HOLLAND Electronics LLC

MANUFACTURER OF PROFESSIONAL AUDIO & VIDEO CONNECTIVITY



PRODUCT CATALOG

CATV • SATELLITE • HOME THEATER • COMMERCIAL • SECURITY • BROADCAST • OEM

MESSAGE FROM THE CEO



Michael Holland, CEO, Holland Electronics LLC

Thank you for your interest in our products. We are focused on providing you with the highest level of quality at competitive prices. Our technical team and customer service representatives are committed to supporting your needs because our success is realized through your success.

I am very proud of our organization and our reputation. Since 1989, we have consistently received high marks in the areas of engineering, design, manufacturing, and customer support. We are a customer-centric team often developing specialized OEM components for specific initiatives. Our extensive experience in RF distribution has earned us long-term relationships with industry leaders in satellite television, cable television and telecommunications. We also provide a great deal of technical support to home and commercial AV integrators. Holland products can be found in many homes throughout the United States, Europe and Latin America.

We are a proud member of many trade associations and engineering consortiums, often contributing to the development of industry specifications and standards. As a result, many world-class service providers rely on the Holland name for industry expertise and quality products.

As you look through this catalog or explore our website, please feel free to call or email us for more information or our recommendations. We are an innovative group of people and we are here to serve you, our customer.

Appreciatively yours,

MICHAEL HOLLAND
FOUNDER & CEO



Holland Electronics' headquarters are located in Ventura, California

Holland Electronics is a member of the following associations:

CEDIA — CUSTOM ELECTRONIC DESIGN & INSTALLATION ASSOCIATION

SCTE — Society of Cable Telecommunication Engineers

HomePNA™

MoCA — Multimedia over Coax Alliance

HomeGrid FORUM — For any wire, anywhere in your home.™

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AMPLIFIER SELECTION CHART

MODELS	FREQUENCY (MHz)	RETURN BAND-WIDTH (MHz)	CHANNEL CAPACITY	GAIN (dB)	MAXIMUM OUTPUT (dBmV)	RETURN PATH (Gain,dB)	ADJ'S	DESCRIPTION
BROADBAND								
HDA-15	54 - 216 470 - 890	–	–	15	50 (7 Ch.)	–	–	Off-Air, CATV
HDA-25	54 - 1000	–	–	25	48 (7 Ch.)	–	–	Off-Air, CATV
HDA-25E	54 - 800	–	–	25	40 (7 Ch.)	–	Gain	Off-Air Economy
HDA-30	54 - 1000	–	–	30	50 (7 Ch.)	–	Gain	Off-Air Distribution
HDA-1000	54 - 1000	5 - 42	157	34	57 (7 Ch.)	P	Gain	Bi-Directional
CATV								
HCA-3051	54 - 550	–	77	30	45	–	Gain/Slope	CATV Hybrid Amplifier
HCA-5051	54 - 550	–	77	50	45	–	Gain/Slope	CATV Hybrid Amplifier
HCA-3086RP	54 - 860	5 - 42	134	30	41	P (-2 dB)	Gain/Slope	CATV Hybrid Amplifier
HCA-3051RK	54 - 550	–	77	30	45	–	Gain/Slope	CATV Hybrid Amplifier
HCA-3086RK	54 - 860	5 - 42	134	30	41	P (-2 dB)	Gain/Slope	CATV Hybrid Amplifier
HCA-36ERA	54 - 750	5 - 42	116	36	42	A (18 dB)	Gain/Slope	Bi-Directional, Hybrid
HCDA-1	54 - 1000	5 - 42	157	15	25	P (-1 dB)	–	Cable Drop
HCDA-2	54 - 1000	5 - 42	157	11	21.5	P (-4.5 dB)	–	Cable Drop
HCDA-4	54 - 1000	5 - 42	157	7	18	P (-8 dB)	–	Cable Drop
HCDA-1FRA	54 - 1000	5 - 42	157	15	25	A (10 dB)	–	Cable Drop, Bi-Directional
HCDA-1FRA-AG	54 - 1000	5 - 42	157	Adj 15 to -5 dB	25	Adj (-8 to 10 dB)	Gain/ Fwd-Rev	Cable Drop, Bi-Directional
HCDA-1RA	54 - 1000	5 - 42	3	-1.5 dB	–	A (10 dB)	–	Cable Drop
SATELLITE								
LA-141A LA-142A LA-143A LA-145A	250 - 2150	–	32 Trnsp + Ka	14	-14 dBm -14 dBm -14 dBm	–	Auto Gain	Auto Leveling DBS Drop Amps
NA2530A-T	250 - 2150	–	32 Trnsp + Ka	30	-1 dBm	–	–	Dual Node Amp
PA2530A-T	250 - 2150	–	32 Trnsp + Ka	30	–	–	–	Power LNB
PAL1-T PAL5-T PAL10-T	950 - 2150	–	32 Trnsp + Ka	40 40 40	-1 dBm -5 dBm -10 dBm	–	Auto Gain	Auto Leveling Gain Control
TA2330D-T	950 - 2150	–	32 Trnsp + Ka	30	-1 dBm	–	–	Generates 13/18v

P= Passive A= Active. Maximum output specified at full channel loading unless otherwise indicated.

HCA SERIES

MODELS HCA-3051 : HCA-3051RK : HCA-3086RP : HCA-3086RK : HCA-5051



MODEL HCA-3051



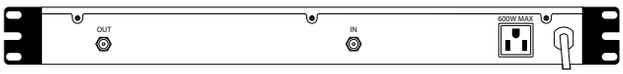
MODEL HCA-3086RP

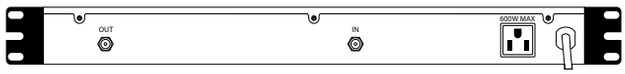


MODEL HCA-3051RK



MODEL HCA-3086RK







MODEL HCA-5051

FEATURES

- **Low-Distortion CATV Hybrid Amplifiers**
- **High-Output**
- **550 and 860 MHz Models**
- **Adjustable Gain & Slope**
- **High Gain** *(30 or 50 dB)*
- **Return Path Bi-Directional** *(Select Models)*
- **Larger Heatsink Case**

HCA SERIES

The **HCA series** amplifiers incorporate high quality push-pull, hybrid modules to provide the highest output and lowest distortion levels possible. A regulated power supply, along with an extra-large heatsink case, provide the reliability required for operation in even the most extreme environments. The **HCA series** is available in 30 or 50 dB gain, 550 or 860 MHz bandwidth and a 120 or 220VAC power supply (220VAC optional). Rack-mounted models are also available.

HCA SERIES

SPECIFICATIONS

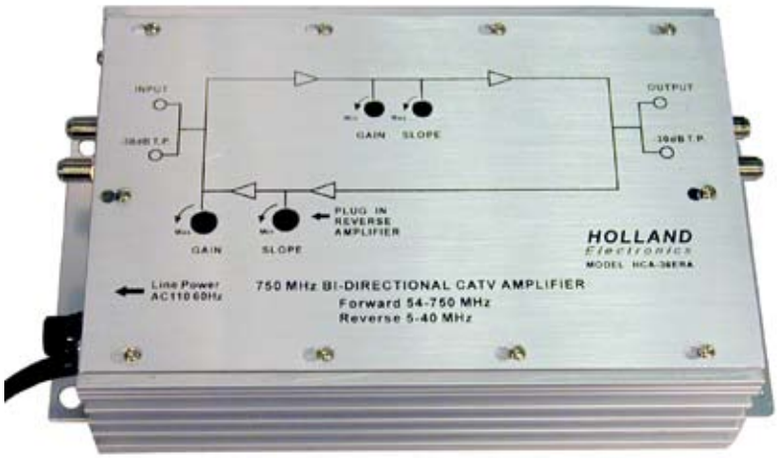
FORWARD PATH	HCA-3051*	HCA-5051	HCA-3086RP	HCA-3086RK
Frequency	54 - 550 MHz	54 - 550 MHz	54 - 860 MHz	54 - 860 MHz
Gain	30 dB	50 dB	30 dB	30 dB
Gain Adjust Range	18 dB	18 dB	18 dB	18 dB
Maximum Input	15 dBmV (77 Ch.)	-5 dBmV **	11 dBmV (134 Ch.)	11 dBmV (134 Ch.)
Maximum Output	45 dBmV (77 Ch.)	45 dBmV (77 Ch.)	41 dBmV (134 Ch.)	41 dBmV (134 Ch.)
Slope	15 dB (Adj.)	12 dB (Adj.)	15 dB (Adj.)	15 dB (Adj.)
Flatness	±1 dB	±1 dB	±1 dB	±1 dB
Noise Figure	6.5 dB	6.5 dB	6.5 dB	6.5 dB
Input Return Loss (Min.)	12 dB	12 dB	12 dB	12 dB
Output Return Loss (Min.)	12 dB	12 dB	12 dB	12 dB
Cross Modulation (XMOD)	-58 dB	-58 dB	-58 dB	-58 dB
Composite Second Order (CSO)	-75 dB	-75 dB	-75 dB	-75 dB
Composite Triple Beat (CTB)	-60 dB	-60 dB	-60 dB	-60 dB
RETURN PATH				
Frequency	–	–	5 - 42 MHz	–
Gain	–	–	Passive (-2.5 dB)	–
GENERAL				
Power Requirements	117VAC, 60Hz, 8 W	117VAC, 60Hz, 8 W	117VAC, 60Hz, 8 W	117VAC, 60Hz, 8 W
Operating Temperature	-20˚ to 60˚ Celsius	-10˚ to 50˚ Celsius	-20˚ to 60˚ Celsius	-20˚ to 60˚ Celsius
Dimensions	8” x 5.375” x 2”	7.75” x 3” x 1.75”	8” x 3” x 1.75”	17” x 3” x 1.75”
Weight	3.5 lbs.	2.55 lbs.	2.55 lbs.	4.35 lbs.

NOTE: All specifications typical unless otherwise noted

**** Rack-mount model available.***
***** Maximum input specified at full channel capacity.***
Maximum input increases as channel load decreases.

BI-DIRECTIONAL CATV AMPLIFIER

MODEL HCA-36ERA



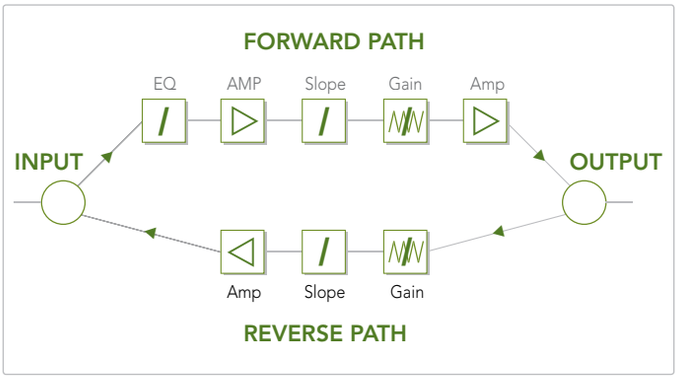
MODEL HCA-36ERA

FEATURES

- **54-750 MHz Forward Operation**
- **Bi-Directional** *(Amplified Return)*
- **Variable EQ & Gain Control** *(Input & Output)*
- **High-Output with Low-Distortion**
- **Input & Output Test Ports**

750 MHz BI-DIRECTIONAL CATV AMPLIFIER

Our highest performance CATV Amplifier provides two-way amplified capability with very low-distortion from the use of two hybrid amplifier stages with inter-stage slope and gain controls. The variable controls in both directions make this amplifier an ideal choice for use in larger MDU installations.



BI-DIRECTIONAL CATV AMPLIFIER

SPECIFICATIONS

FORWARD PATH	HCA-36ERA
Frequency	54 - 750 MHz
Gain	36 dB
Gain Adjustment Range	15 dB (Adj.)
Maximum Input (116 Ch.)	6 dBmV
Maximum Output (116 Ch.)	42 dBmV
Slope	12 dB
Flatness	±1 dB
Noise Figure	7 dB
Cross Modulation (XMOD)	-60 dB
Composite Second Order (CSO)	-65 dB
Composite Triple Beat (CTB)	-62 dB
RETURN PATH	
Frequency	5 - 42 MHz
Gain	18 dB
Adjustment Range	10 dB
Flatness	±1 dB
EQ Adjustment Range	10 dB
Maximum Input (3 Ch.)	42 dBmV
Maximum Output (3 Ch.)	60 dBmV
GENERAL	
Power Requirements	117VAC, 60Hz, 18 W
Operating Temperature	-10˚ to 60˚ Celsius
Dimensions	9.5” x 6.5” x 2.5”
Weight	5.5 lbs.

NOTE: All specifications typical unless otherwise noted

1 GHz AMPLIFIER

MODEL HDA-1000

GREAT FOR DIGITAL APPLICATIONS



MODEL HDA-1000

FEATURES

- **Ideal for Off-Air Digital Signals**
- **High-Output**
- **Bi-Directional** ***(Passive Return)***
- **34 dB Gain**
- **Wide Frequency Range** ***(54-1000 MHz)***
- **Push-Pull Circuitry**

HDA-1000 : 1 GHz BI-DIRECTIONAL AMPLIFIER

The HDA-1000 is a unique amplifier combining push-pull, high-output designs with an extended 1,000 MHz range making this amplifier applicable to CATV, off-air, wireless and RF data distribution. The surface mount design (SMD) insures reliability and performance at the highest frequencies. Separate gain and slope controls and a passive return path make this amp ideal for large homes and MDUs.

SPECIFICATIONS

FORWARD PATH	HDA-1000
Frequency	54 - 1000 MHz
Gain	34 dB
Gain Adjust Range	15 dB
Maximum Input (135 Ch.)	5 dBmV
Maximum Output (135 Ch.)	39 dBmV
Flatness	54 - 750 MHz ±1 dB 750 - 1000 MHz ±1.5 dB
Noise Figure	6 dB
Cross Modulation (XMOD)	-65 dB (77 Ch.)
Composite Second Order (CSO)	-65 dB (77 Ch.)
Composite Triple Beat (CTB)	-70 dB (77 Ch.)
RETURN PATH	
Frequency	5 - 42 MHz
Gain	Passive (-2.5 dB)
GENERAL	
Power Requirements	117VAC, 60 Hz, 6 W
Operating Temperature	-10˚ to 55˚ Celsius
Dimensions	8” x 3.375” x 2”
Weight	3 lbs.

NOTE: All specifications typical unless otherwise noted

HDA SERIES

MODELS HDA-15 : HDA-25 : HDA-25E : HDA-30



MODEL HDA-15



MODEL HDA-25/HDA-25E



MODEL HDA-30

FEATURES

- **High Input / Output Capability**
- **Switchable FM Trap** *(HDA-25,30)*
- **Low Distortion**
- **Adjustable Gain** *(HDA-30)*

HDA-15: 15 dB VHF/UHF AMPLIFIER

The **HDA-15** is an all purpose split-spectrum amplifier for home or small system applications requiring performance at an economical price.

HDA-25: 25 dB HIGH-OUTPUT AMPLIFIER

The **HDA-25** is a full-spectrum, high-output, general-purpose amplifier. The high-output capability provides lower distortion than economy models while maintaining quality and reliability for the most sophisticated applications.

* Also available in economy model HDA-25E.

HDA-30: 30 dB OFF-AIR, MDU AMPLIFIER

The **HDA-30** was been specifically designed for the high-end home distribution market where a flat, full bandwidth amplifier is required. The low noise and high-output capability make this amplifier ideal for systems with either weak or strong input signals. Ideal for off-air digital signals.

SPECIFICATIONS

FORWARD PATH	HDA-15	HDA-25	HDA-25E	HDA-30
Frequency	54 - 216 MHz, 470 - 890 MHz	54 - 1000 MHz	54 - 800 MHz	54 - 100 MHz
Gain	15 dB (54 - 216 MHz) 12 dB (470 - 890 MHz)	25 dB	25 dB (54 - 450 MHz) 22 dB (450 - 800 MHz)	30 dB
Gain Adjustment Range	–	–	–	8 dB
FM Trap	–	20 dB (Switchable)	20 dB (Switchable)	25 dB (Switchable)
Maximum Input (7 Ch.)	35 dBmV VHF, 37 dBmV UHF	23 dBmV	15 dBmV	28 dBmV
Maximum Output (7 Ch.)	50 dBmV	48 dBmV	40 dBmV	50 dBmV
Noise Figure	5 dB VHF, 6 dB UHF	5 dB VHF, 7 dB UHF	–	–
GENERAL				
Power Requirements	117VAC, 60 Hz, 3 W	117VAC, 60 Hz, 2 W	117VAC, 60 Hz, 2 W	117VAC, 60 Hz, 3 W
Operating Temperature	0˚ to 50˚ Celsius	-20˚ to 60˚ Celsius	-20˚ to 60˚ Celsius	0˚ to 50˚ Celsius
Dimensions	4.5” x 3.25” x 1.25”	5.5” x 3” x 1.625”	5” x 3.25” x 1.5”	4.5” x 3.25” x 1.25”
Weight	1 lb.	1.25 lbs.	.9 lb.	1 lb.

NOTE: All specifications typical unless otherwise noted

HCDA SERIES

MODELS HCDA-1/RA/FRA/FRA-AG : HCDA-2 : HCDA-4



MODEL HCDA-1/RA/FRA/FRA-AG



MODEL HCDA-2



MODEL HCDA-4

FEATURES

- **Ideal for Off-Air & Digital Signal Pre-Amplification**
- **1 GHz Bandwidth**
- **Low Noise Figure: 3 dB**
- **Adjustable Gain in Both Directions** *(HCDA-1FRA-AG)*
- **High Return Loss** *(20 dB)*
- **Surge Protected** *(IEE C62.41-1991, All Ports)*
- **130 dB RFI Shielding**
- **LED Power Indicator**
- **Hermetically-Sealed Case & Ports**
- **Direct DC Powering or Cable Multiplexed** *(Optional inserter needed)*
- **Plug-In Power Supply Included**

HCDA-1/RA/FRA/FRA-AG, 2, 4
BI-DIRECTIONAL CABLE DROP AMPLIFIER

The HCDA Series is our top of the line CATV drop/subscriber amplifier. The HCDA amplifiers are unsurpassed in environmental ruggedness with sealed F-ports, powder-coated paint and a RFI hermetically-sealed back plate. This amplifier comes in one, two and four-output port models, with active or passive return.

The HCDA-1FRA is the same as the HCDA Series, with the addition of reverse amplification to overcome return path loss.

The HCDA-1RA provides amplification to the return path only, forward path is passive.

HCDA POWERING OPTIONS

The **HCDA-PI** power inserter allows amplifier powering through an existing output cable.



MODEL HCDA-PI

HCDA SERIES

SPECIFICATIONS

FORWARD PATH	HCDA-1	HCDA-2	HCDA-4	HCDA-1FRA	HCDA-1FRA-AG	HCDA-1RA
Frequency	54 - 1000 MHz	54 - 1000 MHz	54 - 1000 MHz	54 - 1000 MHz	54 - 1000 MHz	54 - 1000 MHz
Gain	15 dB	11 dB	7 dB	15 dB	15 dB to -5 dB (adjustable)	-1.5 dB
Maximum Input (157 Ch.)	7 dB	7 dB	7 dB	7 dB	7 dB	–
Maximum Output (79 Analog Ch. & 33 Digital Ch.)	25 dBmV	21.5 dBmV	18 dBmV	25 dBmV	25 dBmV	–
Slope	–	–	–	–	–	–
Flatness	±1 dB	±1 dB	±1 dB	±1 dB	±1 dB	± 1 dB
Group Delay	See Table Below	See Table Below	See Table Below	–	–	–
Noise Figure	3 dB	3 dB	3 dB	3 dB	3.5 dB	–
Input Return Loss	20 dB	20 dB	20 dB	20 dB	20 dB	18 dB
Output Return Loss	20 dB	20 dB	20 dB	20 dB	20 dB	18 dB
Cross Modulation (XMOD)	-75 dB	-75 dB	-75 dB	-75 dB	-75 dB	–
Composite Second Order (CSO)	-62 dB	-62 dB	-62 dB	-62 dB	-62 dB	–
Composite Triple Beat (CTB)	-75 dB	-75 dB	-75 dB	-75 dB	-75 dB	–
RETURN PATH						
Frequency	5 - 42 MHz	5 - 42 MHz	5 - 42 MHz	5 - 42 MHz	5 - 42 MHz	5 - 42 MHz
Gain	Passive (-1 dB)	Passive (-4.5 dB)	Passive (-8 dB)	10 dB	-8 dB to 10 dB (adjustable)	10 dB
Flatness	± .5 dB	± .5 dB	± .5 dB	±1 dB	±1 dB	± 1 dB
Group Delay	See Table Below	See Table Below	See Table Below	–	–	–
Maximum Input (1 Ch.)	–	–	–	45 dBmV	45 dBmV	45 dBmV
Maximum Output (1 Ch.)	–	–	–	55 dBmV	55 dBmV	55 dBmV
GENERAL						
Power Requirements	12VDC, 2.4W	12VDC, 2.4W	12VDC, 2.4W	12VDC, 3.6W	12VDC, 3.6W	12VDC, 1.2W
Operating Temperature	-40˚C to 60˚C	-40˚C to 60˚C	-40˚C to 60˚C	-40˚C to 60˚C	-40˚C to 60˚C	-40˚C to 60˚C
Dimensions	2.5" x 4.5"	2.5" x 4.5"	2.5" x 4.5"	2.5" x 4.5"	2.5" x 4.5"	2.5" x 4.5"
Weight	1 lb. (w/power supply)	1 lb. (w/power supply)	1 lb. (w/power supply)	1 lb. (w/power supply)	1 lb. (w/power supply)	1 lb. (w/power supply)

GROUP DELAY : FORWARD PATH (HCDA 1, 2 & 4 : 54 - 1000 MHz)	
20 ns Max.	For Ch. 2, 3.58 MHz Span
10 ns Max.	For Ch. 3, 3.58 MHz Span
5 ns Max.	For All Other Channels, 3.58 MHz Span
GROUP DELAY : RETURN PATH (HCDA 1, 2 & 4 : 5 - 42 MHz)	
20 ns Max.	5 - 42 MHz, 2 MHz Span
5 ns Max.	10 - 36 MHz, 1 MHz Span

NOTE: All specifications typical unless otherwise noted

LA SERIES

MODELS LA-10 : LA-520 : LA-2150H



MODEL LA-10



MODEL LA-520



MODEL LA-2150H

FEATURES

- **Low Noise Figure**
- **Wideband & High-Output Models**
- **Coax Line Powered**
- **Optional Power Supply / Inserter** *(PS-10)*
- **Hermetically Sealed**

LA SERIES POWERING OPTIONS



MODEL PS-10

The **PS-10** is a UL-listed power supply and inserter for the **LA Series** line amplifiers or other DC-line-powered amplifiers.

