≥ 68	-	Note 1,2,3
X-MOD	dB	≥ 65	≥ 70	Note 1,2,3
HUM	dB	≥ 65		
AGS/AGC	-	Output changes within $\pm 0.5\text{dB}$ at input level of $10\text{dBmV} \pm 4$		

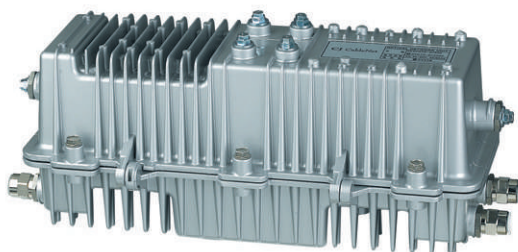
NOTE

1. Values are measured at the rated gain and the defined output level range. However, noise figure is measured at the maximum gain.
2. Reverse : 6 NTSC channels / Forward : 77 analog NTSC channels(54~550MHz) + 75 digital signal channels(550~1002MHz) (set 6dB lower than analog signals)
3. Output tilt : Forward 12dB, Reverse 0dB
4. A-type ~42/54MHz, B-type ~65/88MHz, C-type ~88/104MHz, D-type ~174/206MHz
5. Based on upper limited frequency

Optical Network Unit (Outdoor)

APPEARANCE

DFOTR-G104D



FEATURES

- Designed for high output level(43dBmV)
- Reverse cell division method
- While using for cell division, it switches automatically to normal transmitter when an error occurs in a transmitter.
- Stable RF output by built-in AGC circuit (option)
- High power hybrid IC(GaAs FET) and excellent low distortion
- Built-in surge protection circuit
- Easy application of NMS with the ports for wink switch and NMS
- 4 RF output ports
- Maximizing reverse link margin by adopting high output power and high linearity DFB Laser diode.
- Easy maintenance by installing SMPS in upper housing

PERFORMANCE

Classification		Specification	Remarks	
Optical	Input Wave Length(nm)		1200~1600	
	Input Power(dBm)		-3(-5~-1)	
	Output Wave Length(nm)		1310 ± 30	
	Output Power(dBm)		3(5)	
	Connector		SC/APC or FC/APC	
RF	Reverse	Frequency Range(MHz)	5~42	Note 3
		Flatness(dB)	±0.75	-
		Return Loss (dB)	≥6	-
		Input Power(dBmV)	15	Note 1
		CSO(dB)	≥55	Note 1,2
		CTB(dB)	≥65	Note 1,2
		X-MOD(dB)	≥62	Note 1,2
		CNR(dB)	≥48	Note 1,2
		HUM(dB)	≥65	Note 1,2
		Redundancy	C	-
	Cell division	C	-	
	Forward	Frequency Range(MHz)	54~1002	Note 3
		Flatness(dB)	±0.75	-
		Return Loss(dB)	≥16	-
		OutputLevel(dBmV)	≥43	Note 1
		CSO(dB)	≥64	Note 1,2
		CTB(dB)	≥67	Note 1,2
		X-MOD(dB)	≥65	Note 1,2
		CNR(dB)	≥48	Note 1,2
		HUM(dB)	≥65	Note 1,2

NOTE

1. Base on forward NTSC 77 channels + Digital 75channels, Reverse 6channels
2. Forward Optical Input : Wavelength 1310nm, -3dBm, OMI 3%
3. Separation between forward and reverse : A-type ~42/54MHz, B-type ~65/88MHz, C-type ~88/104MHz, D-type ~174/206MHz (Easy to change frequency type due to adopting plug-in type module)

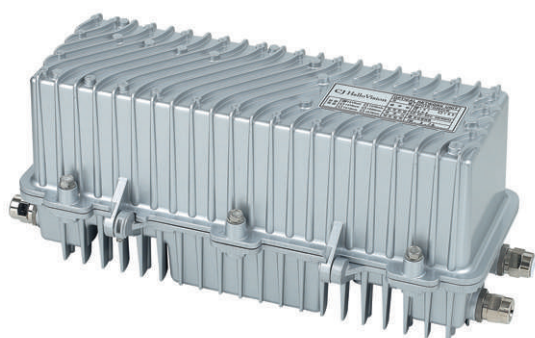
■ Status Display

LED Display	AC power, DC power, Optical module status
Test Point	Optical Output power (1V/mW)
	Optical input power 1V/mW)
	AC & DC power

Optical Network Unit (Outdoor)

APPEARANCE

DFOTR-G204D



FEATURES

- Designed for high output level(49dBmV)
- Easy to maintain due to module-type design
- Stable broadband characteristics due to adopting inner aluminium cover
- Built-in AGC circuit supports large scale system(optional)
- High power hybrid IC and excellent low distortion
- Easy application of NMS with the ports for wink switch and NMS
- To support CWDM wavelength
- To support cell division into 2 for forward and reverse respectively
- Detachable type of gain and tilt control for RF Input/Output
- To support surge protection

PERFORMANCE

	Classification	Specification
Forward	Optical wavelength	1260~1610nm
	Frequency Range	54~1002MHz
	Optical input level(min / rating / max)	-2 / 0 / 2 dBmV
	Optical Link Loss(max)	≤ 14dB
	RF Output Level(870MHz/1GHz)	47 / 49dBmV
	RF Output Tilt(FDS-Min to 870MHz / 1002MHz)	10 / 12dB
	CNR	47dB(based on 0dBm)
	MER	40dB
	CSO	64dB
	CTB	67dB
	X-MOD	64dB
	HUM	65dB
	Frequency flatness(response)	±0.75dB
	Return Loss	16dB
	Test Point Level RF Monitoring Port	-20dB
Reverse	Optical input display(LED)	Normal : green, Abnormal : red
	Laser Diode	DFB
	Optical Wavelength	1470~1610nm
	LD-ON/OFF Time	-
	Optical Output Level	5dBm
	Frequency Range	5~42MHz
	RF Input Level(min / rating / max)	15 / 20 / 25dBmV
	CNR	43
	CSO	55
	X-MOD	65
	Noise Power Ratio(min)	60
	IM2	60
	IM3	65
	Frequency Flatness(response)	±0.5
	Return Loss	16dB
	Optical Output Display	on(normal)