LINE POWERED AMPLIFIERS

When extra amplification is needed, Holland Electronics' **LA Series** in-line amplifiers are the choice of industry professionals worldwide. The **LA Series** can be powered by existing line voltage, from satellite receivers or with the optional **PS-10** power supply / inserter.

LA-10

The **LA-10** is a continuous bandwidth 5-900 MHz with a 10 dB gain line amplifier and medium output capability. Ideal for off-air digital signal pre-amplification.

LA-520

The **LA-520** is our most versatile line amplifier with wideband capabilities from 50 to 2050 MHz with a 20 dB gain.

LA-2150H

The **LA-2150H** high-output line amplifier has been specifically designed for satellite systems with a frequency range of 950 to 2150 MHz with a 20 dB gain.

LA SERIES

SPECIFICATIONS

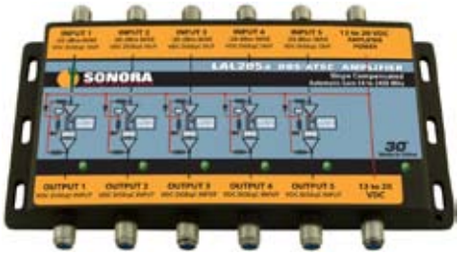
FORWARD PATH	LA-10	LA-520	LA-2150H
Frequency	5 - 900 MHz	50 - 2050 MHz	950 - 2150 MHz
Gain	10 dB	20 dB	20 dB
Maximum Input	20 dBmV (7 Ch.)	-38 dBm (16 Trns.)	-35 dBm (16 Trns.)
Maximum Output	30 dBmV	-18 dBm (16 Trns.)	-15 dBm (16 Trns.)
Noise Figure	4 dB	5 dB	5 dB
GENERAL			
Power Requirements	12 - 18VDC @ 40 mA	12 - 18VDC @ 50 mA	12 - 18VDC @ 50 mA
Dimensions	2.3” x .75”	2.25” x 1” x .75”	3.5” x 1” x .75”
Weight	.05 lb.	.15 lb.	.15 lb.

SATELLITE AMPLIFIERS

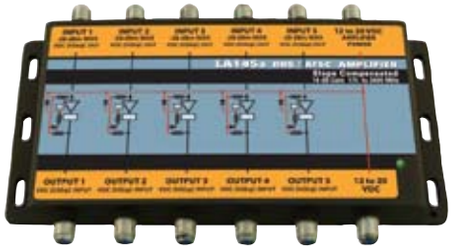
MODELS PAL*-T : LAL-* : LA-*



PAL SERIES



LAL SERIES



LA SERIES

FEATURES

- **Automatic Gain Control** *(PAL Series)*
- **High Return Loss**
- **Flat Signal Response**
- **Slope Compensation**
- **Multiple Powering Options**
- **Ka & Ku Bands**

AUTO GAIN CONTROL DISTRIBUTION AMPLIFIERS

The **PAL series** amplifiers provide unmatched auto leveling/auto gain performance. Within fractions of a second, they respond to signal strength variations due to rain fade and atmospheric variables to provide a constant and stable fixed output; making them ideal for MDU distribution. The PAL amplifiers come in -1, -5, -10, and -20 dBm power outputs.

LINE AMPLIFIERS - AUTO-LEVELING

The **LAL20a series** amplifiers are designed to handle multiple field powering options. As line amplifiers they pass voltage and 22 kHz tone from RF output to RF input and from RF input to RF output. Each polarity is independently powered. DC looping ports allow a single high capacity power supply to power multiple amplifiers. Each polarity draws 125 mA.

LINE AMPLIFIERS

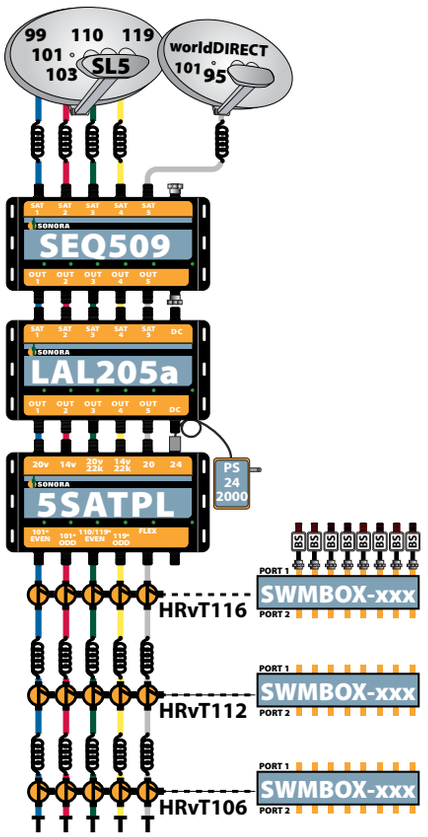
The **LA14*R-T series** amplifiers compensates for 150 feet of RG-6 coax cable. The **LA28a series** compensates for 300 feet with 28 dB gain & 6 dB slope. These amplifiers are receiver powered, outdoor capable and pass 22 kHz/DiSEqC and 2 MHz control signals.

SATELLITE AMPLIFIERS

SPECIFICATIONS

FORWARD PATH	PAL1-T,5-T,10-T,20-T	LAL205A-T	LA-141R-T,142R
Frequency	PAL 1, 5, 10, 20 (250 - 2150 MHz) PAL 20 (950 - 2150 MHz)	54 - 2150 MHz	54 - 2400 MHz (2 - 40 MHz Return)
Gain	20 dB (PAL-1,5,10) 30 dB (PAL-20)	30 dB	14 dB (Forward) -1 dB (Return)
Gain Adjust Range	Auto-Leveling	Auto-Leveling	Fixed
Maximum Input (32 Trns.)	-21, -25, -29, -31, -35 dBm	-28 dBm	-16 dBm
Maximum Output (32 Trns.)	-1, -5, -10, -20, -30 dBm	-20 dBm	-2 dBm
Slope	7 dB	7 dB	4 dB
Flatness	± 0.2 dB	± 0.2 dB	± 0.2 dB
Noise Figure	7 dB	7 dB	7 dB
Input Return Loss	12 dB	12 dB	15 dB
Output Return Loss	13 dB	12 dB	13 dB
GENERAL			
Power Requirements	14 - 20VDC	12 - 20VDC	12 - 22VDC
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	5.5” x 4.5” x 1.5”	9.5” x 5.5” x 7/8”	4” x 3” x .75”
Weight	1.8 lbs.	1 lb.	.5 lb.

NOTE: All specifications typical unless otherwise noted
**** Please see the satellite section (page 95) for satellite accessories***
Multiple port configurations available for LAL Series



COAXIAL DROP CABLE

MODELS RG6-60-** : RG11-*



PULL REEL-IN-BOX
MODEL RG6-60-PR*



REEL
MODEL RG6-60-*R



BOX
MODEL RG6-60-*B

Holland Electronics' premium drop cable has a copper-clad steel center conductor (18 AWG), aluminum braid (min. 60%), gas-injected foam dielectric and a UV-inhibited PVC jacket. All drop cable is swept tested to 2250 MHz.

	1st Asterisk = Color	2nd Asterisk = Packaging
MODEL	*	*
RG6-60-**	B or W	R, B or PR
RG6-60-*M	B or W	Messenger *(Only Available on Reels)*
RG11-60-*	B or W	Reel Only
RG11-60-*M	B or W	Messenger *(Only Available on Reels)*

COLORS: B = Black / W = White **PACKAGING:** R = Reel / B = Box / PR = Pull Reel-in-Box

SPECIFICATIONS - RG-6

FREQUENCY (MHz)	5	300	500	1000	2250
Insertion Loss dB / 100 ft.	0.91	3.55	4.66	6.55	10.1
Return Loss dB	30	27.5	25	22.5	20

PRECISION MINI COAXIAL CABLE

MODELS HVS-1* : HVS-3 : HVS-5 : 1855940* : 1855941 : 1855942 : 1855943

HOLLAND ELECTRONICS' PRECISION MINI COAXIAL CABLE

Holland Electronics' Precision Mini Coaxial Cable is the cost-effective solution for high-density, precision cabling. The HVS Series uses a 23 AWG solid copper center conductor, bonded foil and 95% tinned copper braid. This cable is 50% smaller than standard RG-6 coaxial cable and is ideal for making your own custom jumpers.



MODEL HVS-1*



MODEL HVS-3



MODEL HVS-5

HOLLAND VIDEO SELECT	REEL SIZE	BUNDLE	O.D. TYPICAL	COLORS
HVS-1*	250' & 1000' Reels Available	Single Conductor	.159"	R, G, BL, Y, W, BK
HVS-3-250	250' Reels	3 Conductor	.425"	R, G, BL
HVS-5-250	250' Reels	5 Conductor	.535"	R, G, BL, Y, W

* indicate color

Other custom bundles available. Please call for details.
See page 23 for mini connectors.

YR940 SERIES FROM BELDEN (1855 SERIES)

Holland Electronics is proud to offer **YR940** mini coaxial cable. The **YR940** mini cable is a precision 75 ohm coaxial cable with a 23 AWG solid copper center conductor, bonded foil, and a 95% tinned copper braid (enabling its SDI rating) and comes in a variety of colors. It is stocked individually as well in 2, 3, 5, 8, 10, 12 and 16-pack bundles. Custom bundle cables are also available. The **YR940 Series**, when matched with our 1855 connectors, (pg. 23), provide the perfect solution for your A/V applications.



MODEL 1855940*



MODEL 1855941



MODEL 1855942



MODEL 1855943

YR940 SERIES	REEL SIZE	BUNDLE	O.D. TYPICAL	COLORS
1855940-*	250' & 1000' Reels Available	Single Conductor	.159"	BL, BK, BR, G, GR, O, R, V, W, Y
1855941	250' & 1000' Reels Available	3 Conductor	.416"	R, G, BL
1855942	250' & 1000' Reels Available	5 Conductor	.518"	R, GR, BL, Y, W
1855943	250' & 1000' Reels Available	10 Conductor	.815"	All 10 Colors

1855940-* available in 10 different colors.

Other bundles available. Please call for part number and pricing.

MADE IN USA

MAXIMUM TRANSMISSION DISTANCE (FT)						
Distance in Feet (Max.)	1000	910	750	650	530	210
Application	Composite NTSC	Composite PAL	Component Video	Component Widescreen	Component Widescreen	HDTV
Meets Specification	SMPTE 259M	ITU-R BT.601	SMPTE 259M	SMPTE 259M	SMPTE 344M	SMPTE 292M

CUSTOM JUMPERS & MOLDED PATCHCORDS

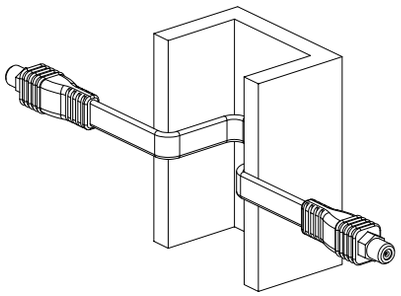
MODELS 144823 : JRR-*D : JRR-*T : J72-RGB : J72-S : J144-S : HDMI6 : HVS-DOC6 : SV-RCA : RCA-YF : RCA-Y

WINDOW/DOOR FLAT JUMPER CABLE (PATENT-PENDING)

Model **144823** is a rail-protected coaxial cable jumper assembly for use in doors and window jams. This patent-pending rail system protects the precision teflon coaxial cable from deformation due to bending or repetitive impact within a window or door frame.



MODEL 144823



Great for use when drilling through walls is not possible. The cable bends through windowsill or door jam.

PATCHCORDS

All of Holland Electronics' pre-molded jumper cables use the highest quality RCA, F and S-Video connectors covered with a flexible rubber strain relief boot.



MODEL JRR-3D, -6D, -12D
3', 6' & 12' Dual RCA Audio Cables



MODEL JRR-3T, -6T, -12T
3', 6' & 12' Triple RCA A/V Cable



MODEL J72-RGB
6' Component RGB Video Cable



MODELS J72-S & J144-S
6' & 12' Single S-Video Cable



MODEL HDMI6
6' HDMI Cable



MODEL HVS-DOC6
6' Optical Cable



MODEL SV-RCA
S-Video breakout adapter



MODEL RCA-YF
Two male, one female



MODEL RCA-Y
Two female, one male

MODEL	LENGTH	NO. OF CABLES
JRR-3D	3 ft.	Dual
JRR-3T*	3 ft.	Triple
JRR-6D	6 ft.	Dual
JRR-6T*	6 ft.	Triple
JRR-12D	12 ft.	Dual
JRR-12T*	12 ft.	Triple

MODEL	LENGTH	NO. OF CABLES
J72-S (S-VIDEO)*	6 ft.	Single
J72-RGB*	6 ft.	Triple
J144-S (S-VIDEO)*	12 ft.	Single
HDMI6	6 ft.	Single
HVS-DOC6	6 ft.	Single
SV-RCA	6 in.	Single
RCA-YF	6 in.	Single
RCA-Y	6 in.	Single

Standard patchcords are nickel plated, premium are available with gold plating. Triple Patchcords have two audio and one RG-59 video cable.

* = Gold plated video cable

JUMPER ASSEMBLIES

CUSTOM JUMPER ASSEMBLIES

Holland Electronics offers a variety of precision custom jumpers in several sizes and cable types. Jumpers are also available using our patented SuperLok compression or one-piece crimp configurations. Many connector types are available including F, RCA and SMB in straight and right-angled models. A wide selection of cable is also available.



Call us to begin building your own Custom Jumpers!

MODEL	LENGTH	COLOR	CABLE	CONNECTOR
J*-*-*-*	In Inches	Multiple Colors Available	RG-59, RG-6,RG-11, 1855, etc.	F, RCA, BNC, SMB, etc.

EXAMPLE: J12-BK-59-F (12" Black RG-59 Jumper with F-Connector)

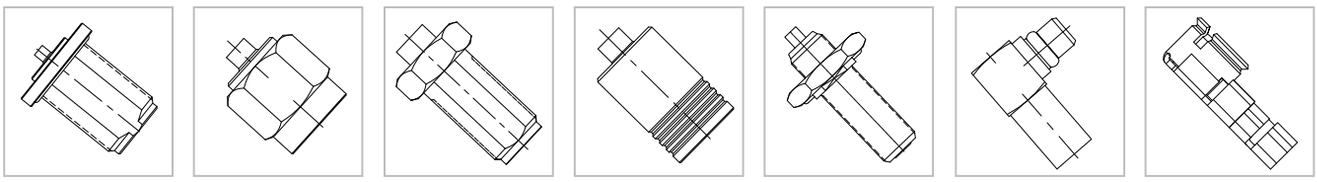
MICRO CABLE JUMPER ASSEMBLIES

Our low-profile HMCC interconnect system provides a low cost, micro-miniature option in RF transmission from board-to-board or board-to-panel. Custom-made jumpers use a Teflon coaxial cable and have machine-processed, low-profile 90 degree snap-on connectors to mate with tape-and-reel, SMT receptacle jacks.



FEATURES

- **DC - 6 GHz**
- **1.3 MM Cable O.D.**
- **Teflon Cable Provides Wide Temperature Range Capability**
- **50 or 75 ohm**



NJ SMAP SMAJ SMBP FFEM MMCX UFLP

Connector 1 + Connector 2 + Cable Length = Your Custom Jumper

SLCU SERIES COMPRESSION CONNECTORS

MODELS SLCU-* : SLCU-*RCA : SLCU-*BNC



SLCU-* SERIES
F TYPE



SLCU-*RCA SERIES
RCA TYPE



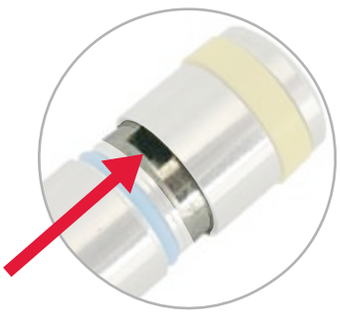
SLCU-*BNC SERIES
BNC TYPE

FEATURES

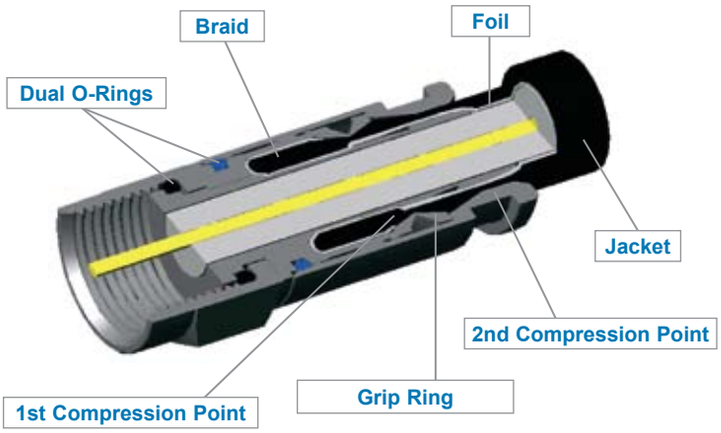
- **All-Metal Construction**
- **Dual O-Ring Moisture Sealing** *(F Type)*
- **Dual Compression Points**
- **Patented Cable Viewing Window**
- **Patented Internal-Grip Ring**
- **1-Piece Fixed Pin Design for BNC & RCA**
- **Color-Coded Application Bands** *(SRR)*

SUPERLOK COMPRESSION CONNECTORS

The **Superlok™** series compression connector utilizes two independent compression points to seal and hold the coaxial cable to the connector. Our patented viewing window allows users to determine when complete cable insertion has been achieved prior to compression.



SIDE VIEWING WINDOW
Patented cable-insertion viewing window helps to ensure cable is fully seated inside of connector.



Applicable Patents - reference: B / J / T - See page 111 for patent details

SLCU SERIES COMPRESSION CONNECTORS

SLCU IDENTIFICATION



1. Marking grooves used to indicate cable braid configuration.
2. Colored-front O-Rings for visual verification of cable type.
   (Also provides improved moisture sealing)
3. Rear groove for SRR marking bands to indicate application.

CABLE TYPE	MARKING (1)	ID (2)
Standard 6	No Grooves	Blue O-Ring
Tri-Shield 6	1 Groove	Black O-Ring
Quad-Shield 6	2 Grooves	Green O-Ring
Triple O-Ring 6	3 Grooves	Blue O-Ring
Triple O-Ring Quad-Shield 6	3 Grooves	Green O-Ring

CABLE TYPE	MARKING (1)	ID (2)
Standard 59	No Grooves	Red O-Ring
Tri-Shield 59	1 Groove	Yellow O-Ring
Quad-Shield 59, HEC2	2 Grooves	Yellow O-Ring
Standard 11	No Grooves	Black O-Ring
Quad-Shield 11	2 Grooves	Green O-Ring

SPECIFICATIONS

ELECTRICAL	
Frequency	DC - 3 GHz
Insertion Loss (Max)	.1 dB
Return Loss (Min)	30 dB
MECHANICAL	
Material	Brass
Cable Strip Length	1/4" x 1/4"

NOTE: All specifications typical unless otherwise noted

HOLLANDS' MALE F SUPERLOK™ CONNECTORS COMPLY WITH SCTE 123 2006 AND HAVE BEEN TESTED TO THE FOLLOWING SPECIFICATIONS:

SCTE 60 2004	Moisture Migration	Pass
SCTE 48-1 2007	Shielding	>90 dB @ 1002 MHz
SCTE IPS-TP-406	Salt Spray	Pass
SCTE IPS-TP-400	Tightening Torque	Pass
SCTE 73 2007	Insertion Force	< 20 lbs.
SCTE 04 2007	Return Loss	> 30 dB @ 1002 MHz

SRR-* REPLACEABLE BANDS (note: * = Color)

Easily identify application source with **SRR Marking Bands.**



BL = BLUE	W = WHITE	B = BLACK	Y = YELLOW	G = GREEN	P = PURPLE	R = RED

EXAMPLE: Yellow=Video, Red=Audio, etc.