General Characteristics

Classification	Specification
Optical Connector Type	SC/APC
Impedence	75 Ω
Temperature	-40~65(Operation), -40~85(Storage)
Humidity	0~95%(Operation)
AC Input Power	40~90V
Power Consumption	55W

Optical Network Unit (Outdoor)

APPEARANCE

DFOTR-G404D



FEATURES

- To support CWDM wavelength
- To support cell division into 4 for forward and reverse respectively
- Designed for high output level(49dBmV)
- Independent 4 Plug-in type modular amplification part · Easy to maintain
- To provide stable amplification environment by adopting shield type inner chassis
- Stable RF output by built-in AGC circuit (optional)
- High power hybrid IC and excellent low distortion
- Easy application of NMS by adopting NMS-only interface
- Built-in 2 UPS terminal (No need of Power Inserter)
- Built-in surge protection circuit
- Maximizing reverse link margin by adopting high output power and high linearity DFB Laser diode.
- To support cell division into 2 for forward and into 4 for reverse respectively

PERFORMANCE

■ Optical Characteristics

Classification	Unit	Specification
Forward Optical Input Wavelength	nm	1260~1600
Forward Optical Input Power (min / rating / max)	dBm	-2 / 0 / 2
Reverse Optical Output Wavelength	nm	1471,1491,1511,1531,1551(optional)
Reverse Optical Output Power	dBm	3(5), optional
SMSR	dB	≥35
Return Loss	dB	≥55
Connector		SC/APC or FC/APC (optional)

■ RF Characteristics

Classification	Unit	Forward	Reverse
Frequency Range	MHz	54/88/104/216~1002	5~42/65/88/174
Flatness	dB	±0.75	±0.5
Return Loss	dB	≥16	
Impedance	Ω	75	
Rated Input/Output Level	dBmV	54MHz : 37, 1002MHz : 49	Flatness : 20
Max Input/Output Level	dBmV	54MHz : 38 1002MHz : 52	Flatness : 20
RF Test Port	dB	-20° ±1	
Port to Port Isolation(RF to RF port, RF to Power port)	dB	5~870MHz : ≥65 / ~1002MHz : ≥60	
Path Redundancy Switch	dB	Insertion Loss : ≤0.5, Isolation : ≥60	
Gain Control Range	dB	MCU Control : 0~7(0.5dB step), Att : 0~20(1dB step)	
Tilt Control Range	dB	MCU Control : 0~7(0.5dB step), EQ : 0~8(continuous variable)	MCU Control 0~7(0.5dB step) EQ : 0~30(1.5dB step)
CNR	dB	52	47
CSO	dB	64	55
CTB	dB	67	65
X-MOD	dB	64	65

■ General Characteristics

Classification	Specification
Power	AC 40~90V
Temperature	-40~65°C

Rack Type Optical Network Unit (Indoor)

APPEARANCE

FOTR-1000A



- 19-inch standard rack mount type(1U)
- Easy to maintain due to module-type design
- Possible to extend forward and reverse frequency band
- To provide stable amplification environment by adopting shield type inner chassis
- Stable RF output by built-in AGC circuit
- High power hybrid IC and excellent low distortion
- Maximizing reverse link margin by adopting high output power and high linearity DFB Laser diode
- Power redundancy
- 2 output ports

PERFORMANCE

■ Optical Characteristics

Classification	Unit	Specification
Forward Optical Input Wavelength	nm	1260~1600
Forward Optical Input Power (min / rating / max)	dBm	-3 / -1 / 1
Reverse Optical Output Wavelength	nm	1310
Reverse Optical Output Power	dBm	5
SMSR	dB	≥ 35
Return Loss	dB	≥ 55
Connector		SC/APC or FC/APC (optional)

■ RF Characteristics

Classification	Unit	Forward	Reverse
Frequency Range	MHz	54/88/104/216~1002	5~42/65/88/174
Frequency Response	dB	±0.75	±0.5
Return Loss	dB	≥ 16	
Impedance	Ω	75	
Rated Input/Output Level	dBmV	54MHz : 31, 1002MHz : 43	Flatness : 20
Max Input/Output Level	dBmV	54MHz : 33 1002MHz : 45	Flatness : 20
RF Test Port	dB	-20 ± 1	
Gain Control Range	dB	Att : 0~15(1dB step)	
Slope Control Range	dB	EQ : 0~7(1dB step)	
CNR	dB	48	48
CSO	dB	63	55
CTB	dB	67	65
X-MOD	dB	63	63

■ General Characteristics

Classification	Specification
Power	AC 85~242V
Temperature	0~50°C

Indoor ONU

APPEARANCE

FOTR-G30D



FEATURES

- Easy to install in CATV amplifier box
- Easy to maintain due to modular type design
- Possible to extend forward and reverse frequency band
- To provide stable amplification environment by adopting shield type inner chassis
- High power hybrid IC and excellent low distortion
- Maximizing reverse link margin by adopting high output power and high linearity DFB Laser diode

PERFORMANCE

Classification	Unit	Specification		Remarks
		Reverse	Forward	
Optical Input/Output Level	dBm	5	-1 ± 2	
RF Rated Input/Output Level	dBmV	≥20(Input)	≥45(Output)	
Frequency Response	dB	±0.75		
Return Loss	dB	≤-16	≤-16	
Slope Control	dB	0~6	plug-in type EQ	
CSO	dB	≤-55	≤-63	Note 1,2,3
CTB	dB	≤-65	≤-67	Note 1,2,3
X-MOD	dB	≤-62	≤-64	Note 1,2,3
HUM	dB	≤-63	≤-63	Note 1,2,3
CNP	dB	≥48	≥52	Note 1,2,3
Power	V	AC 85~242V(50/60Hz)		
Power Consumption	W	20W(max)		
Connetor		5C, 7C, 10C, 12C		
Size	mm	165(W)x67.5(H)x200(D)		

NOTE

1. These figures shall be measured in the range of the required gain and the output level(but, the noise figure in the maximum gain)
2. Reverse : NTSC 6 channels, Forward : NTSC 110 channels
3. Reverse and Forward output Tilt : 0 dB