*** SEE SUPPORT SECTION OF OUR SITE (WWW.HOLLANDELECTRONICS.COM/SUPPORT) FOR CONNECTOR INSTALLATION INSTRUCTIONS.**

CONNECTOR SELECTION CHART

MODELS SLCU-* : SLCU59-* : SLC6-*



SERIES 59 CABLE

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLCU-59	F Male	Nickel	21 mm
SLC59-HEC	F Male / Tri-Shield	Nickel	21 mm
SLCUHEC2	F Male / Head-End	Nickel	21 mm
SLC59-RCA	RCA Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC59-RCAG	RCA Male / Fixed Pin / 1 Piece	Gold	29.8 mm
SLC59-BNC	BNC Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC59-BNCG	BNC Male / Fixed Pin / 1 Piece	Gold	29.8 mm



SERIES 6 CABLE

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLCU-6	F Male	Nickel	21 mm
SLCU-6T	F Male / Tri-Shield	Nickel	21 mm
SLCU-6Q	F Male / Quad-Shield	Nickel	21 mm
SLCU-6-O	F Male w / Triple O-Ring	Nickel	21 mm
SLC-6M	F Male / Short	Nickel	20.1 mm
SLCU-6QO	F Male / Quad-Shield w/ Triple O-Ring	Nickel	21 mm
SLC6-RCA	RCA Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC6-RCAG	RCA Male / Fixed Pin / 1 Piece	Gold	29.8 mm
SLC6Q-RCA	RCA Male / Fixed Pin / Quad-Shield / 1 Piece	Nickel	29.8 mm
SLC6Q-RCAG	RCA Male / Fixed Pin / Quad-Shield / 1 Piece	Gold	29.8 mm
SLC6-BNC	BNC Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC6-BNCG	BNC Male / Fixed Pin / 1 Piece	Gold	29.8 mm
SLC6Q-BNC	BNC Male / Fixed Pin / Quad-Shield / 1 Piece	Nickel	29.8 mm
SLC6Q-BNCG	BNC Male / Fixed Pin / Quad-Shield / 1 Piece	Gold	29.8 mm

**** Series 6 photos shown with optional SRR bands.***

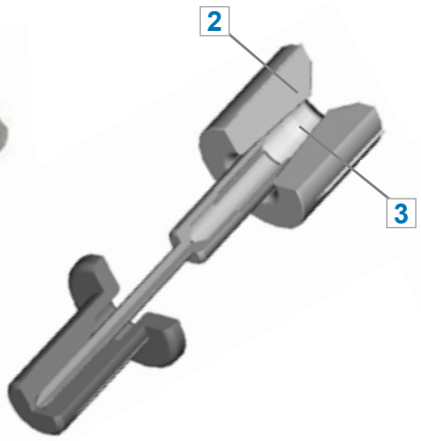
**** See support section of our site (www.hollandelectronics.com/support) for connector installation instructions.***

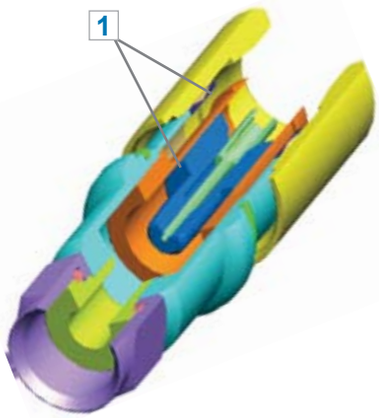
SLC-11 SERIES COMPRESSION CONNECTOR

MODELS SLC-11 : SLC-11Q



SLC-11/SLC-11Q





SLC-11 shown above
** See "SLC-11 Features" below*

FEATURES

- **Dual Compression Points**
- **Internal Center Conductor Guide**
- **High Center Conductor Holding Force** *(3 lbs.)*
- **Lower Cable Insertion Force**
- **All Metal Construction**

SLC-11 SERIES FOR RG-11 CABLE

Holland Electronics' SLC-11 utilizes an advanced pin capture mechanism, making it an ideal choice for professional RG-11 terminations. The SLC-11 features a sliding pin design that avoids blind mating and ensures positive center conductor insertion to provide the most reliable termination available.

Our patented dual compression point technology guarantees long-term sealing and reduces the amount of insertion force required. The improved sealing and all-metal construction ensure connector reliability even in the most adverse environments.

SLC-11 FEATURES:

1. Dual compression points
2. Internal center conductor guide
3. Higher cable center conductor holding force

MODEL #	DESCRIPTION	PLATING	TOOL CLOSURE SIZE
SLC-11	Standard	Nickel	36.1 mm
SLC-11Q	Quad Shield	Nickel	36.1 mm

Applicable Patents - reference: B - See page 111 for patent details

MINI COAX SERIES CONNECTORS

FOR CABLE SIZES 30AWG : 25AWG : 23AWG

Holland Electronics offers the most complete line of connectors for mini coax available in the industry. Take advantage of our one-piece designs that enable you to terminate your cables in 15 seconds. Our connectors are available for the most popular mini cable sizes ranging from 23-30 AWG center conductors. Designed for all applications in CATV, satellite, home theater, broadcast and satellite radio.

COMPRESSION - 23 AWG : 25 AWG : 30 AWG



SLC-23-F
SLC1855-FP2
SLC1855-FPU
SLC-MINI25U
SLC-179DT-FP *(2 PIECE)*



SLC-23-BNC
SLC1855-BNCFP
SLC1855-BNCFPU
SLC-BNC-MINI25U
SLC-BNC-179DT *(2 PIECE)*



SLC-23-RCA
SLC1855-RCAFP
SLC1855-RCAFPU
SLC-RCA-MINI25U
SLC-RCA-179DT *(2 PIECE)*

Our patented Compression "U" (Universal) Models above can be used on a wider range of cable sizes

CRIMP - 23 AWG



F1855-FP



BNC1855-FP



RCA-1855

RIGHT ANGLE COMPRESSION



SLC1855-90-F



SLC1855-90-BNC



SLC1855-90-RCA

FEMALE BULKHEADS



GF-1855-A



BNCFPFBH



RCAFPFBH

SMA - CRIMP



SMAFP



SMAFP90



SMAFPF

SMB - CRIMP



SMBFP



SMBFP90



SMBFPF

**** Other versions available***

RELATED PRODUCTS



INSTALLER BAG
Designed to carry all of your connectors, mini cable and tools (see page 76 for more details)



CT-FBR / COMPRESSION TOOL
Terminates F, BNC, RCA as well as speaker wire connectors
(More Connector Tools on page 106)

Applicable Patents - reference: G - See page 111 for patent details

MINI COAX SERIES CONNECTORS

SERIES 23 AWG CABLE COMPRESSION CONNECTORS

(Nominal Cable OD .159")

For **Holland** HVS Series : **Belden** YR46940, 1855A : **Commscope** 7538 or Similar

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLC-23-F	F Male / Fixed Pin 1 Piece	Nickel	29.8 mm
SLC1855-FP2	F Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC1855-FPU	F Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC-23-RCA	RCA Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC1855-RCAFP	RCA Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC1855-RCAFPG	RCA Male / Fixed Pin / 1 Piece	Gold	29.8 mm
SLC1855-RCAFPU	RCA Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC-23-BNC	BNC Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC1855-BNCFP	BNC Male / Fixed Pin / 1 Piece	Nickel	29.8 mm
SLC1855-BNCFPU	BNC Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC1855-90-F	90° F Male/ Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC1855-90-RCA	90° RCA Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC1855-90-BNC	90° BNC Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm

SERIES 23 AWG CABLE CRIMP CONNECTORS

(Nominal Cable OD .159")

For **Holland** HVS Series : **Belden** YR46940, 1855A : **Commscope** 7538 or Similar

MODEL #	DESCRIPTION	PLATING	HEX SIZE
F1855-FP	F Male / Fixed Pin / 1 Piece	Nickel	.270 in
RCA-1855	RCA Male / Fixed Pin / 1 Piece	Gold	.270 in
BNC1855-FP	BNC Male / Fixed Pin / 1 Piece	Nickel	.270 in
GF-1855-A	F Female / Fixed Pin / 1 Piece	Nickel	.270 in
RCAFPFBH	RCA Female / Fixed Pin / 1 Piece	Nickel	.270 in
BNCFPFBH	BNC Female / Fixed Pin / 1 Piece	Nickel	.270 in
SMAFP	SMA Plug / 1 Piece	Nickel	.270 in
SMAFP90	90° SMA Plug / 1 Piece	Nickel	.270 in
SMAFPF	SMA Jack / 1 Piece	Nickel	.270 in
SMBFP	SMB Plug / 1 Piece	Nickel	.213 in
SMBFP90	90° SMB Plug / 1 Piece	Nickel	.213 in
SMBFPF	SMB Jack / 1 Piece	Nickel	.213 in

SERIES 25 AWG CABLE COMPRESSION CONNECTORS

(Nominal Cable OD .141")

For **Belden** 1279R, 1279P, HC2950 or Similar

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLC-MINI25-U	F Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC-RCA-MINI25U	RCA Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm
SLC-BNC-MINI25U	BNC Male / Fixed Pin / 1 Piece / Universal	Nickel	29.8 mm

SERIES 30 AWG CABLE COMPRESSION CONNECTORS

(Nominal Cable OD .110")

For **Belden** 179DT or Similar

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLC-179DT-FP	F Male / Fixed Pin / 2 Piece	Nickel	29.8 mm
SLC-RCA-179DT	RCA Male / Fixed Pin / 2 Piece	Nickel	29.8 mm
SLC-BNC-179DT	BNC Male / Fixed Pin / 2 Piece	Nickel	29.8 mm

NOTE: Ask your sales representative for the correct connectors if your cable is not listed here.

COMPRESSION SPEAKER WIRE CONNECTORS

MODELS SLC-SP-12 : SLC-SP-14 : SLC-SP-16 : SLC-SP-SL : SLC-SP-AP : SLC-SP-BP



MODEL SLC-SP-12



MODEL SLC-SP-14



MODEL SLC-SP-16

FEATURES

- **Unique Internal Design Ensures Superior Continuity**
- **Quick & Simple Termination**
- **Gold-Plated Contacts For Superior Conductivity**

INTERCHANGEABLE TIPS:



SLC-SP-SL
Spade Lugs



SLC-SP-AP
45º Angle Pins



SLC-SP-BP
Banana Plugs

COMPRESSION-STYLE CONNECTORS

The **SLC-SP** series speaker wire compression connectors fit 12, 14 and 16 AWG wire sizes. The combination of our unique internal post design and 360º compression sleeve offers a superior contact with the stranded speaker wires, ensuring excellent sound quality.

This connector offers interchangeable screw-on heads such as banana plugs, 45º angle pins or spade lugs. These speaker wire compression connectors are compatible with the same universal compression tool (CT-FBR-ASP, adapter required) as all Holland Electronics compression connectors.

MODEL #	DESCRIPTION	PLATING	CLOSURE SIZE
SLC-SP-12	Compression style speaker connector for 12AWG wire	Gold	21.0 mm
SLC-SP-14	Compression style speaker connector for 14AWG wire	Gold	21.0 mm
SLC-SP-16	Compression style speaker connector for 16AWG wire	Gold	21.0 mm

RELATED PRODUCTS



CT-FBR / COMPRESSION TOOL
Terminates speaker wire connectors, as well as F, BNC & RCA
(More Connector Tools on page 106)



CT-FBR-ASP
Speaker Connector Adapter for CT-FBR / Compression Tool (Sold Separately)

ATTACHED RING CRIMP CONNECTORS

FOR SERIES 59 CABLE : SERIES 6 CABLE : SERIES 11 CABLE



SERIES 59 CABLE

MODEL #	DESCRIPTION	PLATING	CRIMP TOOL HEX SIZE
F59-290G	F Male / Brass	Gold Iridite	.324
F59-290D	F Male / Zinc Nut	Nickel	.324
F59-290CC	F Male / Brass / Conical Crimp	Tin	Uses RTC-360 or Similar
RCA59-290	RCA Male / Fixed Pin / 1 Piece	Nickel	.324
RCA59-290G	RCA Male / Fixed Pin / 1 Piece	Gold	.324
BNC-C290	BNC Male / Fixed Pin / 1 Piece	Nickel	.324
F59-UNIV	F Male / Brass / Universal	Gold Iridite	.360



SERIES 6 CABLE

MODEL #	DESCRIPTION	PLATING	CRIMP TOOL HEX SIZE
F56-324G	F Male / Brass	Gold Iridite	.324
F56-324T	F Male / Brass	Tin	.324
F56-324D	F Male / Zinc Nut	Nickel	.324
F56-324	F Male / Zinc Nut	Gold Iridite	.324
F6-324	F Male / Economy	Nickel	.324
F56-324CC	F Male / Brass / Conical Crimp	Tin	Uses RTC-360 or Similar
F56-324CCWP	F Male / Brass / Conical Crimp with O-Ring	Tin	Uses RTC-360 or Similar
F56-324K	F Male / Brass / Knurled Nut	Tin	.324
F56-342G	F Male / Brass / Tri Shield	Gold Iridite	.324
F56-342T	F Male / Brass / Tri Shield	Tin	.324
F56-357G	F Male / Brass / Quad Shield	Gold Iridite	.360
F56-357T	F Male / Brass / Quad Shield	Tin	.360
F56-UNIV	F Male / Brass / Universal	Gold Iridite	.360
F-5681G	F Female / 1 Piece / High Return Loss	Gold Iridite	.324
BNC-C324	BNC Male / Fixed Pin / 1 Piece	Nickel	.324

ATTACHED RING CRIMP CONNECTORS



SERIES 11 CABLE

MODEL #	DESCRIPTION	PLATING	CRIMP TOOL HEX SIZE
F11-460	F Male / Fixed Pin	Tin	.472
F11-480	F Male / Fixed Pin / Quad Shield	Tin	.472
F11-460WOL	F Male / Fixed Pin with O-Ring and Gel	Tin	.472



SERIES 59 & 6 MOISTURE RESISTANT

MODEL #	DESCRIPTION	PLATING	CRIMP TOOL HEX SIZE
F59-290WOL	F Male / Brass / O-Ring and Gel	Gold Iridite	.324
F6-324WL	F Male / Economy / Large Nut / O-Ring and Gel	Gold Iridite	.324
F56-324W	F Male / Brass / Zinc Nut / O-Ring and Gel	Gold Iridite	.324
F56-324WOL	F Male / Brass / 4 Turn Nut / O-Ring and Gel	Gold Iridite	.324
F56-324WL	F Male / Brass / Large Nut / O-Ring and Gel	Gold Iridite	.324
F56-324GWP	F Male / Brass / 4 Turn Nut / O-Ring	Gold Iridite	.324
F56-UNIV-WL	F Male / Brass / Universal / Large Nut O-Ring and Gel	Gold Iridite	.360

MCV CONNECTORS

The Holland connector line offers customers the flexibility to use one connector to fit a variety of different sizes of cable. Our **MCV Series** (Multiple Cable Version) compression connectors are available in the configurations shown below.







ADAPTERS & TERMINATORS

HIGH-PERFORMANCE ADAPTERS



F-71
F MALE - F MALE



FF-R
F FEMALE - RCA MALE



RCA-F
RCA FEMALE - F MALE



BFA
BNC MALE - F FEMALE



PF-59
F FEMALE - F MALE PUSH ON



ACC-F625-CH-HR
F FEMALE - HARDLINE PIN CONNECTOR



F-90
RIGHT ANGLE F



F-90HR
RIGHT ANGLE F, HIGH RETURN LOSS



VBC
VOLTAGE BLOCK



VBC-HR
VOLTAGE BLOCK, HIGH RETURN LOSS

Holland Electronics' high-performance adapters have been developed to meet the stringent requirements of our customers. We have added the HR Series to our standard line of selected adapters to meet higher standards and improve performance of CATV and satellite systems operating to 3 GHz. The HR Series uses our patented round seizing pin mechanism.

MODEL #	INSERTION LOSS (MAX)			RETURN LOSS (MIN)		
	1 GHz	2 GHz	3 GHz	1 GHz	2 GHz	3 GHz
F-90	.3 dB	.5 dB	1 dB	18 dB	13 dB	8 dB
F-90HR	.3 dB	.4 dB	.5 dB	35 dB	26 dB	18 dB
VBC*	.3 dB	.5 dB	1.2 dB	20 dB	13 dB	9 dB
VBC-HR*	.2 dB	.3 dB	.5 dB	40 dB	27 dB	15 dB

*** Max. Voltage 35VDC**



F-59T
STANDARD VERSION (BRASS)



F-59TH
HIGH-PERFORMANCE (ZINC)



VBT-100
VOLTAGE BLOCKING TERMINATOR
MAX DC VOLTAGE: 100 VDC



VBT-50HR
VOLTAGE BLOCKING TERMINATOR
MAX DC VOLTAGE: 50 VDC
HIGH RETURN LOSS

F SERIES TERMINATORS

Our standard F Series Terminators provide a 75 ohm termination on connections, while our F-59TH uses precise casting and component matching to achieve a higher return loss.

MODEL #	RETURN LOSS (MIN)			BODY MATERIAL
	1 GHz	2 GHz	3 GHz	
F-59T	15 dB	10 dB	8 dB	Brass
F-59TH	40 dB	30 dB	22 dB	Zinc
VBT-100	30 dB	25 dB	20 dB	Brass
VBT-50HR	30 dB	25 dB	20 dB	Brass



G-PF-59
LAB MODEL

- High insertion rate (> 3,000 insertion life)
- Self-aligning, heavy-duty body
- Protected center pin



PF-59-HR
STANDARD VERSION

- Standard design with improved electrical performance for applications that need high return loss

PRECISION PUSH-ON F ADAPTERS

Our precision push-on F adapters use our patented high return loss F female seizing pin.

MODEL #	RETURN LOSS (MIN)			BODY MATERIAL
	1 GHz	2 GHz	3 GHz	
G-PF-59 (Male-Female)	35 dB	26 dB	24 dB	Brass
PF-59-HR (Male-Female)	35 dB	26 dB	24 dB	Brass
PF71-HR (Male-Male)	35 dB	30 dB	23 dB	Brass
PF81-HR (Male-Female)	40 dB	35 dB	30 dB	Brass

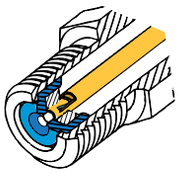
NOTE: All specifications typical unless otherwise noted

Applicable Patents - reference: W - See page 111 for patent details

F SPLICES

MODELS G-F811 : G-F81F : G-F81F* : G-F81XL : F-81

THE FIRST & MOST POPULAR PATENTED HIGH-PERFORMANCE DESIGN



Patented Round Pin Technology



G-F811



G-F81F*



G-F81XL



F-81

G SERIES HIGH-PERFORMANCE

STANDARD

G SERIES FEATURES

- **3 GHz Operation**
- **Lower Insertion Loss**
- **High Return Loss** *(> 35 dB)*
- **SCTE Flat Port Ends** *(IPS SP 400)*
- **High Holding Force** *(> 200 grams)*
- **Beryllium Copper Seizing Pin**
- **Greater Contact Area**

HIGH-PERFORMANCE F SPLICE PRODUCTS

Holland Electronics has advanced the traditional F splice technology with a patented design offering a higher level of electrical and mechanical features. The advanced features provide increased return loss beyond 3 GHz, more than twice the pin contact area and increased holding force for higher current handling and greater reliability.



The blue color insulator is a registered tradmark of Holland Electronics, LLC
All rights reserved

STANDARD SERIES FEATURES

- **Zinc Body**
- **Phosphor Bronze Seizing Pin**
- **Low Insertion Loss**
- **Years of Proven Reliability**

Applicable Patents - reference: S / U / V / W / X - See page 111 for patent details

F SPLICES

SPECIFICATIONS

ELECTRICAL	G-F811	G-F81F*	G-F81XL	F-81
Frequency Range	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz
Insertion Loss	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	.3 dB (1 GHz) .6 dB (2 GHz) 2.0 dB (3 GHz)
Return Loss	> 35 dB (1 GHz) > 28 dB (2 GHz) > 26 dB (3 GHz)	> 35 dB (1 GHz) > 28 dB (2 GHz) > 26 dB (3 GHz)	> 35 dB (1 GHz) > 28 dB (2 GHz) > 26 dB (3 GHz)	> 12 dB (1 GHz) > 9 dB (2 GHz) > 6 dB (3 GHz)
Pin Holding Force	> 200g (Initial) > 120g (After 50 Inserts)	> 200g (Initial) > 120g (After 50 Inserts)	> 200g (Initial) > 120g (After 50 Inserts)	> 50g (Initial)
MECHANICAL				
Total Length (mm)	26.3	27	34.05	21.2
Long End/Short End (mm)	11.6 / 10.3	15.4 / 8.6	15 / 15	11.2 / 8
Nut Size (mm)	11 Hex (7/16”)	11 Hex (7/16”)	11 Hex (7/16”)	11 Hex (7/16”)
Body Material	Zinc	Brass	Brass	Zinc
Threads	Machined	Machined	Machined	Machined
Contact Pin	BeCu	BeCu	BeCu	Phos. Bronze
Insulator	HDPE	HDPE	HDPE	PE

HOLLAND’S SUPERLOK™ G-SERIES SPLICES PASS SCTE 146 2008 USING THE FOLLOWING SPECIFICATIONS:

SCTE 103 2004	DC Contact Resistance	Pass
SCTE 144 2007	Insertion Loss	Pass
SCTE 04 1997	Return Loss	>30 dB @ 1002 MHz
SCTE 143 2007	Salt Spray	Pass
SCTE 48-1 2007	Shielding Effectiveness	>100 dB @ 1002 MHz
SCTE 81 2007	Surge Withstand	Pass

GROUNDING HARDWARE

GROUND BLOCKS



GRB-S



GRB-SL



G-G2B2



GL-G2B2



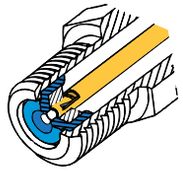
GRB-2DHR



GRB-2THR-UL



GRB-1



Patented Round Pin Technology

BLUE INSULATOR: TRADEMARKED

FEATURES

- **Higher Electrical Performance for Satellite Frequencies**
- **Single, Dual & Extended Lengths**
- **Patented Splice Design**
- **UL-Listed Models Available**
- **High Return Loss (>35 dB)**
- **Lower Insertion Loss Splice**
- **SCTE Compliant Flat Port Ends**
- **Meets All SCTE Requirements**
- **Machined Threads**

STAINLESS STEEL GROUND BLOCKS
GRB-S : GRB-SL

Holland Electronics' stainless steel series ground blocks offer the advantage of anti-corrosive characteristics and a brass splice for exceptional electrical performance. These ground blocks accept a wide range of ground wire sizes.

HIGH-PERFORMANCE SINGLE GROUND BLOCKS
G-G2B2 : GL-G2B2

Holland Electronics' high-performance ground blocks utilize a zinc base and brass splice. Standard and extended length models available. These ground blocks accept a wide range of ground wire sizes.

HIGH-PERFORMANCE DUAL GROUND BLOCKS
GRB-2DHR : GRB-2THRUL

Holland Electronics' high-performance ground blocks feature a zinc body with machined threads and multiple ground screw configurations. These grounding blocks are nickel plated and utilize stainless steel ground screws for maximum outdoor survivability.

STANDARD SINGLE GROUND BLOCK
GRB-1

Holland Electronics' standard series zinc ground block is available in a single splice model.

Applicable Patents - reference: S / U / V / W / X - See page 111 for patent details

GROUND BLOCKS

SPECIFICATIONS

ELECTRICAL	GRB-S	GRB-SL	G-G2B2	GL-G2B2	GRB-2DHR	GRB-2THRUL	GRB-1
Frequency Range	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz	DC - 3 GHz	DC -2.15 GHz
Insertion Loss	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2 GHz) < .3 dB (3 GHz)	< .1 dB (1 GHz) < .2 dB (2.15 GHz)
Return Loss (1 GHz/2 GHz /3 GHz)	35 / 30 / 26	35 / 30 / 26	35 / 30 / 26	35 / 30 / 26	35 / 25 / 20	35 / 25 / 20	25
Pin Holding Force (Initial)	200g	200g	200g	200g	200g	200g	200g
MECHANICAL							
Splice Length (mm)	27	34.6	25.7	34.6	25.8	25.6	25.7
Body Material	SS / Brass	SS / Brass	Zinc / Brass	Zinc / Brass	Zinc	Zinc	Zinc
Groundscrews / Material	1 / Stainless	1 / Stainless	1 / Steel	1 / Steel	2 / Stainless	3 / Stainless	1 / Stainless
Groundwire Range (AWG)	10 - 14	10 - 14	10 - 14	10 - 14	10 - 14	8 - 14	8-17
Contact Pin	BeCu	BeCu	BeCu	BeCu	BeCu	BeCu	BeCu
Insulator	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE	PP

NOTE: All specifications typical unless otherwise noted

MEETS APPLICABLE SCTE SPECIFICATIONS (Excluding GRB-1)

HARDWARE

MODELS A-6 : A-10 : A-2 : A-3 : A-22

HOOKS

Holland Electronics offers a variety of hardware for CATV and Satellite installations.



A-6



A-10



A-2



A-3



A-22

MODEL #	DESCRIPTION	MATERIAL
A-6	J Hook	Galvanized Steel
A-10	P Hook	Plated Steel
A-2	Q-Span Clamp	Aluminum Clamp, Galvanized Steel Bolt
A-3	C-Span Clamp	Aluminum Clamp, Galvanized Steel Bolt
A-22, A-22-12	4" Tap Bracket, 12" Tap Bracket	Aluminum Bracket, Galvanized Bolt

GROUNDING HARDWARE

SPLIT BOLTS : GROUND CLAMPS : GROUND STRAPS : GROUNDING RODS

SPLIT BOLTS / GROUND CLAMPS



SB-4



SB-6



SB-8



A-5/8

MODEL #	DESCRIPTION	INTENDED USE	MATERIAL
SB-4,6,8	Split Bolt	Copper to Copper Bonding	Copper Plated Brass
A-5/8	Brass Ground Clamp	Secures Ground Wire To Ground	Copper Plated Brass

GROUND STRAPS

Available in 6”, 9”, 12” and 24” lengths, copper or galvanized steel available.



MODEL A-24-6, 9, 12



MODEL A-24-6G, 9G, 12G

MODEL #	LENGTH	PIPE SIZE	WIRE SIZE	MATERIAL
A-24-6	6”	5/8”-1 3/4”	10-18 AWG	Copper
A-24-9	9”	-	10-18 AWG	Copper
A-24-12	12”	-	10-18 AWG	Copper
A-24-6G	6”	-	10-18 AWG	Galvanized Steel
A-24-9G	9”	-	10-18 AWG	Galvanized Steel
A-24-12G	12”	-	10-18 AWG	Galvanized Steel

GROUNDING ROD

Universal 4’ ground rod clamp included.



MODEL A-21-4

ATTENUATORS/CATV SECURITY PRODUCTS

MODELS FAM-* : FAM-*HR : FAMP-* : FAMP-*HR : PPLT-* : GLT : GLT-LR : GLT* : SS : SSS : SS-1S : ST-1

ATTENUATORS



FAM-*
F TYPE ATTENUATOR



FAM-*HR
F TYPE ATTENUATOR
HIGH RETURN LOSS (HRL)



FAMP-*
F TYPE ATTENUATOR
DC POWER PASSING



FAMP-*HR
F TYPE ATTENUATOR
DC POWER PASSING (HRL)

SPECIFICATIONS	FAM-*	FAM-*HR	FAMP-*	FAMP-*HR
Frequency Range	5 MHz - 3 GHz	5 MHz - 3 GHz	DC - 3 GHz	DC - 3 GHz
Attenuator Values	3, 6, 8, 10, 12, 16, 20 (dB)	3, 6, 8, 10, 12, 16, 20 (dB)	3, 6, 10, 12, 20 (dB)	3, 6, 10 (dB)
Accuracy	± .5	± .5	± 1	± .5
Flatness	.8	.5	1.5	.8
Return Loss (.5 GHz / 1 GHz / 2 GHz)	25 / 22 / 18 (dB)	30 / 27 / 23 (dB)	22 / 18 / 14 (dB)	30 / 26 / 25 (dB)
Max. Voltage / Max. Current	-	-	35VDC / 750mA	35VDC / 750mA

NOTE: All specifications typical unless otherwise noted

PPLT SERIES LOCKING TERMINATORS

This locking terminator has been specially designed to overcome problems of theft and tool breakage.



PPLT-75



PPLT-LR
(Less Resistor)



PPLT-T

- **Heavy-Duty Zinc Body**
- **High Theft Resistance**
- **Patented Locking Mechanism**
- **Unique Tool Design**
- **High Return Loss: >25 dB** (1000 MHz)

GLT SERIES LOCKING TERMINATORS

- **Aluminum Body**
- **Compatible With GTP-59 Type Tools**
- **Widely Used for More Than 25 Years**
- **High Return Loss**
- **High Return Loss: >24 dB** (1000 MHz)



GLT
Length: 38.2MM



GLT-LR
Length: 38.2MM
(Less Resistor)



GLT*
Length: 31.4MM



GTT-4

SECURITY SLEEVES



SS
HEAVY DUTY
ZINC BODY



SSS
THREADED FRONT



SS-1S
ABS BODY



ST-1
TOOL FOR SS SLEEVES

Applicable Patents - reference: Y - See page 111 for patent details

OEM RF CONNECTORS

Holland Electronics is a major manufacturer of OEM connectors for all RF applications including CATV, SMATV, Satellite, Broadcast, HDTV and Wireless





WE OFFER:

Custom USA Design Services
Fast, Low-Cost Prototyping
Low-Cost Asian Volume Pricing
Precision Mechanical Parts: Brass, Stainless, Zinc Die-Cast, Stampings
Wide Frequency Range Designs from DC to 6 GHz
Precision Electrical Designs for 50 and 75 ohm
Wide Variety of Shape Formats: PCB, Bulkhead, Chassis Mount, Cable (SMB, SMA, F, MCX, MMCX, G, N, ETC)
RoHs Compliance / ISO-9001:2000 & ISO-14001:2004
Specializing in Moisture-Proof High-Performance Designs

MATERIALS	PLATINGS	PROCESSES	TESTING	APPROVAL CAPABILITIES
Brass	Gold	CNC/Screw	Electrical (20 GHz)	MIL-STD
Stainless	Silver	Diecast	Temperature	SCTE
Beryllium	Tin	Extrusion	Moisture	ANSI
Copper	Nickel	Injection	Hi-Pot	
Zinc	Sulfamate Nickel	Stamping	Plating X-ray	
Teflon	Ni-Tin	Powder	Hardness	
Silicone	Chromate	Compression	Shock/Vibration	
Rubber	Yellow Bronze	Annealing		

HIGH-FREQUENCY F SPECIALIZATION

Our OEM connectors may be supplied with our patented high-performance conical female seizing pin and/or moisture-proof designs.



Applicable Patents - reference: I / W - See page 111 for patent details

OEM RF CONNECTORS

HIGH-FREQUENCY SPECIALIZED PRODUCTS

F	 G-F61-PCB90XTL	 G-F610H	 GF61H	 G-F61-PCBV
G	 GF-GSM	 G-PCBV-BH	 G-PCBV	 G-PCB90
BNC	 BNC-PCBV-FL	 BNCFPFBH	 BNC-PCBE-CL	 BNC-PCBE-BH
SMA/SMB	 SMB-75FPF	 SMB90-179	 SMA-SS	 FAKRA STYLE
MICROWAVE	 MCC-PCB90-F2	 MC-PCBV	 TNC-PCB90	 TNC-L600R
MCX	 MCX1855-FP	 MCX-PCBE	 MCX-1672-RA	 MMCX-RA-174
SPECIALTY	 N-PCB90	 BLINDMATE SMBs	 GSK-F	 G-F81GF
MISC.	 IEC-F-90-PCB	 7807-CT	 1.0/2.3 PLUG	 1.0/2.3 JACK

CATV OPTICAL TRANSMITTERS

MODELS NE1000LN-* : NE5000L : NE7000



MODEL NE1000LN-*

FEATURES

- **45 - 870 MHz Operation**
- **Power Ranges from 4-20mW**
- **Automatic Gain Control Using Pilot Carriers**
- **Highly Stable Output**
- **Network Management Capability**
- **RS485 Control Interface**
- **LCD Display**
- **Pre-Distortion Circuitry, Low-Distortion Performance, High CNR**

CATV OPTICAL TRANSMITTERS

Holland Electronics' optical transmitters offer great flexibility to meet the demands of today's CATV requirements. The **NE1000** Series transmitters are ideal for offering a combination of analog and digital content. These transmitters utilize a directly modulated 1310nm DFB laser diode and superior circuit design supporting automatic temperature and power control.

Features include gain control (both AGC or MGC) for RF input level and excellent linearity due to patented pre-distortion technology.

The **NE1000** Series transmitters are an ideal solution for today's medium-sized CATV system offering a wide array of services.

CATV OPTICAL TRANSMITTERS





SPECIFICATIONS

OPTICAL	NE1000LN-*	NE5000L
Wavelength	1310 ± 20 nm	1550 ± 10 nm
Output Power (mW) Output Power (dBm)	4, 6, 8, 10, 13, 16, 20 mW 4, 8, 9, 10, 11, 12, 13 dBm	>5 mW >7 dBm
Laser RIN Noise Density	–	<-160 dB/Hz
SBS Suspension Threshold	–	13, 16 & 18 dBm
Return Loss	>60 dB	>60 dB
Output Ports	1	2
Connectors	FC/APC, SC/APC, E2000/APC	FC/APC, SC/APC, E2000/APC
LINK PERFORMANCE		
Composite Second Order (CSO)	<-64 dBc	<-65 dBc @ Port 1 <-63 dBc @ Port 2
Composite Triple Beat (CTB)	<-68 dBc	<-65 dBc
Cross Modulation	<-65 dBc	NA
RF PARAMETERS		
Frequency Range	45 - 870 MHz	45 - 870 MHz
Input Range	15 - 25 dBmV	15 - 25 dBmV
Input Level Narrow Port	–	45 dBmV
Gain Control Range	10 dB	10 dB
Flatness	± .75 dB	± .75 dB
Return Loss	>16 dB	>16 dB
GENERAL		
Power Supply	90 to 260VAC., 50/60 Hz, 15 W (Max.)	90 to 260VAC., 50/60 Hz, 15 W (Max.)
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	350D x 485W x 45H (mm)	350D x 485W x 45H (mm)
Weight	4.6 kg	4.6 kg

NOTE: All specifications typical unless otherwise noted
**** denotes output power mW***



SATELLITE OPTICAL TRANSMITTER

	NE7000 *
Frequency Range (RF)	54 - 2050 MHz
Flatness	±1.5 dB
Return Loss	>12 dB
Frequency (Optical)	1310 nm ± 20 nm
Fiber Type	Single Mode
Connectors	FC/APC, SC/APC
Link Loss (950-2050)	13 dB (45 dB C/N)
RF Input	-40 dBm (Min. for Full Output)
Power Supply	9 - 36 VDC @ 250 mA

**** = The NE7000 can also be used for up to 4 channel CATV applications. Please call for details.***

CATV OPTICAL RECEIVERS

MODELS NE1100L : NE1101L : NE7100



MODEL NE1100L



MODEL NE1101L

FEATURES

- **870 MHz Bandwidth**
- **Optional Return Path Transmitters** *(NE1100L)*
- **Rack or Strand Mount**
- **Automatic Gain Control Using Pilot Carriers**

NE1100L: CATV OPTICAL NODE

The **NE1100L** optical node is the perfect solution for operators implementing fiber in their system. By using AGC/MGC, the **NE1100L** provides a stable RF output with a varying optical input. Features an optional return-path transmitter and remote monitor module, along with hermetically-sealed housing and ports for excellent reliability in any environment.

NE1101L: RACK MOUNT CATV OPTICAL RECEIVER

The **NE1101L** utilizes the same tried-and-true technology as the **NE1100L** in an indoor rack-mount design with many additional features, including LCD display, status monitoring and front-panel controls, making it simple to operate.

CATV OPTICAL RECEIVERS







SPECIFICATIONS

OPTICAL	NE1100L	NE1101L	NE7100
Wavelength	1260 - 1600 nm	1260 - 1600 nm	1200 - 1600 nm
Input Power	-6 to 3 dBm	-6 to 3 dBm	> -13 dBm
Detector	InGaAs PIN	InGaAs PIN	InGaAs PIN
Connectors	FC/APC or SC/APC	FC/APC or SC/APC	FC/APC or SC/APC
Return Loss	>60 dB	>60 dB	> 55 dB
RF PARAMETERS			
Frequency Range	45 - 870 MHz	45 - 870 MHz	200 - 2050 MHz
Output Level	36 dBmV (-3 dBm Input)	36 dBmV (-3 dBm Input)	37 dBmV
Flatness	± 1 dB	± 1 dB	-
Gain Control	AGC Module / Plug-In Pads	AGC / MGC	-
Return Loss	>16 dB	>16 dB	12 dB
NETWORK MANAGEMENT			
NMS Data Rate	19.2 KBps	19.2 KBps	-
Pilot Carrier	10.7 MHz	10.7 MHz	-
Monitor Connector	15 pin D sub	15 pin D sub	-

OPTIONS

NE1100L	
01	Plug-In Attenuators (0-13 dB)
02	AGC Module
03	Plug-In Equalizer
04	Diplex Filter
05	Directional Coupler / Splitter
06	Return-Path Transmitter

NE1101L	
01	Diplex Filter
02	Network Management

NOTE: All specifications typical unless otherwise noted

CATV OPTICAL AMPLIFIERS

MODEL NE6000L



MODEL NE6000L-*

FEATURES

- **Output Power Range from 14-24 dBm**
- **High Reliability 980/1480 nm Pump Laser Diode**
- **Wide Operating Range with High Gain and Low Noise Figure**
- **Network Management Capability**
- **RS485 Control Interface**

CATV OPTICAL AMPLIFIER

The **NE6000L-*** is a high-performance optical amplifier designed for 1550 nm-based network applications. This 19" rack-mount module is ideal for long haul applications, fiber-dense systems and transport architectures such as broadcast-layer transmission and redundant rings. Features high-power output ranging from 14 to 24 dBm.

SPECIFICATIONS

OPTICAL	NE6000L-*
Wavelength	1540 - 1560 nm
Noise Figure	<5.0 dB for output power <20 dBm <5.5 dB for output power >20 dBm
Optical Input Power Range	-5 to 10 dBm
Output Power (*)	14 - 24 dBm (must specify power, 1 dB increments)
Polarization Sensitivity	< .5 dB
Output Power Variation	± .5 dB
Optical Connector	SC/APC
Minimum Optical Input Power for Rated Output Power	0 dBm (when output <=20 dBm) 4 dBm (when output <=24 dBm)
PHYSICAL	
Control Interface	RS 485
Power Supply	90 - 260VAC, 50/60 Hz, 50 W (Max.)
Operating Temperature	0˚ to 50˚ Celsius
Relative Humidity	85% Max.

NOTE: All specifications typical unless otherwise noted

FIBER OPTIC DISTRIBUTION SYSTEM

MODELS FOD-PF : FOD-AC : FOD-1310TX-* : FOD-FRX : FOD-RPR : FOD-RPT

FOD - MODULAR FIBER OPTIC DISTRIBUTION SYSTEM

The **FOD Modular Fiber Optic Distribution System** consists of a 10-slot mounting rack for holding our modular fiber-optic power supplies, transmitters, amplifiers and receivers. The 8 3/4" rack height covers 5 EIA rack spacings, making the 10 module system space efficient. The **FOD System** has an LCD display for status monitoring and modules can be changed in/out without power shutdown to the distribution system.

UNIVERSAL CHASSIS PLATFORM



MODEL FOD-PF

AC POWER SUPPLY



MODEL FOD-AC

DOWNSTREAM TRANSMITTER



MODEL FOD-1310TX-*

- **10 Plug-in Slot Capacity**
- **RS-232/RS-485 Interface**
- **LCD Display for On-Site Status Monitoring**
- **Only Requires 5-RU**

PARAMETERS	FOD-AC
Input Voltage Range	90 - 260VAC
Output Voltage Range	24 - 26VDC
Output Current	.1 - 8 A
Power Consumption	< 240 W
PHYSICAL	
Operating Temperature	0˚ to 50˚ Celsius
Operating Humidity	85% Max.

OPTICAL	FOD-1310TX-*
Wavelength	1310 ± 20 nm
Output Power*	4, 6, 8, 10, 13, 16, 20 mW
Laser Type	Cooled DFB LD w/ isolator
Connector	SC/APC
Laser RIN Noise Density	< -155 dB/Hz
Composite Second Order (CSO)	< -64 dBc
Composite Triple Beat (CTB)	< -68 dBc
Cross Modulation (XMOD)	< -65 dBc
RF PARAMETERS	
Operating Bandwidth	45 - 870 MHz
Analog Channel Loading	45 - 550 MHz
Digital Channel Loading	550 - 870 MHz
RF Input Return Loss	< -16 dB
RF Input Level (Analog)	15 - 25 dBmV (w/ AGC)
PHYSICAL	
Operating Temperature	0˚ to 50˚ Celsius
Operating Humidity	85% Max.

NOTE: All specifications typical unless otherwise noted

FIBER OPTIC DISTRIBUTION SYSTEM

MODELS FOD-FRX : FOD-RPR : FOD-RPT

FORWARD-PATH OPTICAL RECEIVER



MODEL FOD-FRX

OPTICAL	FOD-FRX
Photodiode Type	InGaAs PIN
Wavelength	1310 ± 20 nm; 1550 ± 20 nm
Connector	SC/APC
Power Input Range	-10 to 3 dBm
RF PARAMETERS	
Operating Bandwidth	45 - 870 MHz
RF Output Level (Analog)	36 dBmV/Ch. @ -3 dBm Optical Input
Gain Control Range	10 dB
Slope Adjustment	-1 to 2 dB
RF Output Return Loss	< -16 dB
Flatness	± 1 dB
Pilot Tone for AGC	10.7 MHz ± -50 kHz
PHYSICAL	
Operating Temperature	0˚ to 50˚ Celsius
Operating Humidity	85% Max.

DUAL-RETURN-PATH RECEIVER



MODEL FOD-RPR

OPTICAL	FOD-RPR
Photodiode Type	InGaAs PIN
Wavelength	1310 ± 20 nm; 1550 ± 20 nm
Connector	SC/APC
Power Input Range	-10 to 3 dBm
RF PARAMETERS	
Operating Bandwidth	5 - 300 MHz
RF Output Level (Analog)	> 46 dBmV/Ch. @ -10 dBm Optical Input
Gain Control Range	25 dB
RF Output Return Loss	< -16 dB
Flatness	± .75 dB
PHYSICAL	
Operating Temperature	0˚ to 50˚ Celsius
Operating Humidity	85% Max.

CATV RETURN-PATH TRANSMITTER



MODEL FOD-RPT
(For Use in NE-1100L)

OPTICAL	FOD-RPT
Laser Type	Isolated, Uncooled, FP Laser (FP-B) Nonisolated, Uncooled FP or DFB Laser (FP-A/DFB-A)
Wavelength	1310 ± 20 nm
Connector	SC/APC
Output Power	> 0 dBm (FP-A, DFB-A); > -3 dBm (FP-B)
RF PARAMETERS	
Operating Bandwidth	5 - 100 MHz
RF Output Return Loss	< -16 dB
RF Input Level (1 Video)	< 15 dBmV
Data Input Level (When NPR > 40 dB)	8 - 18 dBmV
PHYSICAL	
Operating Temperature	-40˚ to 60˚ Celsius
Operating Humidity	90% Max.

NOTE: All specifications typical unless otherwise noted

FIBER OPTIC DISTRIBUTION SYSTEM

ATTENUATORS : PATCHCORDS & PIGTAILS : COUPLERS

ATTENUATORS



MODEL ATD-FCU-*

Available in single or dual window with 1-20 dB values. SC, FC, UPC & APC performance designs available.

SPECIFICATIONS	ATTENUATORS
Wavelength	1310, 1550 nm (±2 nm)
Accuracy	±.75 dB (1-3 dB values), ±1.5 dB (4-20 dB values)
Housings	Brass, Zinc
Return Loss	>50 dB Standard, >65 dB APC
Operating Temperature	-40˚ to +75˚ Celsius

ORDERING	WINDOW	CONNECTOR	PERFORMANCE	ATTENUATION
AT	S = Single D = Dual	SC FC	U = UPC A = APC	1 - 20 dB (1 dB Increments)
Ex. = AT	D	FC	A	3

PATCHCORDS & PIGTAILS

Holland Electronics' high quality patchcords are available in standard or custom lengths, in UPC or APC and in simplex or duplex configurations. All patchcords come with a performance certification report and are guaranteed to meet all specifications.



MODEL J1-S-FC-U-FC-A

ORDERING	LENGTH	FIBER	CONNECTOR	PERFORMANCE	CONNECTOR	PERFORMANCE
J	Meters	S = Single M = Multi	FC SC	U = UPC A = APC	FC SC	U = UPC A = APC
Ex. = J	1	S	FC	U	FC	A

COUPLERS

Couplers configured in bare fiber, connectorized, open or enclosed with feed-thrus or connectors.



MODEL OCP-12-S-50-S

SPECIFICATIONS	PATCHCORDS
Wavelength	1310, 1550 nm (±40 nm)
Directivity	> 50 dB
Polarization Dependence	< .1 dB
Coupling Ratio	50/50, 45/55, 35/65, 25/75, 15/85
Operating Temperature	-40˚ to +75˚ Celsius

ORDERING	# SPLITS	MODE	RATIO	PERFORMANCE
OCP	12 = 1x2 13 = 1x3	S = Single M = Multi	50 = 50/50 XX = XX/100-XX	H = High (3.7 dB, 50/50) S = Super (3.6 dB, 50/50)
Ex. = OCP	12	S	50	S

NOTE: All specifications typical unless otherwise noted

FILTERS

MODELS HPF-54HR : LPF-* : HPF-* : NF-* : TT-* : WF-* : BRF-*

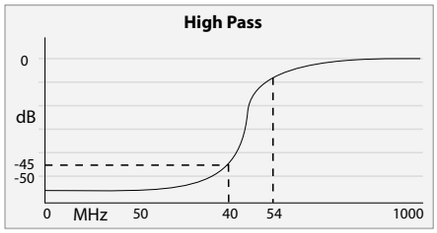
HIGH PASS FILTERS

Holland Electronics' **HPF-54HR** high pass filter attenuates ingress noise in the sub-band section of the cable spectrum to optimize return path services. This filter can also be used to eliminate or restrict user access to the sub-band return frequencies.