Indoor Amplifier

APPEARANCE

CA-1030W



FEATURES

- 2-way CATV amplifier with stable frequency characteristics and high output power
- Easy to test and maintain by using Input/Output test port
- Delicate gain control by gain control volume according to reverse and forward frequency band respectively
- Possible to adjust reverse and forward input level with plug-in type attenuator
- Built-in attachable filter to extend frequency band

PERFORMANCE

Classification	Unit	Specification		Remarks
		Reverse	Forward	
Frequency Range	dBm	5~1000	5~42	
Rated Output Level	dBmV	≥45	≥37	
Frequency Response	dB	±1	±0.75	
Max Gain	dB	≥30	≥20	
Max Input Level	dB	≤20	≤20	
Gain Control Range		≥18	≥18	
Slope Control Range	dB	≥15	≥15	
CSO	dB	≤-63	—	Note 1,2,3
CTB	dB	≤-61	≤-65	Note 1,2,3
Cross Modulation	dB	≤-63	≤-65	Note 1,2,3
Noise Figure	dB	≤10	≤10	
Hum Modulation	dB	≤-63	≤-65	
Return Loss	dB			
Power consumption	W	≤16		
Power	V	AC 220V		
Operating Temperature	°C	-10~50		
Size	mm	157(W) × 56(H) × 196(D)		

- NOTE**
1. These figures shall be measured in the range of the required gain and the output level(but, the noise figure in the maximum gain)
 2. Reverse : NTSC 6 channels, Forward : NTSC 110 channels
 3. Reverse and Forward output Tilt : 0 dB

Indoor Amplifier

APPEARANCE

CA-1030WE



FEATURES

- 2-way CATV amplifier with stable frequency characteristics and high output power
- Easy to test and maintain by using Input/Output test port
- Possible to adjust reverse and forward input level with plug-in type attenuator
- Possible to extend frequency band by using detachable filter
- Designed to block noise
- Possible to adjust reverse and forward tilt with plug-in type attenuator

PERFORMANCE

Classification	Unit	Specification		Remarks
		Forward	Reverse	
Frequency Range	MHz	54(88)~1000	5~42(65)	
Rated Output Level	dBmV	≥45	≥37	
Frequency Response	dB	± 1	± 0.75	
Max Gain	dB	≥30	≥20	
Max Input Level	dBmV	≤20	≤20	
Gain Control Range	dB	≥18	≥18	
Slope Control Range	dB	≥15	≥15	
CTB	dB	≤-61	-	Note) 1, 2, 3
CSO	dB	≤-63	≤-65	Note) 1, 2, 3
Cross Modulation	dB	≤-63	≤-65	Note) 1, 2, 3
Noise Figure	dB	≤10	≤10	Note) 1
Hum Modulation	dB	≤-63		Note) 1
Return Loss	dB	≥15	≥16	
Power consumption	W	≤16		
Power	V	AC 220V		
Operating Temperature		-10°C ~ 50°C		

NOTE

1. These figures shall be measured in the range of the required gain and the output level(but, the noise figure in the maximum gain)
2. Reverse : NTSC 6 channels, Forward : NTSC 110 channels
3. Reverse and Forward output Tilt : 0 dB

RFoG Node

APPEARANCE

DFOTR-G45R



FEATURES

- Designed for high output level(49dBmV)
- High power hybrid IC and excellent low distortion
- Built-in surge protection circuit
- Easy installation and maintenance with plug-in type module
- To support DOCSIS 3.0
- To support a PON port
- To support WDM with built-in or without built-in

PERFORMANCE

	Classification	Specification
Forward	Optical wavelength Range	1550±3.5nm
	Frequency Range	54~1002MHz
	Optical Input Level(min / rating / max)	-6 / -3 / 2dBm
	Optical Link Loss(max)	24dB
	RF Output Level(870MHz/1GHz)	≥49dBmV
	RF Output Tilt	10dB
	CNR	≥47dB
	MER	≥40dB
	CSO	≥60dB
	CTB	≥62dB
	Cross Modulation	≥60dB
	HUM Modulation	≥63dB
	Frequency Response	±0.75dB
	Return Loss	≥16dB
	AGC Range	-3±3
	RF Test Port	-20dB
	Optical Input display	LED on/off
Reverse	LD Type	MQW DFB Laser Diode
	Optical wavelength(CW) Range	1610±3.5nm
	LD-ON/OFF Time	≤1.5μs
	Optical Output Level(LD ON/OFF)	4dBm
	Frequency Range	5~42MHz
	RF Input Level(min/rated/max)	0/20/40dBmV
	CNR	≥45dB
	CSO	≥55dB
	Cross Modulation	≥60dB
	Frequency Response	±0.75
	Return Loss	≥16dB
General	Optical Connector type	SC/APC
	RF Input/Output Gain Control	detachable ATT
	RF Input/Output Tilt Control	Fixed type
	Input/Output Impedance	75Ω
	Temperature	-10~60℃(operating), -40~85℃(storage)
	Humidity	0~95%(operating)
	AC Input Power(min/rating/max)	198/220/242V
	Power Consumption(min/max)	20 / 22W

RF Overlay Node

APPEARANCE

DFOTR-G50R



FEATURES

- Designed for high output level($\geq 49\text{dBmV}$)
- High power hybrid IC and excellent low distortion
- Improving reliability by adopting SMPS (design life : 100 hundred hours)
- Easy to install and maintain by using plug-in module
- To support a PON Port
- To support WDM with built-in or without built-in