MODEL HPF-54HR

- **High Return Loss**
- **High Sub Band Rejection**
- **High-Performance Seizing Pin for Increased Reliability**
- **Small Size**
- **Moisture Resistant**



HIGH PASS FILTER : MODEL HPF-54HR	
Frequency Range	5 - 1000 MHz
Insertion Loss (54 - 1000 MHz)	1 dB Max.
Sub Band Rejection (5 - 40 MHz)	-45 dB Min.
Return Loss (54 - 1000 MHz)	20 dB Min.

NOTE: All specifications typical unless otherwise noted

CUSTOM FILTERS: LOW-PASS, HIGH-PASS, NOTCH & TIER TRAPS

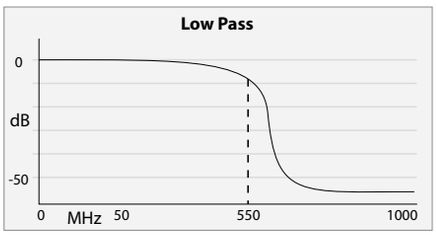
Holland Electronics has vast experience in manufacturing custom filters for virtually any application. Our filters and traps have been used by major MSOs since 1989. We have the ability to produce filters in a variety of case styles, configurations and specifications.

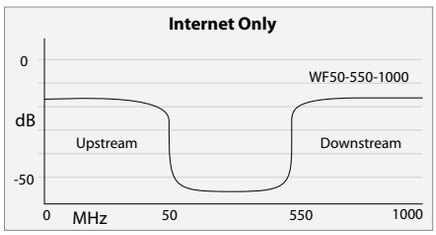
- **Positive and Negative Traps**
- **Low and High Pass, Band Rejection, Window, Data**
- **Wide Operating Temperature**

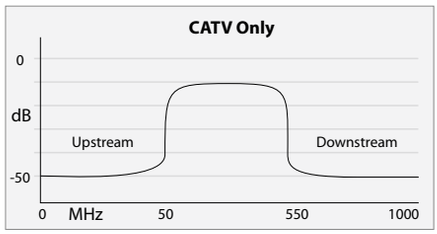
FILTERS PRODUCED BY HOLLAND ELECTRONICS	
LPF-*	Low-Pass Filter, Channel Assignment / Frequency Assignment
HPF-*	High-Pass Filter, Channel Assignment / Frequency Assignment
NF-*	Negative Filter, Channel Assignment / Frequency Assignment
TT-*	Tier Trap, Channel Assignment / Frequency Assignment
WF-*	Window Filter, Channel Assignment / Frequency Assignment
BRF-*	Band-Rejection Filter, Channel Assignment / Frequency Assignment









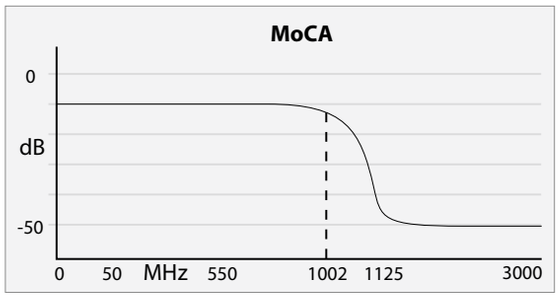


FILTERS

MODELS MPOE-CM : MPOE-CX : MOCA-IHF

MOCA FILTERS

Holland Electronics has developed a specialized line of filters for use in **MoCA** signal distribution within a home. Our line of Point-of-Entry filters focuses on preventing MoCA signals generated in the home network from exiting the home. Set-Top-Box **MoCA** filters protect signal integrity to pre-existing non-MocA capable devices.



The above graph represents a common MoCA frequency range. Frequency ranges vary depending on each MSO's specific need.

- **Rejection Tailored to Your System Requirements**
- **Superior Return Loss** (>14 dB)
- **Excellent Out-of-Band Rejection** (>40-70 dB)
- **6KV Surge Survivability** (available in select models)
- **High-Performance Seizing Pin**
- **Compact Size**

All MoCA filters feature high return loss, come in a compact size and are available in custom versions to meet system-specific requirements

Holland Electronics is a member of: MoCA Multimedia over Coax Alliance







SPECIFICATIONS ELECTRICAL	MOCA-IHF	MPOE-CM	MPOE-CX
Frequency Range	5 - 3000 MHz	5 - 3000 MHz	5 - 3000 MHz
Impedance	75 ohms	75 ohms	75 ohms
Pass Band	5 - 1002 MHz	5 - 1002 MHz	5 - 1002 MHz
Insertion Loss (5 - 864 MHz) (Max)	1.0 dB	1.0 dB	0.8 dB
Insertion Loss (865 - 1002 MHz) (Max)	2.0 dB	2.0 dB	1.8 dB
Return Loss (5 - 1002 MHz) (Min)	14 dB	14 dB	16 dB
Stop Band	1125 - 3000 MHz	1125 - 3000 MHz	1125 - 3000 MHz
Rejection (1125 - 2000 MHz)	40 dB	52 dB	70 dB
Rejection (2001 - 3000 MHz)	50 dB	52 dB	70 dB
MECHANICAL			
Housing	Brass or Zinc	Brass or Zinc	Copper Tube
Connector	75 ohms, Male & Female "F" Type	75 ohms, Male & Female "F" Type	75 ohms, Male & Female "F" Type
Connector Screw Thread	W 3/8"-32UNEF	W 3/8"-32UNEF	W 3/8"-32UNEF
Dimensions	13MM(W)X41MM(L)	15MM(W)X52.5MM(L)	21MM(W)X64MM(L)
Indoor/Outdoor Usage	Indoor	Outdoor	Outdoor
Surge Withstand	No	Yes	Yes
Waterproof	No	Yes	Yes

Note: All specifications typical unless noted

(The above information is a sample of current and past product specifications. Specific MoCA filter products can be made to fit your requirements.)

FILTERS / DIPLEXERS

MODELS STVC : DPD2 : SBD



MODEL STVC

SATELLITE/TV DIPLEXER

The **STVC** allows the combining or separating of off-air / CATV signals with satellite signals. DC pass-thru is provided on satellite port.

* **See specifications page 95.**



MODEL DPD2

SATELLITE/TV DIPLEXER: HIGH-PERFORMANCE

Allows the combining (or separating if used in the reverse) of Off-Air / CATV signals with satellite signals to a common cable. Filters harmonics in the off-air spectrum from satellite interferring with conversion devices. The **DPD2** diplexer is specifically designed for DISH Network's DP44 installations, requiring continuous 2-amp power passing on the satellite leg.

* **See specifications page 95.**



MODEL SBD

SUB-BAND/CATV SEPARATOR/JOINER

The **SBD** allows the combining or separating of return signal sub-bands (1-42 MHz) and forward signals (54-1000 MHz). Also provides low-loss sub-band signal insertion in the distribution system or at the head-end. Enables one-way amplifiers to become bi-directional.

	Insertion Loss		Rejection	
PORT	**FREQUENCY (MHz)**	**TYP**	**FREQUENCY**	**TYP**
SUB	1 - 40	.5 dB	54 - 1000	25 dB
CATV	54 - 1000	.7 dB	1 - 40	25 dB



MODEL DPLS-2AR

HPNA-TV/VDSL DIPLEXER

Interconnects Telco's VDSL feeds, residential gateway units and set-top-boxes with 75 ohm coax cable. Separates and isolates the incoming VDSL and in-home HPNA/TV signals.

- **Utilizes Multi-Stage Filters for High Performance**
- **Low Intermodulation Design to Prevent VDSL/HPNA Interference**

HPNA DIPLEXER	
Frequency Range	25 kHz - 900 MHz
Insertion Loss (25k - 8.5 MHz)	2.5 dB
Insertion Loss (12 MHz - 900 MHz)	4.0 dB
Return Loss - Low Pass	14 dB
Return Loss - High Pass	10 dB
Rejection	40 dB

See Page 81 for HomePNA IPTV Splitters

Note: All specifications typical unless noted

CABLE DROP PROTECTION

MODELS CCI-1 : CISP : CISP-HR : SA-1F : GRB-AR

CABLE ISOLATORS



MODEL CCI-1
ISOLATOR



MODEL CISP
ISOLATOR W / SPIKE PROTECTION



MODEL CISP-HR
HIGH RETURN LOSS

- **Blocks 60 Hz Power up to 5,000 Volts**
- **Reduces Energy Level of Spikes**
- **Eliminates Ground-Loop Hum**
- **Does Not Degrade with Repetitive Spikes**
- **Electronic Clamping IC Technology (SIDACtor)** *(CISP)*

CABLE ISOLATORS	CCI-1	CISP	CISP-HR
Frequency Range	5 - 1500 MHz	5 - 1500 MHz	5 - 1500 MHz
Insertion Loss (Max)	1 dB	1 dB	< 1 dB
Return Loss (1 GHz / 1.5 GHz) (Min)	23 dB / 12 dB	23 dB / 12 dB	> 20 dB Typ.
RF Shielding	> 60 dB	> 60 dB	> 85 dB Typ.
Voltage Breakdown	3 kVA 5 hits, 7 kVA Max	3 kVA 5 hits, 7 kVA Max	3 kVA 5 hits, 7 kVA Max
Spike Protection (CISP)	-	See SA-1F Spec Below	See SA-1F Spec Below
Connectors	2 F Female	1 F Male -1 F Female	1 F Male -1 F Female

SPIKE PROTECTION

Prevents dangerous transient spikes from damaging digital set-top boxes, cable modems, satellite receivers and any other equipment on the coax line.



MODEL SA-1F

- **Electronic Clamping Using IC Technology (SIDACtor)**
- **Faster Response Time**
- **Does Not Degrade with Repetitive Spikes**



MODEL GRB-AR

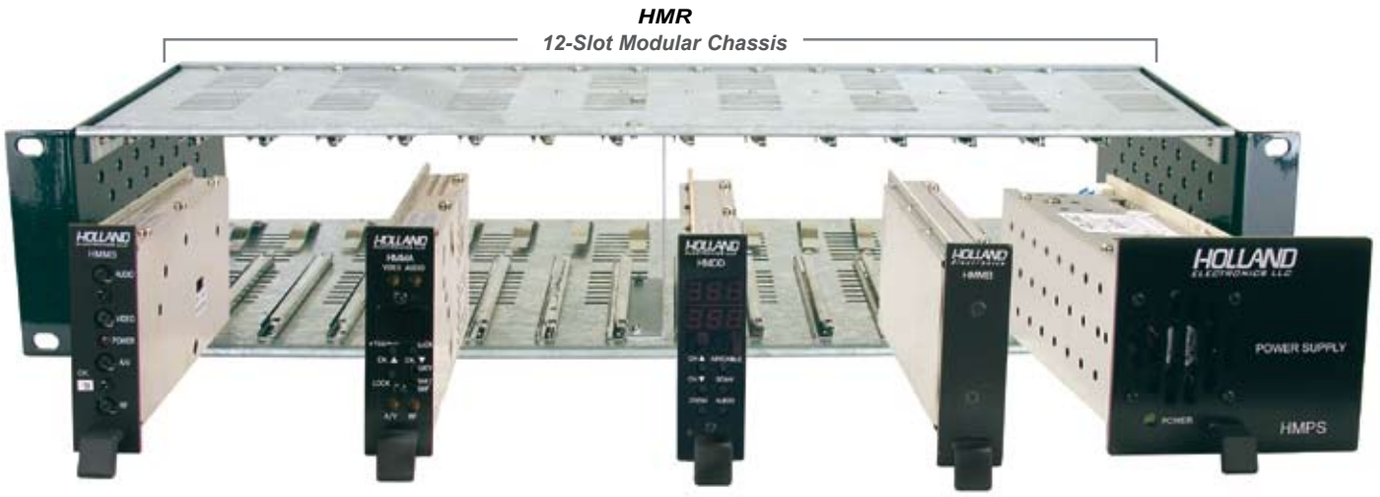
- **Uses Traditional Clamping (Gas Tube Arrestor)**

SPIKE PROTECTION	SA-1F	GRB-AR
Frequency Range	DC - 2150 MHz	DC - 2150 MHz
Insertion Loss (Max)	1 dB	1 dB
Return Loss (1 GHz / 1.5 GHz) (Min)	25 dB / 12 dB	16 dB
Current Suppression	500 amps (2x10 µs)	750 amps (2x10 µs)
Response Time	1 ns	5 ns
Firing Voltage	65 Volts	90 Volts
RFI Shielding	120 dB	120 dB

NOTE: All specifications typical unless otherwise noted

MODULAR HEAD-END SYSTEM

MODELS HMMS-* : HMMA : HMDD : HMMB : HMPS : HMR



HMMS-*
SAW Modulator

HMMA
Agile Modulator

HMDD
Digital Demodulator

HMMB
Blank Insert

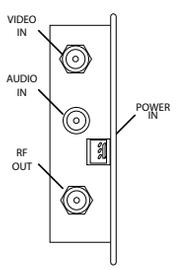
HMPS
Power Supply

FEATURES

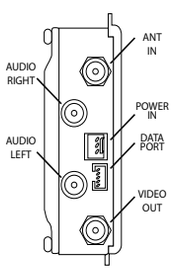
- **SAW Filtered**
- **PLL Oscillator Controlled Modulators**
- **Stereo Encoder Available** *(ST-MOD)*
- **Microprocessor Controlled** *(HMMA/HMDD)*
- **Fan Cooled Power Supply for Extra Reliability**
- **International Power Supply** *(100-240VAC)*
- **Front Panel Controls**
- **Five-Year Warranty**

Holland Electronics' **Modular Head-End System** consists of a 12-slot mounting chassis and power supply capable of holding any combination of 12 high-quality SAW filtered modulators and/or demodulators. The HMR slide-in mounting system uses only 3.5" of rack height, has 12 individual slots and makes for easy installation and efficient use of space (as simple as sliding in the modules and plugging in the HMPS power supply).

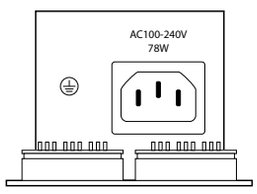
- **Inverted Channel Format (HMMS)**
- **Stereo Encoder (ST-MOD)**
- **HMMB: Blank Insert for Unused Slots**



HMMA / HMMS
Rear View



HMDD
Rear View



HMPS
Rear View

MODULAR HEAD-END SYSTEM

MODELS HMR RACK : HMPS : ST-MOD : HMMB

HMR RACK

12-Slot Modular Chassis



MOUNTING RACK: MODEL HMR	
Width	19”
Height	3.5”
Depth	9”
Capacity	12 Individual Slots (Not Including HMPS)

HMPS POWER SUPPLY

Power Supply for 12-Slot System



POWER SUPPLY: MODEL HMPS	
AC Input	95 - 240VAC (50 - 60 Hz)
DC Output	5VDC, 12VDC
Output Current (Max.)	5.5A @ 5V, 4A @ 12V
Protection	Short Circuit & Overload
Regulation	5%
Ripple	25 mV
Operating Temperature	0 to 50˚ Celsius

AVAILABLE OPTIONS



ST-MOD

Converts right and left audio inputs to stereo output. Small size and lightweight allows for easy integration with the **HMM* Head-End System.**



HMMB

Blank insert for unused slots.

STEREO ENCODER: MODEL ST-MOD	
Audio Input	10K ohms
Input Level	.5 - 1.5 V
Output	BTSC
Separation	20 dB (50 Hz - 13 kHz)

BLANKS: MODEL HMMB	
Single Slot Blank Insert	Model HMMB

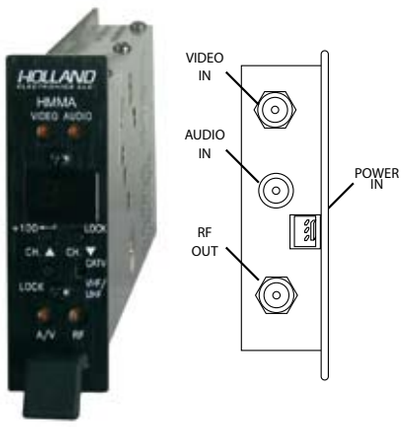
NOTE: All specifications typical unless otherwise noted

MODULAR HEAD-END SYSTEM

MODELS HMMS-* : HMMA : HMDD



MODEL HMMS-*



MODEL HMMA



MODEL HMDD

FEATURES

- **SAW Filtered**
- **PLL Controlled Oscillator**
- **Front Panel Controls**
- **Low Out-of-Band Noise**
- **LED Channel Display** *(HMMA/HMDD)*
- **Microprocessor Controlled** *(HMMA/HMDD)*
- **Stereo Encoder Available** *(ST-MOD)*
- **Five-Year Warranty**

AVAILABLE OPTIONS

- **Inverted Channel Format** *(For HMMS)*
- **Stereo Encoder** *(ST-MOD)*
- **HRC & IRC Offsets Available** *(For HMMS)*

** Denotes specified channel for fixed channel units (HMMS)*

HMMS : FIXED SAW MODULATOR

The **HMMS-*** mini-modulator is a commercial grade fixed channel modulator that integrates with Holland Electronics' Modular Head-End System. The HMMS-* accepts any A/V baseband input and modulates to CATV channels 2-135.

HMMA : AGILE SAW MODULATOR

The **HMMA** is a high quality SAW filtered frequency agile modulator covering 860 MHz and has been designed to meet high CATV performance standards. Low out-of-band noise makes it ideal in adjacent channel head-ends.

HMDD : DIGITAL DEMODULATOR

The **HMDD** permits the delivery of digital television signals in analog format directly to a television. They also interface easily with existing analog modulators on CATV networks. This high-performance digital receiver allows for the reception and demodulation of an 8VSB (Off-air SD/HD digital TV Signal) or QAM (Digital CATV) signal into a baseband NTSC video and audio output.

MODULAR HEAD-END SYSTEM

SPECIFICATIONS

RF	HMMS-*	HMMA
Output Channels:	2 - 117 CATV (54-750 MHz) 14 - 59 UHF (470-750 MHz)	2 - 135 CATV (54 - 860 MHz) 14 - 69 UHF (470 - 806 MHz)
FCC Offsets (Where Applicable)	±12.5 kHz, ±25 kHz	±12.5 kHz, ±25 kHz
Output Level	30 - 45 dBmV (Adj.)	30 - 45 dBmV (Adj.)
A/V Ratio	-11 to -18 dB (Adj.)	-11 to -18 dB (Adj.)
Frequency Stability	±5 kHz (Meets FCC Docket 21006)	±5 kHz (Meets FCC Docket 21006)
Aural Carrier Frequency	4.5 MHz ± 5 kHz	4.5 MHz ± 5 kHz
Spurious Outputs	-60 dBc	-60 dBc
C/N (In-Band)	60 dB	60 dB
Out-of-Band Noise	-95 dBc	-78 dBc
Output RL	12 dB	12 dB
VIDEO		
Input Level (Min.)	.5V p-p (for 87.5% Modulation)	.8V p-p (for 87.5% Modulation)
Frequency Response	±1.5 dB (50 Hz - 4.2 MHz)	±1.5 dB (50 Hz - 4.2 MHz)
Video C/N	60 dB	60 dB
Hum/Noise	-60 dB	-60 dB
Modulation Range	0 - 90%	0 - 90%
Input Impedance	75 ohms	75 ohms
Differential Phase	±5˚	±3˚
Differential Gain	±5%	±5%
Group Delay	75 ns	75 ns
AUDIO		
Input Level	.5V p-p (25 kHz Dev)	.5V p-p (25 kHz Dev)
Input Impedance	5k ohms	10k ohms
Distortion (THD)	1%	1%
Flatness	±1 dB (50 Hz - 15 kHz)	±1 dB (50 Hz - 15 kHz)
Pre-Emphasis	75 µs (Switchable)	75 µs (Switchable)
BTSC Stereo Encoder	Optional	Optional
CONNECTORS		
Video Input, RF Output	F	F
Audio Input	RCA	RCA
GENERAL		
Power Requirements	5VDC @ 190mA, 12VDC @ 100mA	5VDC @ 280mA, 12VDC @ 400mA
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	1” x 3.1” x 7.5”	1” x 3.1” x 7.5”
Weight	.75 lb.	.75 lb.

RF	HMDD
Input Channels	2-125 CATV/HRC/IRC 14 - 69 UHF (470 - 806 MHz)
Input Power Range	0 - 25 dBmV
Noise Figure	6 dB: VHF / 8 dB: UHF
VIDEO	
Output Level	.5 - 1.2V p-p (Adj.)
Impedance	75 ohms
Frequency Response	± 2 dB
Differential Phase	± 5˚
Differential Gain	± 5%
AUDIO	
Output Level	.8 - 1.5V p-p (Adj.)
Output Impedance	600 ohms
Distortion (THD)	2%
CONNECTORS	
RF Input, Video Output	F
Audio Output	RCA
GENERAL	
Power Requirements	12VDC, 5VDC @ 150 mA
Operating Temperature	0 to 50˚ Celsius
Dimensions	1” x 3.1” x 8.5”
Weight	.75 lb.

NOTE: All specifications typical unless otherwise noted

FIXED CHANNEL MODULATORS

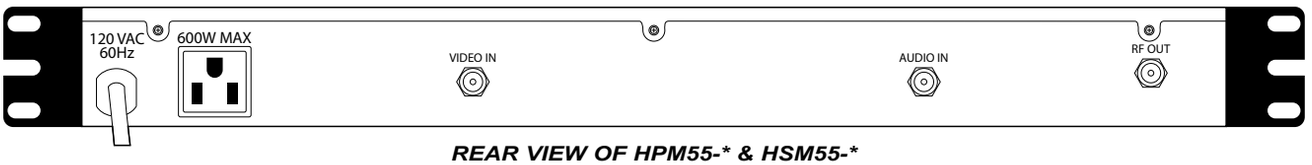
MODELS HPM55-* : HSM55-*



MODEL HPM55-*



MODEL HSM55-*



REAR VIEW OF HPM55-* & HSM55-*

FEATURES

- **20 Years of Proven Reliability**
- **Adjacent Channel Performance** *(Except Sub-band)*
- **PLL Controlled Oscillator**
- **Low Out-of-Band Noise**
- **Complies with FCC Offsets & Accuracy Requirements**
- **Includes New Video Low-Pass Filter**
- **T8 - T14 Available** *(HPM)*
- **Auxiliary AC Outlet**

HPM55-* : FIXED CHANNEL MODULATOR

The **HPM55-*** is an adjacent channel audio/video modulator specifically designed for head-ends requiring proven performance. The HPM55's internal filters provide sharp VSB rejection for adjacent channel operation while maintaining similar C/N and video response found in more expensive SAW modulators.

HSM55-* : FIXED CHANNEL MODULATOR

The **HSM55-*** is the same proven modulator as the **HPM55-*** with additional SAW filtering providing unparalleled adjacent channel performance.

AVAILABLE OPTIONS

Stereo Encoder ***(ST-MOD)***

FIXED CHANNEL MODULATORS

SPECIFICATIONS

RF	HPM55-*	HSM55-*
Output Channels	2 - 13 CATV (54 - 216 MHz) A - W CATV (121 - 300 MHz) T8 - T14 CATV (13 - 54 MHz)	2 - 125 CATV (54 - 750 MHz) 14 - 69 UHF (Optional)
FCC Offsets (Where Applicable)	±12.5 kHz, ±25 kHz	±12.5 kHz, ±25 kHz
Output Level	40 - 55 dBmV (Adj.)	40 - 55 dBmV (Adj.)
A/V Ratio	-11 to -18 dB (Adj.)	-11 to -18 dB (Adj.)
Frequency Stability	±5 kHz (Meets FCC Docket 21006)	±5 kHz (Meets FCC Docket 21006)
Aural Carrier Frequency	4.5 MHz ± 1.5 kHz	4.5 MHz ± 1.5 kHz
Spurious Outputs	-60 dBc	-60 dBc
C/N (In-Band)	60 dB	60 dB
Out-of-Band Noise	-95 dBc	-95 dBc
Output RL	10 dB	10 dB
VIDEO		
Input Level (Min.)	.5V p-p min. (for 87.5% Modulation)	.5V p-p min. (for 87.5% Modulation)
Frequency Response	±2 dB (50 Hz - 4.2 MHz)	±1.5 dB (50 Hz - 4.2 MHz)
Video C/N	60 dB	60 dB
Hum/Noise	-60 dB	-60 dB
Modulation Range	0 - 90%	0 - 90%
Input Impedance	75 ohms	75 ohms
Differential Phase	±2˚	±2˚
Differential Gain	±3%	±3%
Group Delay	75 ns	75 ns
AUDIO		
Input Level	.4V p-p (25 kHz Dev)	.5V p-p (25 kHz Dev)
Input Impedance	600 ohms (Unbalanced)	600 ohms (Unbalanced)
Distortion (THD)	1.5%	1.5%
Flatness	±1 dB (50 Hz - 15 kHz)	±1 dB (50 Hz - 15 kHz)
Pre-Emphasis	75 µs	75 µs
BTSC Stereo Encoder	Optional	Optional
CONNECTORS		
Video Input, RF Output	F	F
Audio Input	F	F
GENERAL		
Power Requirements	117VAC, 60 Hz, 7 W	117VAC, 60 Hz, 7 W
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 3”	19” x 1.75” x 3”
Weight	5 lbs.	5 lbs.
Auxiliary Outlet	117VAC, 600 W	117VAC, 600 W
Test Port	-20 dB	-20 dB

NOTE: All specifications typical unless otherwise noted

HMA SERIES AGILE MODULATORS

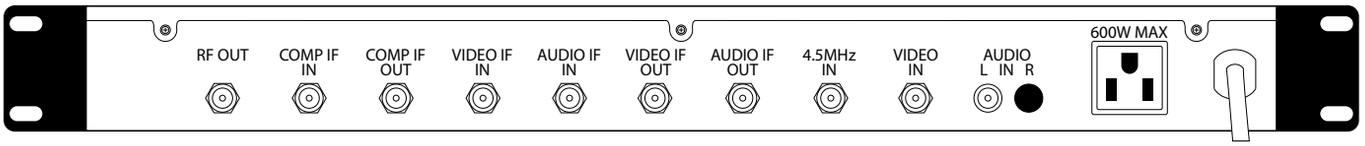
MODELS HMA-550H : HMA-860H



MODEL HMA-550H



MODEL HMA-860H



REAR VIEW OF HMA-550H & HMA-860H

FEATURES

- **60 dBmV Output**
- **Triple I.F. Loop**
- **SAW Filtered**
- **Low Out-of-Band Noise**
- **Crystal Referencing PLL Tuning**
- **International Power Supply (90 - 260VAC)**
- **BTSC Stereo Compatible (ST-MOD)**
- **Easy-to-Read LED Channel Display**
- **Overmodulation Indicators**
- **Auxiliary AC Outlet**

FREQUENCY AGILE MODULATORS

The **HMA-550H** and the **HMA-860H** are commercial grade, SAW filtered, frequency agile modulators specifically designed to meet the highest CATV performance standards. All channels are easily selected using front panel buttons and verified with an easy-to-read LED channel display. The modulators feature extremely low out-of-band noise allowing their use in large channel capacity head-ends. The **HMA-550H** and the **HMA-860H** modulators are the ideal choice for any system where performance, flexibility and reliability are required.

AVAILABLE OPTIONS

Stereo Encoder ***(ST-MOD)***

HMA SERIES AGILE MODULATORS

SPECIFICATIONS

RF	HMA-550H	HMA-860H
Output Channels	2 - 78 CATV (54 - 550 MHz)	2 - 135 CATV (54 - 860 MHz) 14 - 69 UHF (471 - 801 MHz)
FCC Offsets (Where Applicable)	±12.5 kHz, ±25 kHz (Selectable)	±12.5 kHz, ±25 kHz (Selectable)
Output Level	45 - 60 dBmV (Adj.)	45 - 60 dBmV (Adj.)
A/V Ratio	-9 to -20 dB (Adj.)	-9 to -20 dB (Adj.)
Frequency Stability	±5 kHz (Meets FCC Docket 21006)	±5 kHz (Meets FCC Docket 21006)
Aural Carrier Frequency	4.5 MHz ± 1 kHz	4.5 MHz ± 1 kHz
Spurious Outputs	-60 dBc	-60 dBc
C/N (In-Band)	65 dB	65 dB
Out-of-Band Noise	-75 dBc	-75 dBc
Output RL	15 dB	15 dB
VIDEO		
Input Level (Min.)	.7V p-p (for 87.5% Modulation)	.7V p-p (for 87.5% Modulation)
Frequency Response	±1 dB (50 Hz - 4.2 MHz)	±1 dB (50 Hz - 4.2 MHz)
Video C/N	60 dB	60 dB
Hum/Noise	-60 dB	-60 dB
Modulation Range	0 - 90%	0 - 90%
Input Impedance	75 ohms	75 ohms
Differential Phase	±5˚	±5˚
Differential Gain	± 5%	± 5%
Group Delay	75 ns	75 ns
AUDIO		
Input Level	.5V p-p (25 kHz Dev)	.5V p-p (25 kHz Dev)
Input Impedance	600 ohms (Unbalanced)	600 ohms (Unbalanced)
Distortion (THD)	1%	1%
Flatness	±1 dB (50 Hz - 15 kHz)	±1 dB (50 Hz - 15 kHz)
Pre-Emphasis	75 µs	75 µs
BTSC Stereo Encoder	Optional	Optional
CONNECTORS		
Video Input, RF Output, IF	F	F
Audio Input	RCA	RCA
GENERAL		
Power Requirements	90 - 260VAC (50 - 60 Hz), 25 W	90 - 260VAC (50 - 60 Hz), 25 W
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 12”	19” x 1.75” x 12”
Weight	7 lbs.	7 lbs.
Auxiliary Outlet	Yes	Yes
Test Port	-30 dB	-30 dB

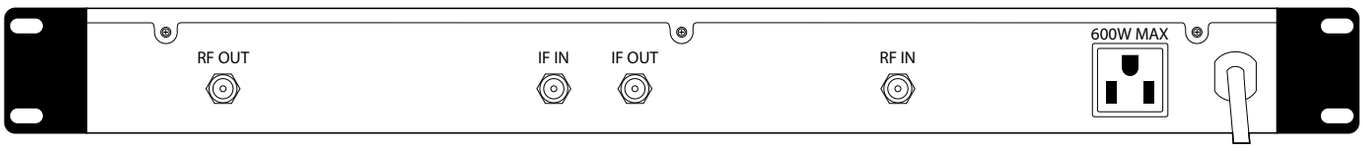
NOTE: All specifications typical unless otherwise noted

HPH SERIES AGILE PROCESSORS

MODELS HPH-860 : HPH-860AD

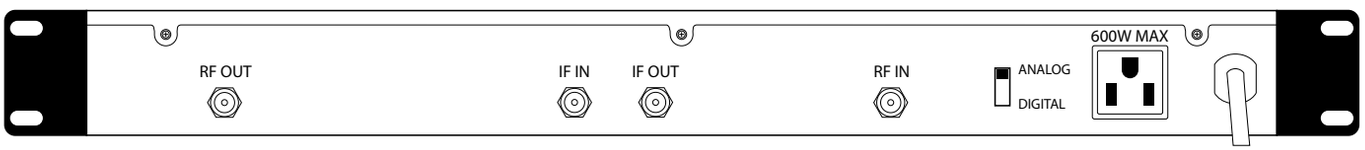


MODEL HPH-860





MODEL HPH-860AD



FEATURES

- **60 dBmV Output**
- **Dual Saw Filtering**
- **Double Heterodyne Conversion**
- **Maintains Broadcast Stereo Format**
- **Precise Signal Regulation**
- **Front Panel LED Channel Display**
- **International Power Supply** *(90 - 260VAC)*
- **Adjacent Channel Performance**
- **Auxiliary AC Outlet**

FREQUENCY AGILE PROCESSORS

The **HPH Series** frequency agile processors have been designed to convert any off-air or cable channel to any unused cable channel. All channel conversions are performed using simple front panel buttons and a large LED display indicating input and output channels. Frequency control is accomplished by a microprocessor-controlled, PLL-synthesized tuning circuit to assure accurate, stable operation. The **HPH Series** uses dual SAW filtering to assure high out-of-band rejection, as well as high reliability. A CATV hybrid amplifier is used for low-distortion and high-output performance.

The **HPH-860AD** digital processor utilizes sophisticated SAW filters and circuitry specifically designed to process digital signals in addition to analog, retaining the digital integrity of broadcast channels.

RELATED PRODUCTS

The **SHC** converter is ideal for use in head-end and local origination applications to convert the incoming sub-band (T7 - T13) to VHF (7 - 13).



MODEL SHC

HPH SERIES AGILE PROCESSORS

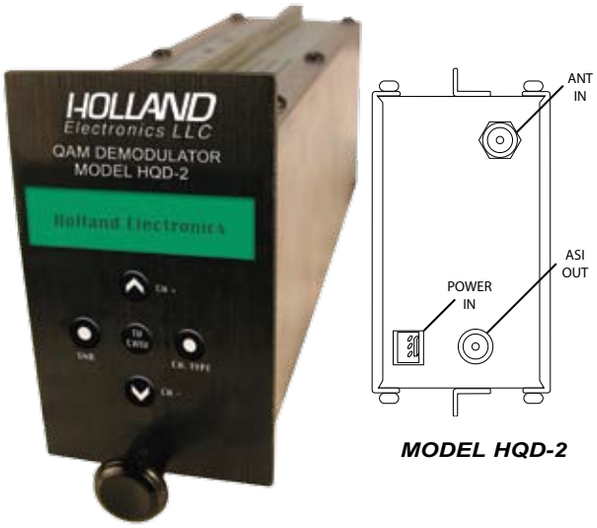
SPECIFICATIONS

INPUT SECTION	HPH-860	HPH-860AD
Input Channels	2 - 125 CATV/HRC (54 - 806 MHz) 14 - 69 UHF (470 - 806 MHz)	2 - 125 CATV/HRC (54 - 806 MHz) 14 - 69 UHF (470 - 806 MHz)
Selectivity	-60 dB (Adj. Ch.)	-60 dB (Adj. Ch.)
Noise Figure	8 dB: CATV / 10 dB: UHF	8 dB: CATV / 10 dB: UHF
Input Range	0 - 30 dB	0 - 30 dB Analog / -32 to +4 dB Digital
Tuning	PLL	PLL
OUTPUT SECTION		
Output Channels	2 - 135 CATV/HRC (54 - 860 MHz) 14 - 69 UHF (470 - 806 MHz)	2 - 135 CATV/HRC (54 - 860 MHz) 14 - 69 UHF (470 - 806 MHz)
FCC Offsets (Where Applicable)	±12.5 kHz, ±25 kHz (Selectable)	±12.5 kHz, ±25 kHz (Selectable)
Output Level	45 - 60 dBmV (Adj.)	45 - 60 dBmV (Adj.)
Frequency Stability	±5 kHz (Meets FCC Docket 21006)	±5 kHz (Meets FCC Docket 21006)
Aural Carrier	0 - 10 dB (Adj.)	0 - 10 dB (Adj.)
I.F. Output	35 dBmV @ 45.75 MHz	35 dBmV @ 45.75 MHz
Frequency Response	± 2 dB	± 2 dB
Spurious Outputs	-60 dBc	-60 dBc
C/N (In-Band)	60 dB	60 dB
Out-of-Band Noise	-60 dBc	-60 dBc
Return Loss	12 dB	12 dB
CONNECTORS		
RF Input, RF Output, IF	F	F
GENERAL		
Power Requirements	90 - 260VAC (50 - 60 Hz), 20 W	90 - 260VAC (50 - 60 Hz), 20 W
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 12”	19” x 1.75” x 12”
Weight	9 lbs.	9 lbs.
Auxiliary Outlet	Yes	Yes
Test Port	-30 dB	-30 dB

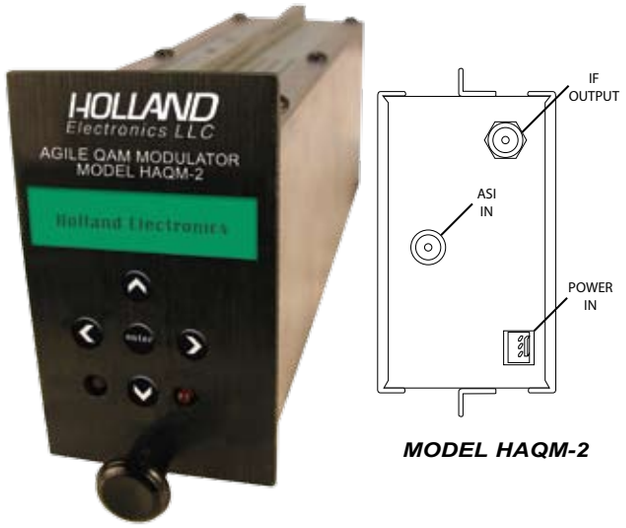
NOTE: All specifications typical unless otherwise noted

QAM DIGITAL HEAD-END EQUIPMENT

MODELS HQD-2 : HAQM-2



MODEL HQD-2



MODEL HAQM-2

FEATURES

- **Front Panel Controls & Display**
- **Designed to Work with the HMR & HMPS Rack/Power Supply**
- **Demodulates 8VSB or QAM 64 & 256 Signals**
- **Selectable Test Modes**
- **Encoding Solutions Available**

The digital head-end environment is changing very rapidly. Please call for the latest technology updates and products.

QAM DIGITAL DEMODULATOR - HQD-2

Professional quality demodulator designed to convert off-air digital ATSC/8VSB and CATV 64QAM or 256QAM signals to an MPEG-2 ASI stream. Capable of receiving frequencies between 54 and 864 MHz (VHF & UHF ch 2-13, 14-69 and CATV ch 2-135). Front panel controls and display provide full access to all settings and features. With a wide input AGC range and QAM auto selection the **HQD-2** is an ideal selection for digital head-end systems.

QAM DIGITAL MODULATOR - HAQM-2

Professional quality modulator designed to convert an MPEG-2 ASI stream to QAM (16–256). Provides DVB and DigiCipher II forward error correction encoding. Front panel controls and display provide full access to all settings and features including built-in testing modes to simulate an input signal. The **HAQM-2** modulator can be used with confidence in today's digital head-end systems.

DIGITAL DEMODULATORS



MODEL HDD



MODEL HMDD

FEATURES

- **Closed Captioning Support**
- **Non-Volatile Memory**
- **Agile Input**
- **LED Channel Display**
- **Auxiliary AC Outlet**

HDD & HMDD DIGITAL DEMODULATORS

The **HDD** & **HMDD** Demodulators permit the delivery of digital television signals in analog format directly to a television. They also interface easily with existing analog modulators on CATV networks. These high-performance digital receivers allow for the reception and demodulation of an 8VSB (Off-air SD/HD digital TV Signal) signal into a baseband NTSC video and audio output.

SPECIFICATIONS

RF	
Input Channels	2 - 135 CATV (54 - 560 MHz)
	2 - 13 VHF (470 - 806 MHz)
	14-69 UHF (470 - 806 MHz)
Input Power Range	-25 to 40 dBmV
Noise Figure	< 8 dB
Formats	ATSC/8VSB
VIDEO OUTPUT	
Formats	Baseband
Aspect Ratio	4:3 / 16:9
Output Level	1V p-p ± 0.2V p-p
Impedance	75 ohms
Frequency Response	±1.5 dB
AUDIO OUTPUT	
Formats	Stereo L/R
Output Level	1Vp-p
Impedance	600 ohms
Harmonic Distortion (THD)	1% Max
Outputs	Baseband

FRONT PANEL	
5 Key Function Controls	ASPECT / ZOOM
	CH+
	CH-
	SCAN
	AIR/CABLE
	AUDIO (SAP CAPABLE)
CONNECTORS	
RF In	F
Outputs	Composite Video, RCA Stereo Audio L/R, RCA
GENERAL	
Power Requirements	120VAC, 60 Hz, 8.33W
Operating Temperature	0° to 50° Celcius
Dimensions	HDD: 19" x 3.5" x 1.75"
	HMDD: 8.6" x 3.5" x 1"
Weight	HDD: 3.5 lbs.
	HMDD: .8 lbs.

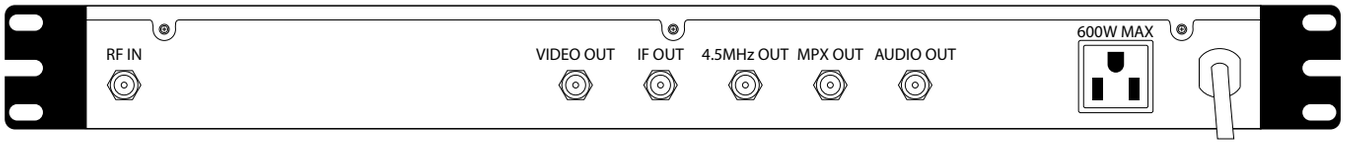
NOTE: All specifications typical unless otherwise noted

HD SERIES DEMODULATOR

MODEL HDM-1



MODEL HDM-1



FEATURES

- **Low-Distortion**
- **Agile Input**
- **SAW-Filtered**
- **Non-Volatile Memory** *(On-Channel Power Up)*
- **Front Panel LED Channel Display**
- **Adjustable A/V Outputs**
- **BTSC Stereo Output**
- **Auxiliary AC Outlet**

FREQUENCY AGILE DEMODULATOR

The **HDM-1** frequency agile demodulator (analog) is designed to receive and demodulate any VHF, UHF or CATV channel to baseband audio and video. The **HDM-1** uses a microprocessor-driven PLL-synthesized tuning circuit to assure accuracy. The microprocessor controls all functions and provides for easy channel selection using front panel channel up/down buttons.

RELATED PRODUCTS

The **SHC** converter is ideal for use in head-end and local origination applications to convert the incoming sub-band (T7 - T13) to VHF (7 - 13).



MODEL SHC

HD SERIES DEMODULATORS

SPECIFICATIONS

RF	
Input Channels	2 - 125 CATV (54 - 806 MHz) 14 - 61 UHF (470 - 806 MHz)
Input Power Range	-5 to 30 dBmV
Noise Figure	8 dB: CATV / 8 dB: UHF
VIDEO	
Output Level	.5 - 1.5V p-p (Adj.)
Impedance	75 ohms
Frequency Response	±2 dB
Differential Phase	< 5°
Differential Gain	< 5%
AUDIO	
Output Level	.8 - 1.5V p-p (Adj.)
Impedance	600 ohms
Harmonic Distortion	2%
Outputs	Baseband / MPX / 4.5 MHz
CONNECTORS	
RF In, Video Out, Audio Out, 4.5 MHz, MPX Out	F
GENERAL	
Power Requirements	117VAC, 60 Hz, 20 W
Operating Temperature	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 3.5”
Weight	5 lbs.