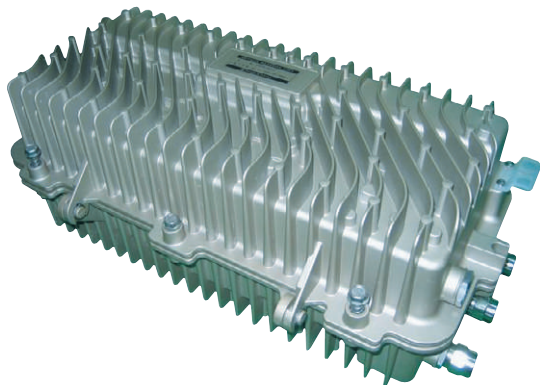
PERFORMANCE

	Classification	Specification
Forward	Optical wavelength Range	$1550 \pm 3.5\text{nm}$
	Frequency Range	54~1002MHz
	Optical Input Level(min / rating / max)	-6 / -3 / 2dBm
	Optical Link Loss(max)	24dB
	RF Output Level(1GHz)	$\geq 49\text{dBmV}$
	RF Output Tilt	10dB
	CNR	$\geq 47\text{dB}$
	MER	$\geq 40\text{dB}$
	CSO	$\geq 60\text{dB}$
	CTB	$\geq 62\text{dB}$
	Cross Modulation	$\geq 60\text{dB}$
	HUM Modulation	$\geq 63\text{dB}$
	Frequency Response	$\pm 0.75\text{dB}$
	Return Loss	$\geq 16\text{dB}$
	RF Test Port	-20dB
	Optical Input display	LED on/off
	Optical Connector type	SC/APC
General	RF Input/Output Gain Control	detachable ATT
	RF Input/Output Tilt Control	Fixed type
	Input/Output Impedance	75 Ω
	Temperature	-10~60 $^{\circ}\text{C}$ (operating), -40~85 $^{\circ}\text{C}$ (storage)
	Humidity	0~95%(operating)
	AC Input Power(min/rating/max)	198/220/242V
	Power Consumption(min/max)	20 / 22W

Hybrid Overlay Node

APPEARANCE

DHON-1000



FEATURES

- Designed for analog and digital CATV transmission network, FTTH Overlay transmission network and RFoG transmission network
- HUB for HFC and RF Overlay FTTH system
- Providing HFC and FTTH service without installing additional fiber by replacing existing ONU
- Accommodating up to 512 subscribers for RF Overlay FTTH service
- Providing legacy HFC service by using FTTH in connection with H-TAP
- Remote monitoring and controlling for all RF modules (Linked with OLT)

PERFORMANCE

1. HFC ONU part

Optical Characteristics	Unit	Specification	
Forward Optical Input Wavelength	nm	1310±10	
Forward Optical Input Power	dBm	-3~2	
Reverse Optical Output Wavelength	nm	1550,1610	
Reverse Optical Output Power	dBm	≥4	

RF Characteristics	Unit	Forward	Reverse
Frequency Range	MHz	54~1002	5~42
Frequency Response	dB	±0.75	
Return Loss	dB	≥16	
Impedance	Ω	75	
Rated Input/Output Level	dBmV	38 at 54MHz, 52 at 1002MHz	Flatness 20
RF Monitoring Port	dB	-20±1	
CNR Note 1,2	dB	≥52	≥45
CSO Note 1,2	dB	≥62	≥55
CTB Note 1,2	dB	≥64	-
X-MOD Note 1,2	dB	≥63	≥70

NOTE

1. Forward : Based on 0dBm(OMI 3.3%) optical input
Reverse : Based on -12dBm input of standard Optical Receiver
2. Forward : NTSC analog 79 channels, 256 QAM digital 75 channels
Reverse : 6 channels

■Others

NMS	Optical Input/Output Power Level
Power	DC5V, 24V
Power consumption	Optic Module : ≤5W, RF Amp Module : ≤20W

Hybrid Overlay Node

2. RF Overlay Part

Optical Characteristics		Unit	Specification
Optical Output Wavelength		nm	1550±3.5
Optical Output Level	Overlay Optical Transmitter	dBm	≥5(Based on 2 output ports)
	EDFA	dBm	≥26
	Hybrid MUX	dBm	≥17.5
Optical Connector type	Overlay Optical Transmitter	-	LC/APC
	EDFA	-	LC/APC
	Hybrid MUX	-	Input : LC/APC, Output : SC/APC

RF Characteristics	Unit	Specification
Frequency Range	MHz	54~1002
Frequency Response	dB	±0.75
Rated Input Level	dBmV	10~20
Input Attenuator Control Range	dB	15.5(0.5dB step)
RF Mode	-	AGC / MGC
CNR note 1,2	dB	≥52
CSO note 1,2	dB	≥60
CTB note 1,2	dB	≥62
X-MOD note 1,2	dB	≥60

NOTE 1. Base on 0dBm optical input
2. NTSC analog 79 channels, 256QAM Digital 75 channels
(Digital Channel frequency range : 550~1002MHz, Transmitting channel power : Less than 4~6dB comparing with analog signal)

■ Others

NMS	LD on/off, LD Output power, LD Bias Current, LD Temperature, OMI Level Controlling & Monitoring, RF Attenuator Control, RF Mode Control, Module Temperature Monitoring
Power	DC24V
Power consumption	≤10W

3. Hybrid TAP Repeater part

Optical Receiving Module	Unit	Specification
Optical Input Wavelength	nm	1610±3.5
Optical Input Range	dBm	-20 ~ -10
Frequency Range	MHz	5 ~ 42
Frequency Response	dB	±0.5
RF Output Level	dB	≥10
CNR note 1.	dB	≥45
CSO note 1.	dB	≥55
X-MOD note 1.	dB	≥70

NOTE 1. Based on -14dBm(OMI 10%) Optical Input / RF channel loading : 6 channels

Optical Receiving Module	Specification	Unit
Optical Output Wavelength	1610 ± 3.5	nm
Optical Output Power	≥4.5	dBm
Frequency Range	5 ~ 42	MHz
Frequency Response	±0.5	dB
CNR Note 2	≥50	dB
CSO Note 2	≥55	dB
X-Mod Note 2	≥70	dB

NOTE 1. WDM MUX Including WDM MUX IOSS
2. LD Drive Level : 40dBmV/CH, Measured Input of Optical Receiver Based on -6dBm, RF Channel Loading : Based on 6