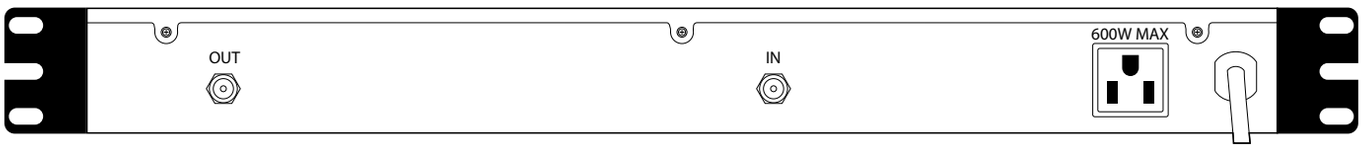
NOTE: All specifications typical unless otherwise noted

RACK-MOUNTED AMPLIFIERS

MODELS HCA-3051RK : HCA-3086RK

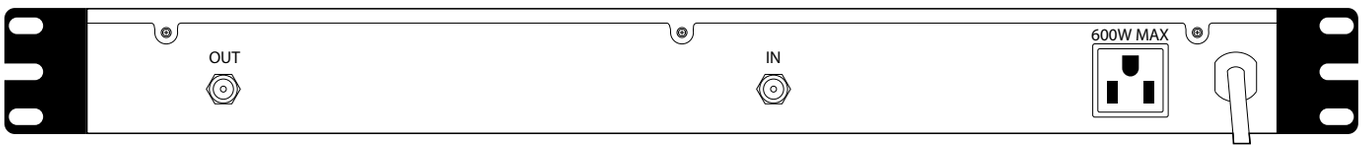


MODEL HCA-3051RK





MODEL HCA-3086RK



FEATURES

- **Push-Pull CATV Hybrid Amplifier**
- **High-Output/High-Channel Capacity**
- **Adjustable Gain & Slope**
- **-30 dB Output Test Port**
- **Auxiliary AC Outlet**

RACK-MOUNTED LAUNCH AMPLIFIERS

Holland Electronics' **HCA-3051RK** and **HCA-3086RK** are rack-mountable high-output hybrid amplifiers perfect for any head-end application.

These amplifiers utilize push-pull CATV hybrid circuitry assuring extremely low noise and distortion.

Front panel adjustable slope and gain allow easy system balancing.

RACK-MOUNTED AMPLIFIERS

SPECIFICATIONS

RF	HCA-3051RK	HCA-3086RK
Frequency	54 - 550 MHz (2 - 78)	54 - 860 MHz (2 - 135)
Gain	30 dB	30 dB
Gain Adjustment Range	10 dB	20 dB
Maximum Input	15 dBmV (77 Ch.)	12 dBmV (134 Ch.)
Maximum Output	45 dBmV (77 Ch.)	42 dBmV (134 Ch.)
Slope	0 - 10 dB (Adj.)	0 - 15 dB (Adj.)
Flatness	±1 dB	±1 dB
Noise Figure	7.5 dB	7.5 dB
Input Return Loss	16 dB	16 dB
Output Return Loss	16 dB	16 dB
Cross Modulation (XMOD)	-58 dB	-58 dB
Composite Triple Beat (CTB)	-60 dB	-60 dB
Hum Modulation	-60 dB	-60 dB
CONNECTORS		
RF In, RF Out	F	F
GENERAL		
Power Requirements	117VAC, 60 Hz, 8 W	117VAC, 60 Hz, 14 W
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 3.5”	19” x 1.75” x 3.5”
Weight	4 lbs.	4 lbs.
Test Port	-30 dB	-30 dB

NOTE: Two-way compatible using optional SBD Diplexer.
See page 47 for SBD specifications.

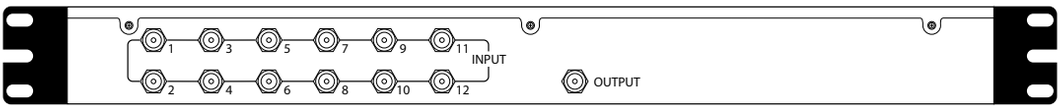
NOTE: All specifications typical unless otherwise noted

HEAD-END COMBINERS

MODELS HCG-12 : HCG-24 : AHC-16-860

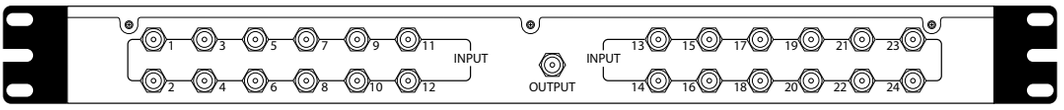


MODEL HCG-12



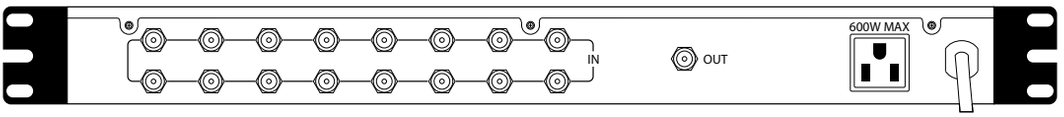


MODEL HCG-24





MODEL AHC-16-860



FEATURES

- **High Isolation Design**
- **Consistent Port-to-Port Performance**
- **Front Panel Test Port**
- **Low-Distortion Hybrid Amplifier** *(AHC-16-860)*
- **HCG-12 & 24 can be used as splitters**
- **Auxiliary AC Outlet** *(AHC-16-860)*

PASSIVE COMBINERS

The **HCG Series** (12-port / 24-port) passive head-end combiners are designed to combine multiple RF inputs into a single RF output while maintaining high isolation between ports. The HCG Series combiners operate at a full 1 GHz passband.

ACTIVE COMBINER

The **AHC-16-860** is a high isolation 16 channel active head-end combiner utilizing an integrated CATV hybrid push-pull amplifier. The AHC-16-860 provides gain to overcome insertion loss and drive the distribution system. This combiner features a front-panel gain control and a -20 dB test port.

HEAD-END COMBINERS

SPECIFICATIONS

RF	HCG-12	HCG-24
Frequency	5 - 1000 MHz	5 - 1000 MHz
Insertion Loss (Max)	16 dB	20 dB
Port-to-Port Isolation	30 dB	35 dB
Input Return Loss (Min)	18 dB	22 dB
Output Return Loss (Min)	12 dB	12 dB
GENERAL		
Operating Temperature	0˚ to 50˚ Celsius	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 3.5”	19” x 1.75” x 3.5”
Weight	4 lbs.	4 lbs.
Test Port	-20 dB	-20 dB

RF	AHC-16-860
Frequency	54 - 860 MHz
Gain	6 - 12 dB (Adj.)
Port-to-Port Isolation	40 dB
Input Return Loss (Min)	16 dB
Output Return Loss (Min)	14 dB
Maximum Input Level	58 dBmV (16 Ch.)
GENERAL	
Power Requirements	117VAC, 60 Hz, 12 W
Operating Temperature	0˚ to 50˚ Celsius
Dimensions	19” x 1.75” x 3”
Weight	4.5 lbs.
Test Port	-20 dB
Auxiliary Outlet	Yes

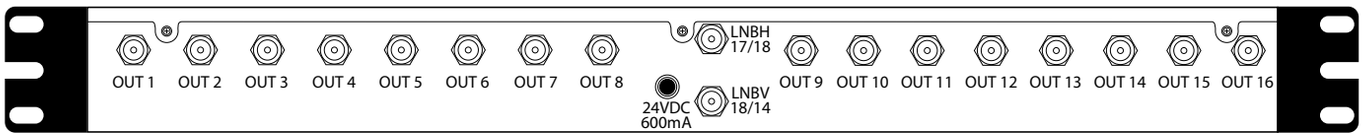
NOTE: All specifications typical unless otherwise noted

RACK-MOUNTED MULTI-SWITCHES

MODELS HMS-16APR : HMS-412 ARK

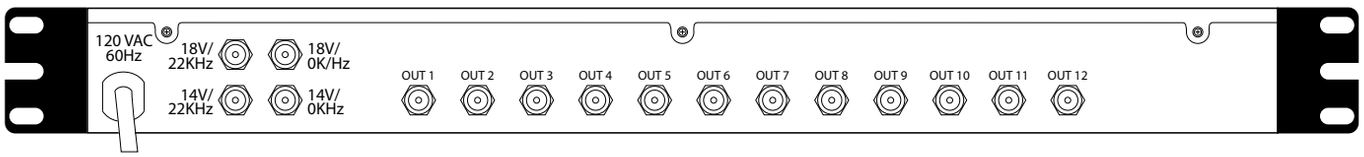


MODEL HMS-16APR





MODEL HMS-412ARK



FEATURES

- **Single Satellite Input** *(HMS-16APR)*
- **Multi-Satellite Input** *(HMS-412ARK)*
- **Low-Distortion Amplification**
- **Provides LNB Powering**
- **Generates 22 kHz Tone** *(HMS-412ARK)*
- **High Isolation**
- **High Reliability**

SINGLE SATELLITE SWITCH

The **HMS-16APR** is a rack-mounted multi-switch specifically designed for head-end applications. The switch generates the voltage required for powering a dual LNB (13 & 18 volts). Also provides amplification to help overcome the insertion loss of the 16 outputs.

MULTI-SATELLITE SWITCH

The **HMS-412ARK** is a 4 LNB input, 12 output multi-switch designed to provide solid state multi-sat switching for head-end systems. This unit provides 13 and 18 volts as well as 22 kHz tone to lock the LNBs on the required satellites.

RACK-MOUNTED MULTI-SWITCHES

SPECIFICATIONS

RF	HMS-16APR	HMS-412ARK
Input Frequency	950 - 2150 MHz	950 - 2150 MHz
LNB Power	13V, 18V	13V, 18V 13V + 22 kHz, 18V + 22 kHz
Insertion Loss (Max)	-4 dB 950-2150 MHz	3 dB Gain 950 - 2150 MHz
Isolation	25 dB	30 dB
Switching Voltage (Rx to Switch)	13/18VDC	13/18VDC, 0/22 kHz
CONNECTORS		
All Ports	F	F
GENERAL		
Power Requirements	24VDC, 600 mA Center + (AC to DC Transformer Included)	117VAC, 60 Hz, 26 W
Weight	6 lbs.	5 lbs.
Dimensions	19" x 1.75" x 3.5"	19" x 1.75" x 5.5"

NOTE: All specifications typical unless otherwise noted

SUB-BAND TO HIGH-BAND CONVERTER

MODEL SHC

- **Converts Sub-Band to High-Band**
- **Can be Used with Optional SBD (Sub-Band Diplexer)**
- **Works with HPH-860 & HDM-1**



MODEL SHC

SUB-BAND TO HIGH-BAND CONVERTER

The **SHC** converter is ideal for use in head-end and local origination applications in head-end applications to convert the incoming sub-band (T7 - T13) to VHF (7 - 13).

For local origination applications, the SHC can be used in offices, hospitals or any situation where sub-band can be utilized to allow a TV within the system to view channels not available to others. These converted sub-band channels can then be redistributed using standard processors and demodulators.

SPECIFICATIONS

RF	SHC
Input Channels	T7 - T13 (7 - 47 MHz)
Output Channels	7 - 13 (174 - 216 MHz) (T7 converts to Ch. 7, etc.)
Insertion Loss (Max)	-7 dB
Frequency Stability	±5 kHz
Input Level Range	5 - 30 dBmV
POWER SUPPLY	
Input Voltage	120VAC, 60 Hz
GENERAL	
Weight	1.5 lbs.
Dimensions	6" x 3" x 1.5"

PRE-BUILT HEAD-END SYSTEMS

PRE-BUILT HEAD-END : 2-POST HEAD-END RACK : 4-POST HEAD-END RACK



WE BUILD, BURN-IN, BALANCE & SHIP TO YOUR JOB-SITE!

Holland Electronics is proud to offer pre-racked head-ends to simplify your next commercial installation. We offer both **mini-mods and full-sized modulators** or a combination of both if desired. All of our **head-ends are burned in, balanced** and **re-tested** to ensure signal stability before we **ship it to your job site**.

Pre-racked head-ends include all adapters, color coded cables, interconnects and components necessary for **plug and play** operations. We also provide a five-year warranty on all parts.

- **All Systems Burned In & Balanced**
- **Mini-Mods & Full-Sized Available**
- **Color Coded Interconnect Jumpers**
- **5-Year Warranty**
- **We Crate & Deliver the Head-End to Your Job Site!**



MOR-71

2-POST HEAD-END RACK

- *Standard 71" free-standing, open-frame equipment rack*
- *Solid construction, 12 gauge steel*
- *Fine-thread, panel-mounting screw holes*
- *Resistant black, hammertone finish*
- *Mounting capacity: 40 - 1.75" rack devices*
- *19" panel widths*
- *2' x 2' base for added stability*
- *Pre-drilled holes in base to add casters*
- *2 vertical posts*
- *Meets EIA standard RS31OC 19" rack spacing*
- *Assembly required*



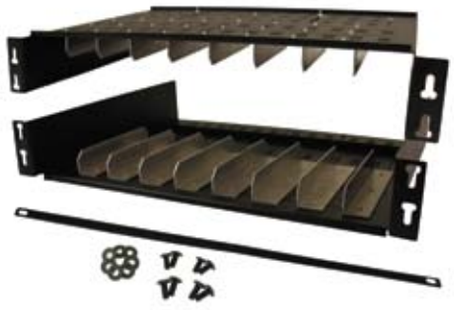
MOR-71-4-KIT
(ADD-ON TO MOR-71)

4-POST HEAD-END RACK KIT

- *4-post kit adapter adds 2 additional 14AWG steel posts for increased stability to the 2-post MOR-71 rack*
- *Supplies extra space to mount accessories such as combiners, power strips & amplifiers*
- *Note: in order to get a 4-post rack you need to purchase the MOR-71 and MOR-71-4-KIT together*

*** SEE SUPPORT SECTION OF OUR SITE (WWW.HOLLANDELECTRONICS.COM/SUPPORT) FOR MOR-71 RACK ASSEMBLY INSTRUCTIONS.**

HEAD-END ACCESSORIES



MODEL RK-UNIV



Example shows DISH Network receivers mounted in one rack

UNIVERSAL HEAD-END RECEIVER RACK

The RK-UNIV is an adjustable head-end rack designed to vertically mount receivers, decoders or media players into a standard 19-inch rack system. Perfect for hotels where head-end space is limited. The RK-UNIV's adjustability allows you to mount any type of device without the need to improvise by using special hardware. This rack is slotted for ventilation and all mounting hardware is included.

QTY	MOST COMMON RECEIVERS
9	DishNetwork 301, 311, 322, 351
6	DishNetwork 2700, 2800, 3700, 3750, 3800, 3900, 4700, 4900
7	DirecTV D12

MAX DEPTH	HEIGHT RANGE	WIDTH RANGE
12.625"	1.75" - 2.75"	6.9" - 15.3"

19" RACK SHELF

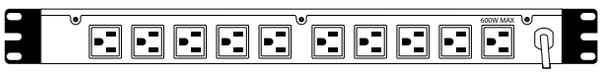
The ORS-V vented rack shelf is ideal for satellite receivers, DVD players, monitors or other non-rack-mounted equipment. Black finish, 19" x 2.75" x 12.5". Rated to 15 lbs.



MODEL ORS-V



MODEL HAC-10RK



10-OUTLET POWER STRIP

Standard rack-mounted power strip containing 10 surge protected AC outlets and a relay switch for over-current protection and a power rating of 15 amps.



MODEL RSW

RACK SCREWS

RSW rack screws, size 10-32, are black anodized and precision threaded. Available in bags of 100 with non-scratch washers included.

MULTIMEDIA MODULATORS

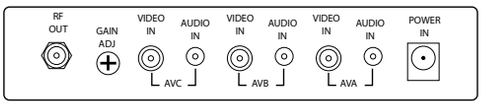
MODELS HMM-3 : HMM-10H : 6203-1

MULTIMEDIA MODULATORS

The **HMM-3** and **HMM-10H** are microprocessor-controlled agile modulators (CATV ultraband and UHF) developed to add satellite, VCR, DVD or security video channels to an existing home distribution system.



MODEL HMM-3



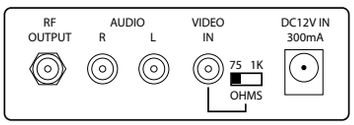
HMM-3 : TRIPLE MODULATOR

The HMM-3 accepts three audio/video input sources and modulates to three different non-adjacent channels that are combined into a single output.

- **High-Output** *(25 dB)*
- **Push Button Programming**
- **Non-Volatile Memory**
- **LED Front Panel Display**
- **Built-In Combiner - Providing a Single Output**
- **Switchable Video Impedance** *(For Loop-Thru)*



MODEL HMM-10H



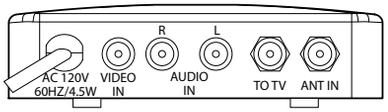
HMM-10H : SINGLE MODULATOR

The **HMM-10H** accepts one audio/video input source and modulates to a single RF output.

- **High-Output** *(25 dB)*
- **Push Button Programming**
- **Non-Volatile Memory**
- **LED Front Panel Display**
- **Switchable Video Impedance** *(For Loop-Thru)*



MODEL 6203-1



CHANNEL 3/4 MODULATOR

The **6203-1** Video RF modulator is designed to convert the separate audio and video signals (from a video camera, computer, portable VCR, or satellite receiver, for example) into VHF TV signals that you can view on a TV set.

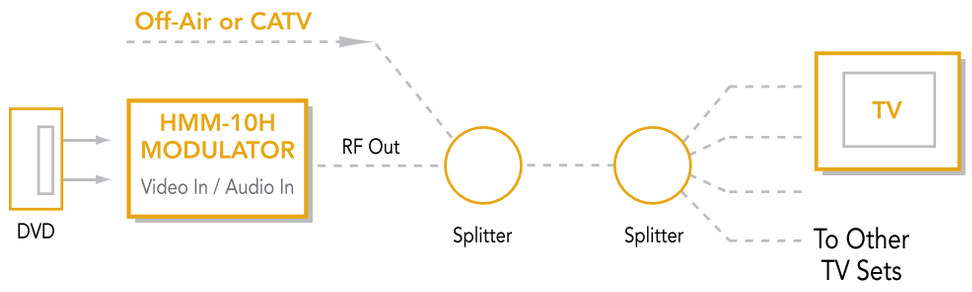
- **Output:** **CH 3/4 Selectable F-Connector**
- **Input:** **AV Baseband**
- **Antenna:** **Loop-thru**

SERIES MULTIMEDIA MODULATORS

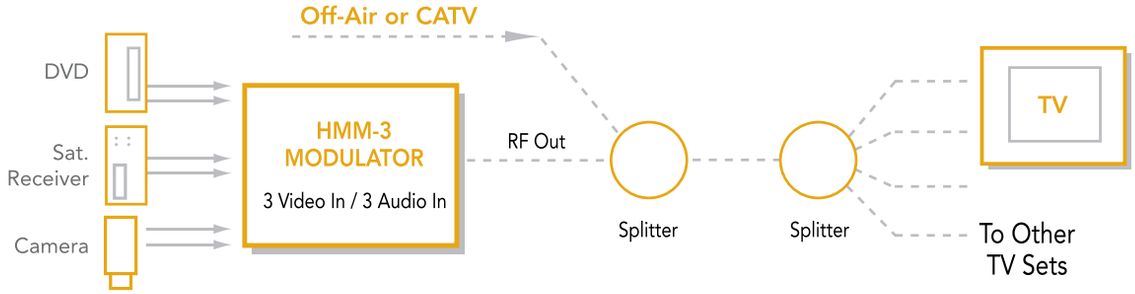
SPECIFICATIONS

RF	HMM-3	HMM-10H
Frequency Range	470 - 860 MHz	470 - 860 MHz
Output Channels	CATV: 65 - 135 (excluding 95-99), UHF: 14 - 78	CATV: 65 - 135 (excluding 95-99), UHF: 14 - 78
Output Level	25 dBmV (15 dB Adj.)	25 dBmV
Frequency Stability	PLL Crystal Stabilized ±5 kHz	PLL Crystal Stabilized ±5 kHz
VIDEO		
Input Level (Min.)	1V p-p (for 87.5% Modulation)	1V p-p (for 87.5% Modulation)
AUDIO	**3**	**1**
Input Level	1V RMS, 10K ohms	1V RMS, 10K ohms
CONNECTORS		
Video In, Audio In	RCA	RCA
RF Output	F	F
GENERAL		
Power Requirements	117VAC, 60 Hz, 12 W	117VAC, 60 Hz, 12 W
Operating Temperature	0° to 50° Celsius	0° to 50° Celsius
Dimensions	5.5" x 3.25" x 1.15"	3.5" x 3.75" x 1.15"
Weight	.6 lb.	.45 lb.

SINGLE MODULATOR INSTALLATION



TRIPLE MODULATOR INSTALLATION



NOTE: All specifications typical unless otherwise noted

AB SWITCHES

MODELS AB-90 : AB-4 : AB-75



MODEL AB-90

HIGH-ISOLATION PUSH BUTTON AB SWITCHES

The **AB-90** is the latest design of high isolation RF switches have the advantage of top-mounted push buttons. The AB-90 is designed to have higher isolation and increased reliability over other push-button switches.



MODEL AB-4

The AB-4 features the same performance as the AB-90 with forward-facing push buttons.

MODEL AB-90, AB-4	
Frequency Range	DC - 2 GHz
Isolation	90 dB, 54 - 216 MHz 70 dB, 216 - 750 MHz 60 dB, 750 - 1 GHz
Return Loss (Min)	20 dB
Insertion Loss (Max)	<1 dB (DC - 1 GHz)

NOTE: All specifications typical unless otherwise noted



MODEL AB-75

ECONOMY A/B SWITCH

The AB-75 is an economy RF A/B switch for applications where standard performance is acceptable and a top slide is the desired activation method.

WALL PLATES

MODELS BP : WP : WPG

BP SERIES: BLANK WALL PLATES

Holland Electronics' blank wall plates are made from high-impact plastic, available with one or two 3/8" holes (inset hex). Available in ivory or white.



BP-1*



BP-4*



BP-2*

WP SERIES: WALL PLATES WITH STANDARD SPLICE

The WP Series wall plates use the same high-impact plastic as our BP Series. Available in combinations utilizing our standard F splice and telephone jacks. Available in ivory or white.



WP-81*



WP-81D*



WP-T81*



WP-T81D*

WPG SERIES : 3 GHz WALL PLATES WITH PATENTED HIGH-PERFORMANCE 3 GHz SPLICE

WPG Series wall plates use Holland Electronics' patented high-return loss 3 GHz splice and trademarked blue insulator. Ideal for CATV and satellite applications. Available in combinations utilizing our 3 GHz splice and telephone jacks. All modular receptacles are four conductor type. Available in ivory and white.