Hybrid Overlay Node

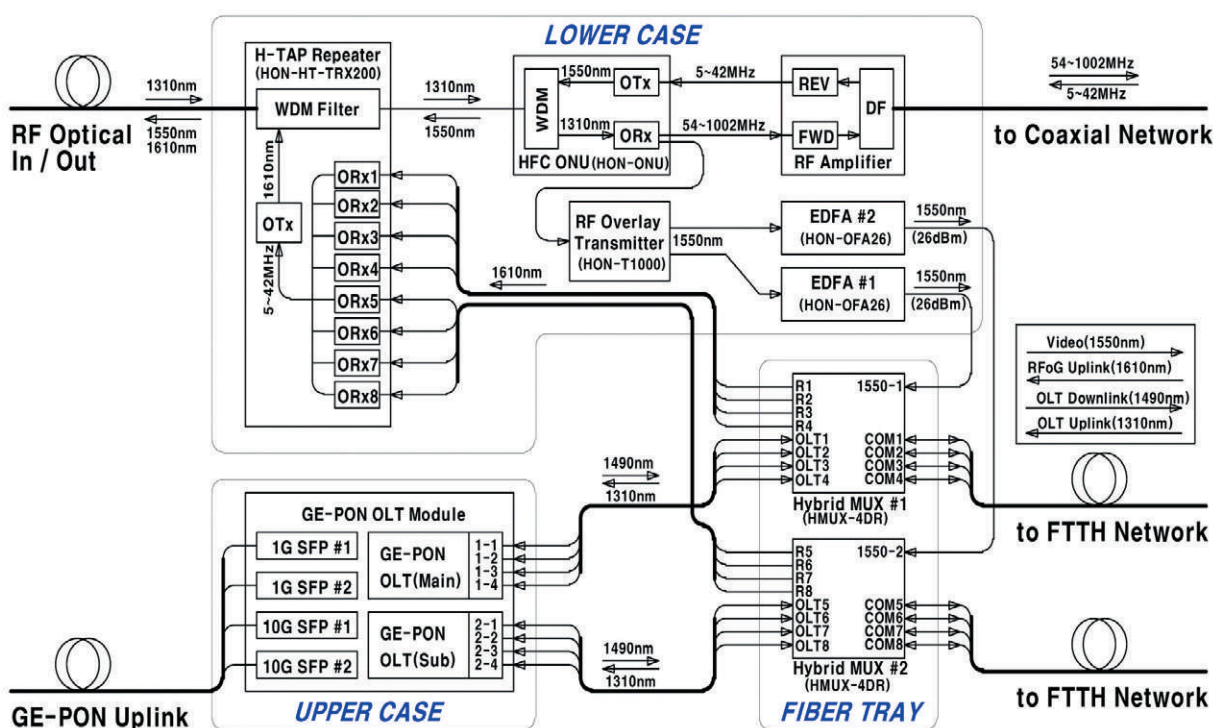
■ Others

Module	Optical Receiver Module : 8ea (Plug-in module type of main module) Optical Transmitter Module : 1ea (Fixed type in main module)
NMS	Monitoring for - LD Output Power of Optical transmitting module - Installation status of each receiver module - Optical Input power of each receiver module - Temperature of modules
Power	DC5V±0.2V
Power consumption	≤10W

4. Main Platform

Module	HFC ONU x 1 unit / RF AMP x 1 unit / Optical Transmitter x 1 unit / EDFA x 2 units / H-TAP Repeater x 1 unit(Including 8 modules of Optical Receiver) / 4 ports GE-PON OLT x 2 units / AC Power Supply x 2 units
NMS	Status Monitoring & Controlling all modules through OLT
Power	AC 60~90V (50/60Hz)
Power consumption	135W (max 160W)
Power Redundancy	Hot Swap Load Sharing Method
Size	534mm(W)x272mm(H)x200mm(D)
Weight	≤20Kg

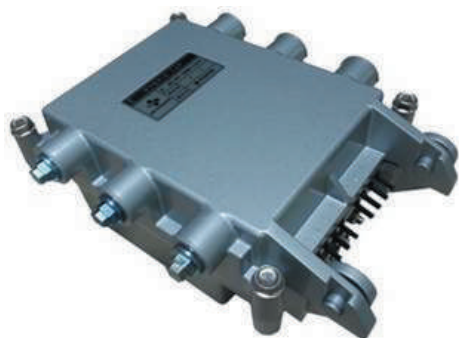
5. Block Diagram



Hybrid Tab

APPEARANCE

HT-1000



FEATURES

- Providing legacy HFC network service in RF Overlay network in connection with HON
- Adopting RFoG technology
- Providing RF service and FTTH service
- Selected by MSO in Korea for the next communication network
- Providing TV and internet service for housing area

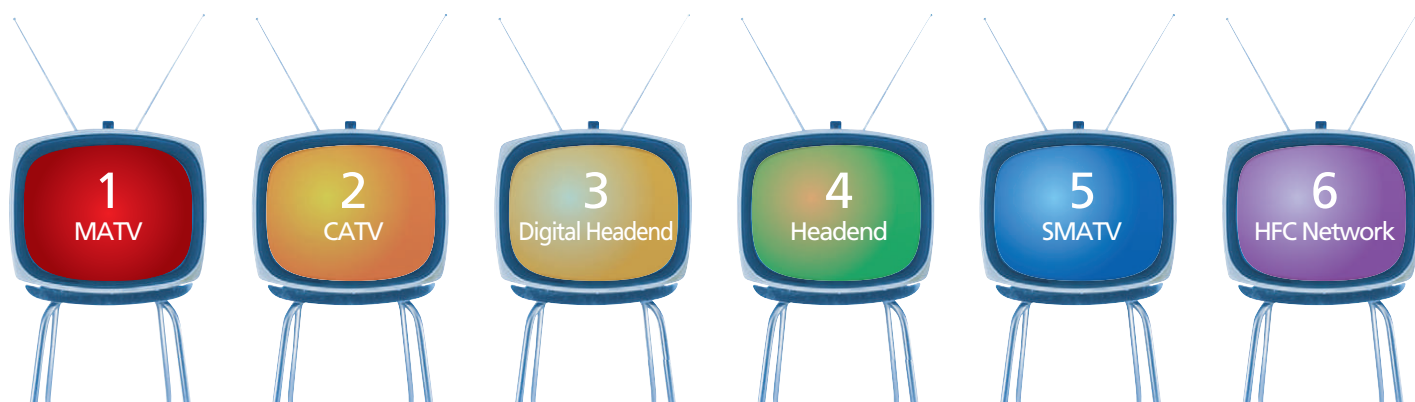
PERFORMANCE

Classification	Requirements	Unit	Forward	Reverse	Remarks
Incoming Optical Cable			Power-line mixed multifibre SMF or Multifibre SMF		
Optical Wavelength		nm	1550±3.5	1610±3.5	
Optical Input/Output Level		dBm	-6~0	≥4	
Burst Mode Transmission unit Switching Time		μsec	-	≤1.6	
AGC	RF output level change according to the change within rated optical input range	dB	±1.5		
RF Input/Output Level	RF Tap port Level	dBuV	≥85	90~95	Based on 8 ports
RF Adjustment method	Plug-in Attenuator	dB	0~20(1dB step)		
RF Slope		dB	8±2	0	
RF Frequency Range		MHz	54~1002	5~42	
Channel(max)			NTSC 79 CHs +Digital 75CHs	-	
CNR	Forward : -6dBm Reverse : -16dBm Based on NTSC 79 CHs+Digital 75CHs, Reverse 6 CHs	dB	≥44		
MER/BER	Digital Signal	dB	≥38/ ≤10-9	-	
CTB	Analog Signal	dB	≥60		
CSO	Analog Signal	dB	≥60	≥55	
X-MOD	Analog Signal	dB	≥60	≥55	
HUM	Analog Signal	dB	≥63		
Return Loss	Lowest value in transmitting frequency	dB	≥14		
Frequency Response	Highest value in transmitting frequency	dB	≤2		
Tap to Tap Loss deviation	Largest value in transmitting frequency	dB	±1		
Tap to Tap Isolation	Smallest value in transmitting frequency	dB	≥20		

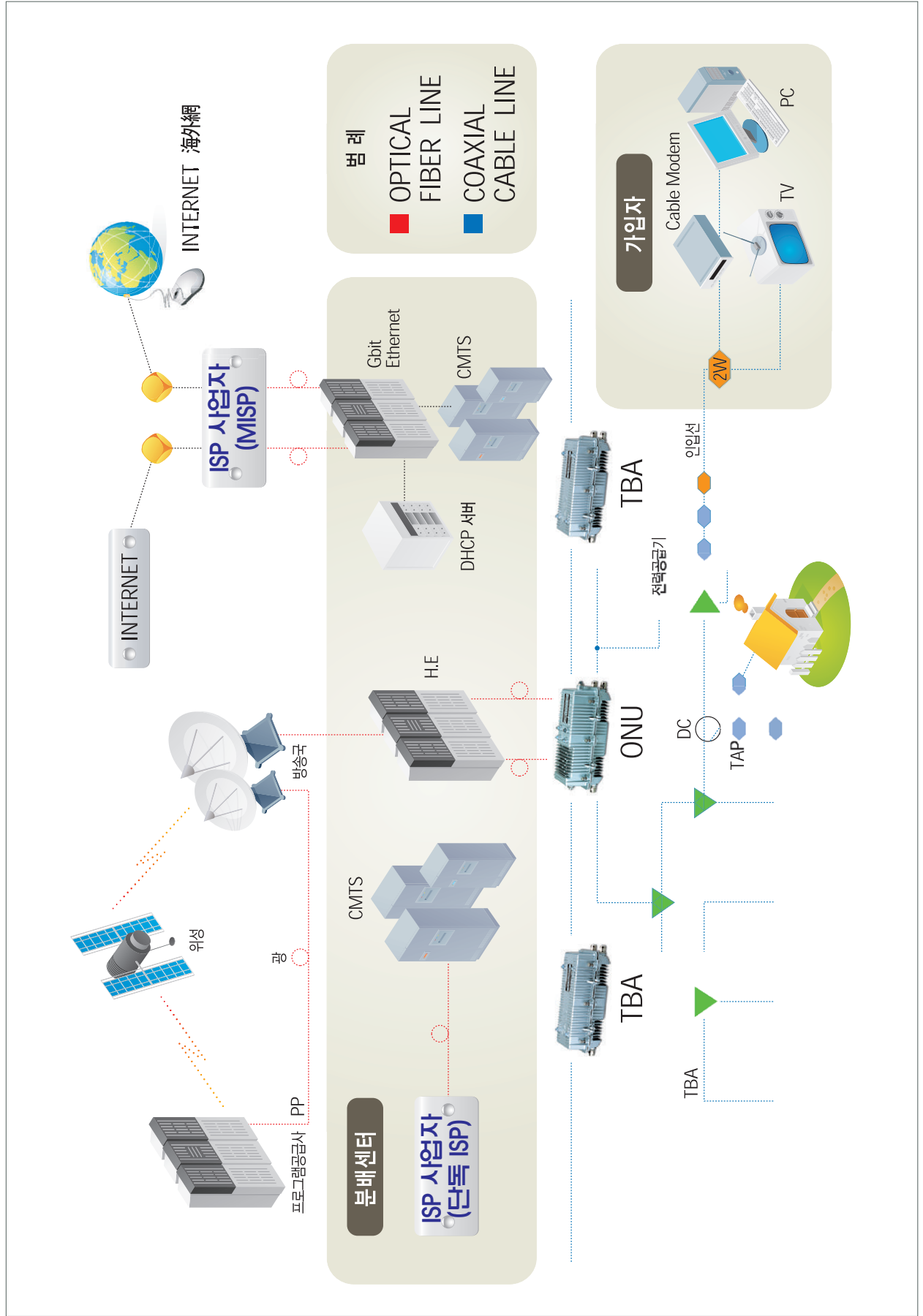
■ Others

Classification	Requirements	Unit	Specification	Remarks
Power	Square wave or Sine wave	V, W	AC 40~63(50/60Hz), ≤7W	Supplying through Power line in Optical Cable or Coaxial Cable
Temperature		°C	-35~60(Operation)	
Humidity		%	5~90	
Housing	Installation on messenger wire	-	Aluminium Die-casting, water-resistant	
Size		mm	160(W)x120(D)x203(H)	except protrusion

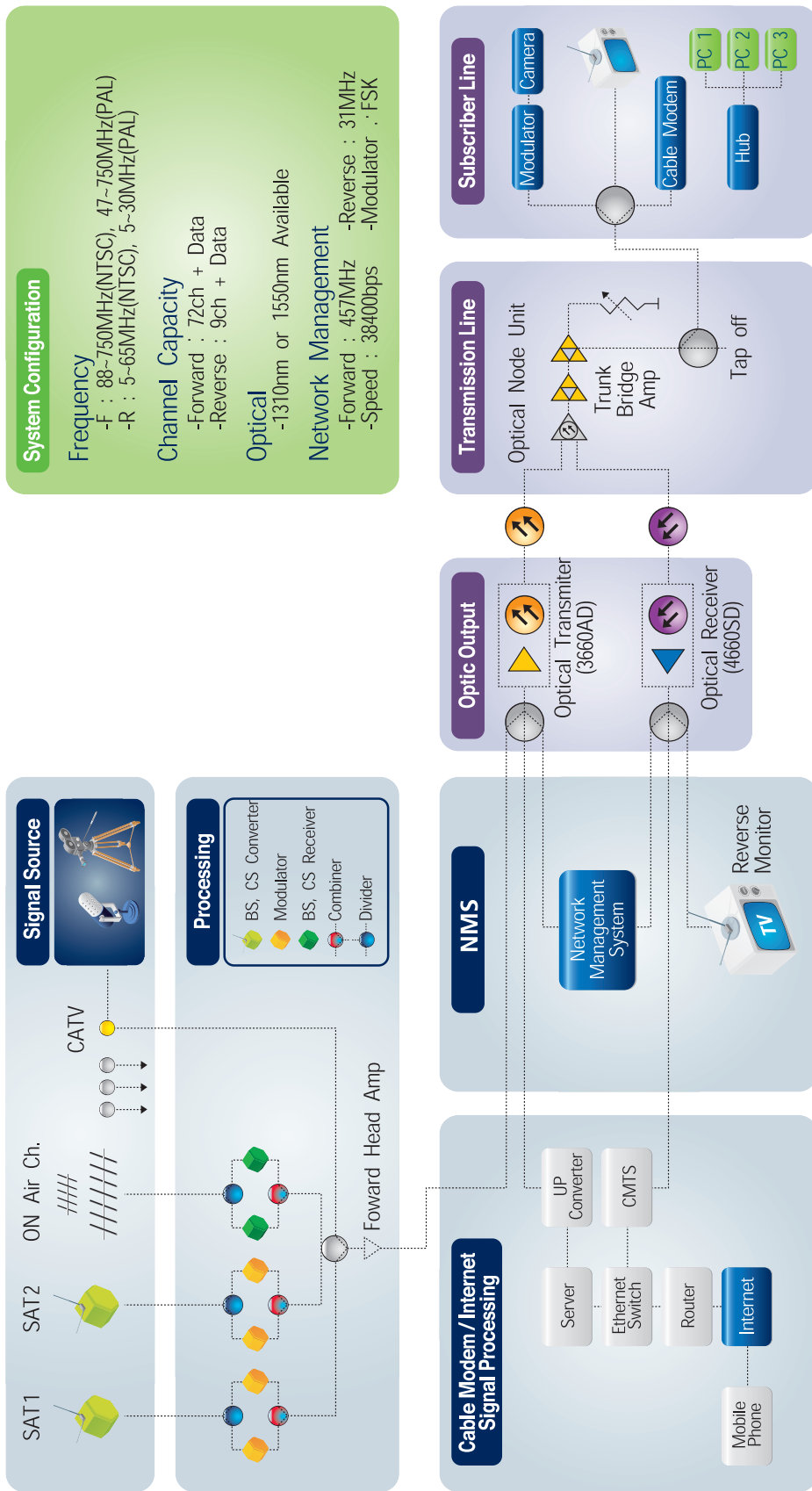
DongYang Telecom Product Steps



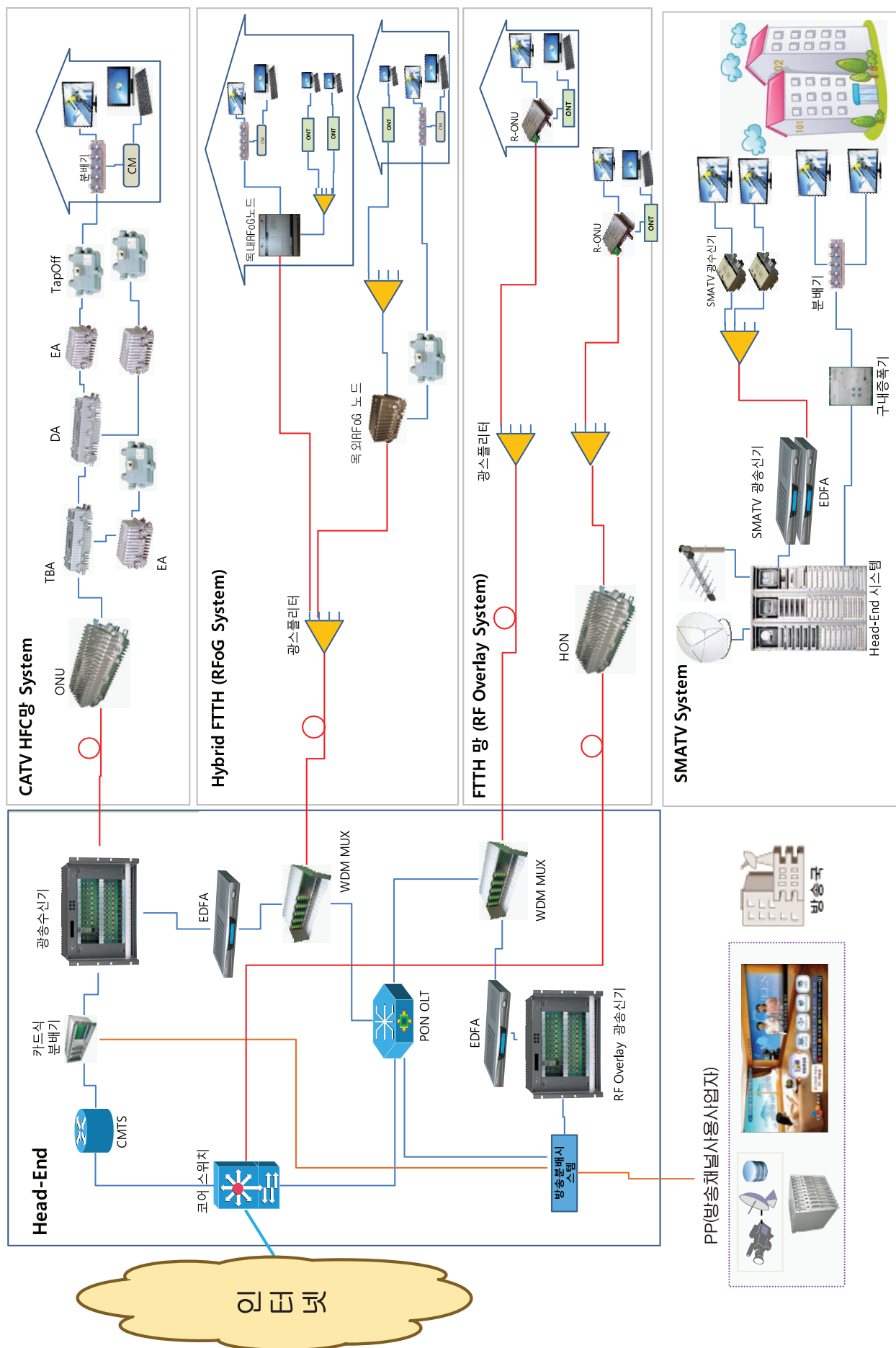
HFC System Block Diagram I



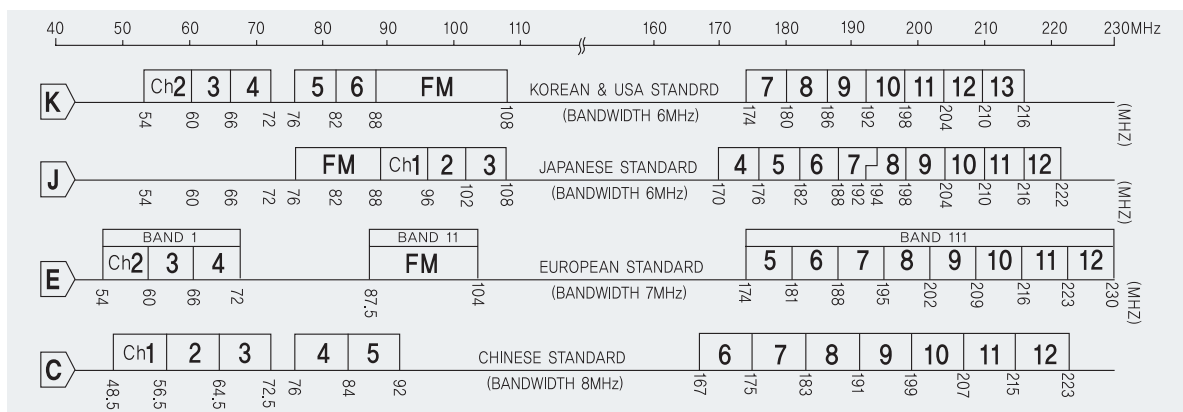
HFC System Block Diagram II



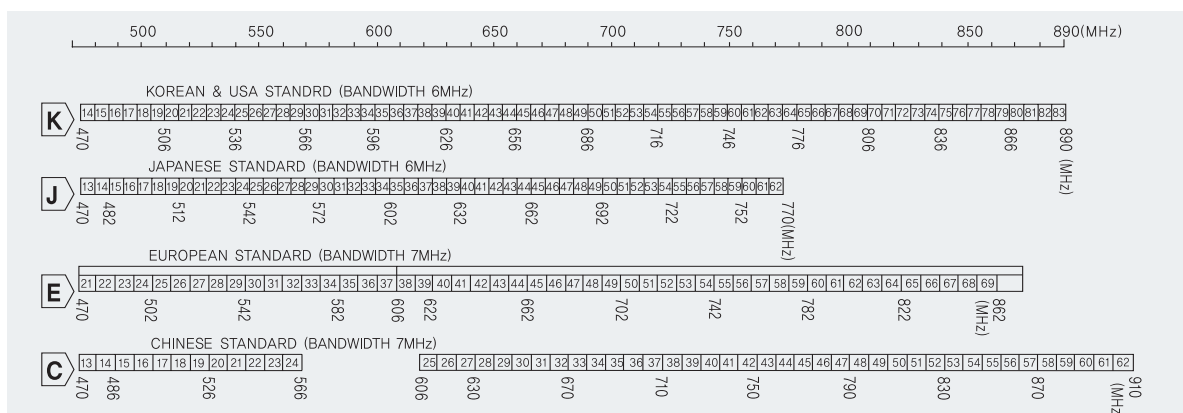
SMATV, HFC, Rfoverlay System 종합 Block Diagram



VHF TV Channels



UHF TV Channels



BS Television Channels(KOREA)

CH No	Frequency Range (GHz)	Center Frequency (GHz)	CH No	Frequency Range (GHz)	Center Frequency (GHz)	CH No	Frequency Range (GHz)	Center Frequency (GHz)
BS2	11.73316~11.76016	11.74666	BS6	11.80988~11.83688	11.82338	BS10	11.88660~11.91360	11.9001
BS4	11.77152~11.79852	11.78502	BS8	11.84824~11.87524	11.86174	BS12	11.92496~11.95196	11.93846

BS Television Channels(JAPAN)

CH No	Frequency Range (GHz)	Center Frequency (GHz)	CH No	Frequency Range (GHz)	Center Frequency (GHz)	CH No	Frequency Range (GHz)	Center Frequency (GHz)
BS1	11.71398~11.74098	11.72748	BS7	11.82906~11.85606	11.84256	BS13	11.94414~11.97114	11.95764
BS3	11.75234~11.77934	11.76584	BS9	11.86742~11.89442	11.88092	BS15	11.98250~12.00950	11.996
BS5	11.79070~11.81770	11.8042	BS11	11.90578~11.93278	11.91928			

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