WP-81G*



WP-81GD*



WP-T81G*



WP-T81GD*

*** = COLOR:** **IV=ivory / WH=white**

All telephone jacks are 6P4C. Applicable Splice Patents - reference: S / U / V / W / X - See page 111 for patent details

CABLE MANAGEMENT

MODELS CC-* : CT-* : FTB-* : WB-1UV : WS-*

CABLE CLIPS

High impact plastic clips with pre-installed steel nails. Suitable for wood or masonry applications. Available in black or white.



MODEL CC-6*, CC-7*, CC-155*

CABLE CLIPS	CABLE TYPE	NAIL LENGTH
CC-3.5B, CC-3.5I	Ground Wire	.59”
CC-6B, CC-6I	Series-59 Cable	1.1”
CC-7B, CC-7I	Series-6 Cable	1.1”
CC-135B, CC-135I	Series-59 Dual	1.1”
CC-155B, CC-155I	Series-6 Dual	1.1”

CABLE TIES

High tensile strength nylon cable ties. Available in black or white.



MODEL CT-*

CABLE TIES	NOMINAL LENGTH	MIN. TENSILE STRENGTH	MAX. BUNDLE DIAMETER
CT-20*	4”	20 lbs.	1”
CT-30*	6”	30 lbs.	1 1/4”
CT-50*	8”	50 lbs.	2 3/4”
CT-11*	11”	75 lbs.	3 1/4”
CT-14*	14”	120 lbs.	4”

*** = COLOR: B=black / W=white**



MODELS FTB-56 / FTB-59

FEED-THROUGH BUSHINGS

Holland Electronics’ feed-through bushings are made from UV-stabilized ABS plastic. Available in black or white, single or dual cable bushings available.



MODEL WB-1UV

WEATHER BOOT

Inhibits moisture in F connections by maintaining a tight seal around the connector and cable. UV resistant and ribbed for easy installation.



MODELS WS-250, WS-375, WS-500

WEATHER SEALS

Used on standard F-female ports for weather-proofing the F-connector and F-port connection. Recommended for all outdoor installations. Available in 1/4” (WS-250), 3/8” (WS-375) and 1/2” (WS-500) thicknesses.

INSTALLATION MATERIALS

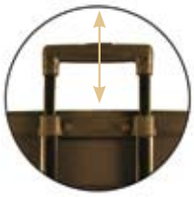
INSTALLER BAG : SFT-* : VC-6-5



INSTALLER BAG

MINI CABLE INSTALLER BAG

This tool bag was designed with the custom home theater technician in mind. The top has a special compartment perfect for a tackle box or any other applicable container for small parts. Beneath the top compartment is a space with 12 large adjustable velcro-lined bins for connectors, adaptors and other small parts. Also included are 7 external pouches with velcro closures for compression tools, cable cutters, cable strippers, meters and other hand tools. There is also room for 2 spools of mini cable to be dispensed through the bottom. Wheeled for easy transportation and rugged enough to sit on.



Telescoping Handle Extends up to 2 feet



Convenient "Easy-Grab" Elastic Bands



Small Tools Compartment



Houses 2 Spools of Mini Cable

MINI CABLE: SEE PAGE 16, MINI CONNECTORS: SEE PAGE 23



MODELS
SSFT-112C & SSFT-112B

SELF-FUSING SILICONE TAPE

Rescue Tape Brand - Self-Fusing Silicone Tape Resists Water, Fuels, Oils, Acids, Solvents and More! Just stretch and wrap around any object, lapping the tape onto itself will quickly fuse together to form a permanent air-tight, water-tight seal in minutes. You can instantly repair damaged cable jackets or seal ports to prevent moisture ingress as well as many, many other uses. No glues or adhesives are used and leaves no residue when removed. It's entirely up to your imagination what this product can be used for.

STOCKED IN TWO COLORS:

SSFT-112C - *Clear*

SSFT-112B - *Black*

Other colors available upon request



MODEL VC-6-5

SILICONE GREASE

Silicone dielectric compound is ideal for use with CATV connectors as a high voltage insulator, corrosion preventative, moisture barrier and flashover protection for electrical insulators.

GHS/GSV SERIES DIGITAL CATV SPLITTERS

MODELS GHS-2 : GHS-3 : GHS-4 : GHS-8 : GSV-2 : GSV-3 : GSV-4 : GSV-6 : GSV-8



MODEL GHS-2



MODEL GHS-3



MODEL GHS-4



MODEL GHS-8



MODEL GSV-2



MODEL GSV-3



MODEL GSV-4



MODEL GSV-6



MODEL GSV-8

FEATURES

- **SCTE Compliant Flat-End F-Ports**
- **Enhanced Return Path Specifications**
- **Low Intermodulation Distortion**
- **Capacitor Decoupled**
- **130 dB RFI Shielding**
- **3-Way Ground Screw: Hex/Phillips/Slot**

CATV DIGITAL SPLITTERS

The **GHS and GSV Series** 1 GHz Splitters were designed to meet the latest digital and return path requirements.

BLACK LABEL GHS DIGITAL CATV SPLITTERS

MODELS GHS-2* : GHS-3* : GHS-4*

- **Smaller Housings for Tight Installations**
- **SCTE-Compliant Flat-End F-Ports**
- **Nickel Plated**



** POWER PASSING MODELS AVAILABLE - SEE PAGE 89*

GHS/GSV SERIES DIGITAL CATV SPLITTERS

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	GHS-2		GHS-3		GHS-3B		GHS-4		GHS-8	
		TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.
Insertion Loss (dB)(Max)	5 - 15	3.5	3.6	3.7 / 6.9	3.8 / 7.0	5.6	5.8	7.0	7.1	10.7	11.2
	16 - 40	3.6	3.7	3.7 / 6.9	3.8 / 7.0	5.6	5.8	6.8	6.9	10.5	11
	41 - 450	3.7	3.8	3.7 / 7.0	3.8 / 7.0	6.2	6.5	7.0	7.1	11	11.5
	451 - 750	3.8	3.9	3.9 / 7.5	4.0 / 7.6	6.3	6.5	7.5	7.6	12	12.5
	751 - 1000	3.9	4.0	4.0 / 8.0	4.2 / 8.2	6.9	7	8.1	8.2	12	12.5
Isolation (dB)	5 - 15	26	25	30	22	25	20	30	22	24	20
	16 - 40	45	40	38	35	38	35	40	32	28	25
	41 - 450	31	30	30	25	28	25	30	25	28	25
	451 - 750	31	30	28	25	25	23	28	25	23	20
	751 - 1000	30	25	25	23	22	20	25	23	22	20
Input Return Loss (dB)(Min)	5 - 15	25	24	25	20	22	20	25	20	24	20
	16 - 40	26	25	28	24	25	22	28	24	26	22
	41 - 450	26	25	28	23	25	22	28	23	24	20
	451 - 750	26	25	28	20	23	20	25	20	23	20
	751 - 1000	25	22	24	20	22	20	21	20	22	20
Output Return Loss (dB)(Min)	5 - 15	26	24	25	22	24	20	25	20	24	20
	16 - 40	35	30	35	30	32	28	30	28	27	24
	41 - 450	26	25	30	23	25	22	28	23	25	21
	451 - 750	26	25	25	20	22	20	25	20	24	20
	751 - 1000	25	22	24	20	22	20	21	20	23	20

PARAMETER	FREQUENCY RANGE (MHz)	GSV-2		GSV-3		GSV-4		GSV-6		GSV-8	
		TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.
Insertion Loss (dB)(Max)	5 - 15	3.3	3.5	3.5 / 6.8	3.6 / 6.9	6.8	6.9	9.1	9.2	10	10.5
	16 - 40	3.3	3.5	3.5 / 6.9	3.6 / 7.0	6.9	7.0	9.1	9.2	10.3	10.8
	41 - 450	3.6	3.8	3.8 / 7.4	3.9 / 7.5	7.4	7.5	9.9	10	11	11.5
	451 - 750	3.9	4.2	4.0 / 8.0	4.1 / 8.1	8	8	10.5	11	11.7	12.2
	751 - 1000	4	4.4	4.0 / 8.0	4.2 / 8.2	8.1	8.2	11.3	11.5	12.2	12.5
Isolation (dB)	5 - 15	26	20	35	23	29	24	24	23	30	25
	16 - 40	33	25	38	25	29	25	25	24	30	24
	41 - 450	35	22	36	22	30	25	23	22	25	22
	451 - 750	32	20	30	22	28	24	22	20	23	21
	751 - 1000	28	20	25	20	27	24	21	20	22	20
Input Return Loss (dB)(Min)	5 - 15	24	20	21	19	22	18	19	18	22	18
	16 - 40	27	22	23	21	24	20	21	20	25	22
	41 - 450	23	20	23	20	25	21	21	20	24	20
	451 - 750	24	18	22	20	22	18	20	18	23	19
	751 - 1000	24	18	21	18	21	18	19	18	22	18
Output Return Loss (dB)(Min)	5 - 15	22	20	20	18	21	18	17	16	22	18
	16 - 40	28	22	32	20	25	22	21	20	28	22
	41 - 450	31	20	26	20	28	25	21	20	24	20
	451 - 750	30	20	22	18	23	18	20	18	23	19
	751 - 1000	25	20	20	18	21	18	19	18	22	18

NOTE: All specifications typical unless otherwise noted

GHS-*FC LI SERIES DIGITAL CATV SPLITTERS

MODELS GHS-2FC LI : GHS-3FC LI : GHS-4FC LI : GHS-8FC LI



MODEL GHS-2FC LI



MODEL GHS-3FC LI



MODEL GHS-4FC LI

FEATURES

- **Patented Design**
- **Low Intermodulation Distortion**
- **Non-Magnetizing Ferrite Design**
- **Pressure-Sealed F-Ports to 30 PSI**
- **Flat-End, Small Aperture F-Ports with 1” Spacing**
- **UL-Listed: Ground Block** *(Optional Model)*
- **Capacitor Decoupling on All Ports**
- **6kV Survivability**
- **Enhanced Return Loss & Isolation**
- **Heavy-Duty Zinc Rear Cover**

PREMIUM DIGITAL CATV SPLITTERS

The **GHS-FC LI Series** splitters are premium digital splitters featuring low intermod distortion and non-magnetizing circuit design. The low intermod distortion feature allows high-level return path signals (cable modems, STBs, etc.) while maintaining product integrity and eliminating the possibility of harmonics due to magnetization. Also features sealed F-ports which protect splitter circuitry from varying environmental conditions. Zinc rear cover ensures maximum outdoor survivability.

Applicable Patents - reference: M - See page 111 for patent details

GHS-FC LI SERIES CATV SPLITTERS

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	GHS-2FC LI		GHS-3FC LI		GHS-3BFC LI		GHS-4FC LI	
		TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.
Insertion Loss (dB)(Max)	5 - 15	3.3	3.4	3.4 / 7.0	3.5 / 7.1	5.6	6.0	7.4	7.7
	16 - 40	3.4	3.5	3.5 / 7.2	3.6 / 7.3	5.5	6.0	7.1	7.3
	41 - 450	3.8	3.9	3.6 / 7.4	3.8 / 7.5	5.7	6.5	7.2	7.3
	451 - 750	3.8	3.9	3.7 / 7.4	4.0 / 8.0	5.9	6.8	7.3	8.0
	751 - 1000	3.8	3.9	3.9 / 7.9	4.0 / 8.0	6.5	7.1	7.5	8.0
Isolation (dB)	5 - 15	23	22	23	22	28	22	30	22
	16 - 40	41	40	36	35	36	30	40	35
	41 - 450	35	30	36	30	30	25	30	25
	451 - 750	28	25	31	25	28	22	29	25
	751 - 1000	26	25	26	25	25	20	28	25
Input Return Loss (dB)(Min)	5 - 15	23	22	23	22	24	20	25	20
	16 - 40	26	25	25	24	28	24	28	24
	41 - 450	28	25	24	23	26	22	28	23
	451 - 750	25	22	23	22	25	22	27	20
	751 - 1000	23	22	23	22	23	20	25	20
Output Return Loss (dB)(Min)	5 - 15	23	22	23	22	24	22	25	20
	16 - 40	31	30	31	30	32	28	35	30
	41 - 450	28	25	29	23	28	23	28	23
	451 - 750	25	22	24	22	25	22	26	22
	751 - 1000	23	22	23	22	24	20	22	20
GENERAL									
Temperature Range	-40° to 60° C	-40° to 60° C		-40° to 60° C		-40° to 60° C		-40° to 60° C	
Port Spacing	1”	1”		1”		1”		1”	
RFI	>130 dB	>130 dB		>130 dB		>130 dB		>130 dB	
Impedance (ohms)	75	75		75		75		75	
Blocking Capacitors	Yes	Yes		Yes		Yes		Yes	

NOTE: All specifications typical unless otherwise noted

GHPNA SERIES COAXIAL IPTV SPLITTERS

MODELS GHPNA-2 : GHPNA-3 : GHPNA-4 : GHPNA-6



MODEL GHPNA-2



MODEL GHPNA-3



MODEL GHPNA-4



MODEL GHPNA-6

FEATURES

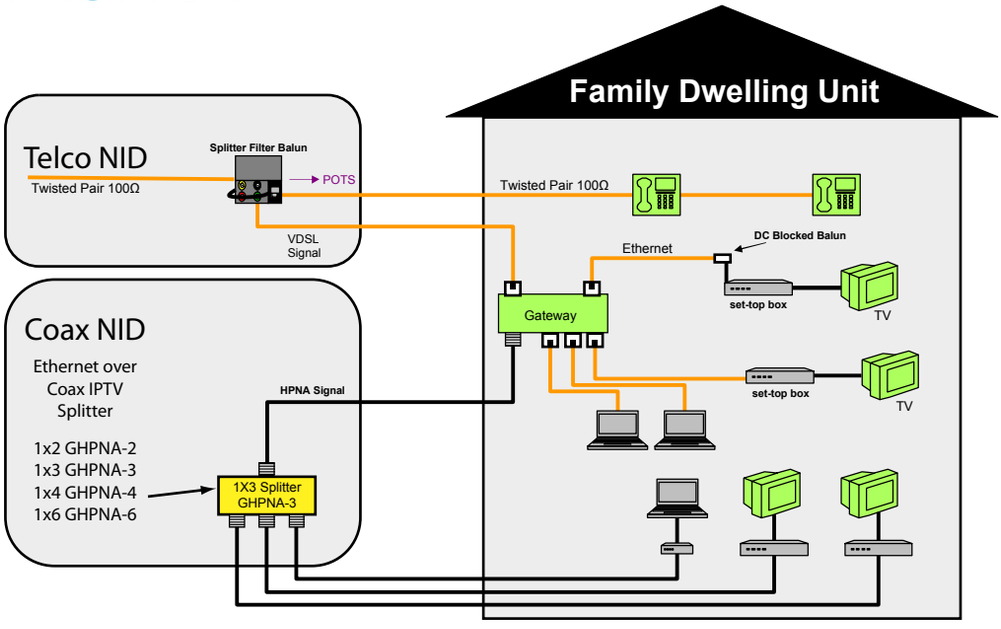
- **HomePNA Compatible**
- **Low Port-to-Port Isolation**
  (for HomePNA Communications)
- **Meets SCTE Requirements**
- **Expanded Pass Band**
  (for future communication channels)

COAXIAL IPTV SPLITTERS

The Holland Electronics' **GHPNA-*** Series Coaxial IPTV Splitters have been specifically designed to work in HPNA environments. The low port-to-port isolation allows HPNA communication signals to pass through the splitters to set-top boxes with as little signal loss as possible. At the same time, the GHPNA Series splitters provide good return loss and isolation for in-band frequencies other than HPNA.

Holland Electronics is a member of:

HomePNA™



The diagram above explains how GHPNA Series Coaxial IPTV Splitters work in a common residential installation.

GHPNA SERIES COAXIAL IPTV SPLITTERS

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	GHPNA-2 TYP.	GHPNA-2 QC.	GHPNA-3 TYP.	GHPNA-3 QC.	GHPNA-4 TYP.	GHPNA-4 QC.	GHPNA-6 TYP.	GHPNA-6 QC.
Insertion Loss (Max dB)	4 - 1500	6	8	9	10	11	12	14	15
Return Loss Input (Min dB)	4 - 1500	14	12	13	12	13	12	13	12
Return Loss Output (Min dB)	4 - 1500	15	12	15	12	15	12	14	12
Isolation Output (Max dB)	4 - 1000	6	8	8	10	11	12	14	15
HOUSING									
Plating:	Nickel								
Backcover:	Tin plated cover / solder-back								
Pin:	Round Pins w/ white insulators								
Screws:	1 grounding & 2 mounting								

NOTE: All specifications typical unless otherwise noted

DCG-*SB SERIES DIRECTIONAL COUPLERS

MODELS DCG-*SB : DCWG-*SB : DCG2-*SB : DCG4-*SB



MODEL DCG-*SB



MODEL DCWG-*SB



MODEL DCG2-*SB



MODEL DCG4-*SB

FEATURES

- **1 GHz Bandwidth**
- **130 dB RFI Shielding** *(Solder-Back)*
- **High Up-Stream Isolation** *(Tap-Out)*
- **High Return Loss**
- **Precision Machined Threads**

HIGH-PERFORMANCE DIRECTIONAL COUPLERS

The DCG-SB Series of high quality directional couplers have been developed to meet the rigorous requirements of MDU distribution. High return loss and low insertion loss make the DCG-SB Series ideal for any application. Advanced PCB design assures consistent performance.



***NOTE:** Holland Electronics also offers DCG-* models with an economically-designed epoxy sealed cover.*

DCG-*SB SPECIFICATIONS

1-PORT MODELS (DCG-*SB)

* TAP VALUE	6	9	12	16	20	24	27	30
Insertion Loss (dB) (Max) (In - Out)								
5 - 47	2	1.5	1	.8	.8	.7	.7	.7
48 - 450	2	1.5	1	.8	.8	.6	.6	.6
451 - 750	2.3	1.6	1.3	1	1	.8	.8	.8
751 - 1000	2.5	2	1.5	1.2	1.2	1	1	1
Isolation (dB) (Out - Tap)								
5 - 47	25	30	30	35	40	40	40	41
48 - 450	25	25	28	30	35	40	40	40
451 - 750	22	24	25	28	30	35	35	40
751 - 1000	22	22	22	23	25	30	35	36

2-PORT MODELS (-*SB)

* TAP VALUE	9	12	16	20	24	27	30	
Insertion Loss (dB) (Max) (In - Out)								
5 - 47	3.5	1.9	1.5	.7	.7	.7	.7	-
48 - 450	3.4	1.5	1.3	.6	.6	.6	.6	-
451 - 750	3.6	2	1.5	.8	.8	.8	.8	-
751 - 1000	4	2.2	1.7	1	1	1	1	
Isolation (dB) (Out - Tap)								
5 - 47	25	35	35	40	45	45	45	-
48 - 450	25	25	30	35	40	40	40	-
451 - 750	22	24	28	30	35	35	35	-
751 - 1000	22	22	23	27	30	30	30	-

4-PORT MODELS (DCG4-*SB)

* TAP VALUE	8	12	16	20	24	30		
Insertion Loss (dB) (Max) (In - Out)								
5 - 47	Self Term.	3.7	1.4	.9	.9	.9	-	-
48 - 450	Self Term.	3.9	1.3	.8	.8	.8	-	-
451 - 750	Self Term.	4	1.7	.9	.9	.9	-	-
751 - 1000	Self Term.	4.1	1.9	1.1	1.1	1.1	-	-
Isolation (dB) (Out - Tap)								
5 - 47	Self Term.	27	30	32	40	45	-	-
48 - 450	Self Term.	27	28	30	35	40	-	-
451 - 750	Self Term.	22	26	28	30	37	-	-
751 - 1000	Self Term.	21	23	25	29	34	-	-

GENERAL	5 - 47 MHz	48 - 450 MHz	451 - 750 MHz	751 - 1000 MHz
Input Return Loss (dB) (Min)	18	20	20	18
Output Return Loss (dB) (Min)	18	20	20	18
Tap Return Loss (dB) (Min)	20	20	20	20

NOTE: All specifications typical unless otherwise noted

SATELLITE / BROADBAND SPLITTERS

MODELS HFS-2 : HFS-2P : HFS-4 : HFS-4P : HFS-2D : HFS-3D : HFS-4D



MODEL HFS-2



MODEL HFS-2P



MODEL HFS-4



MODEL HFS-4P

FEATURES

- **5 - 2150 MHz Performance**
- **Power Passing to One or All Ports**
- **High Port-to-Port Isolation**

The **HFS Series** broadband splitters are an advanced design providing the lowest insertion loss from 5-2150 MHz while maintaining high isolation. The HFS-2 / HFS-4 power pass to one port and the HFS-2P / HFS-4P pass power to all ports.

SATELLITE / BROADBAND SPLITTERS *(DIODE STEERED)*



MODEL HFS-2D



MODEL HFS-3D



MODEL HFS-4D

FEATURES

- **5 - 2150 MHz Wideband Operation**
- **Diode Steered**
- **High Return Loss**
- **Flat Frequency Response**
- **Flat End F-Ports with 1” Spacing**
- **Solder-Back Case** *(-130 dB RFI Shielding)*

Holland Electronics’ **HFS-*D** series high-frequency splitters have been designed with diode steered circuitry, which allows the DC power to pass from any output port to the input port and prevents DC backfeeding.

SATELLITE / BROADBAND SPLITTERS

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	HFS-2/2P		HFS-4/4P		HFS-2D		HFS-3D		HFS-4D	
		TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.	TYP.	QC.
Insertion Loss (dB) (Max)	5 - 40	4.4	4.5	7.8	8.0	4.3	4.5	4.2 / 8.3	4.5 / 8.5	8.2	8.5
	41 - 550	4.3	4.5	7.8	8.0	4.2	4.5	4.5 / 9.2	4.8 / 9.3	9.0	9.3
	551 - 950	4.4	4.7	8.0	8.2	4.3	4.7	4.7 / 9.4	5.0 / 9.5	9.2	9.5
	951 - 1450	4.8	5.0	9.0	9.5	5.2	5.3	5.3 / 10.5	5.5 / 10.8	10.5	10.8
	1451 - 2150	5.0	5.3	10	10.5	5.3	5.5	5.5 / 10.9	5.9 / 11.5	10.9	11.2
Isolation (dB)	15 - 40	20	18	24	23	25	22	24	23	27	25
	41 - 550	23	19	22	21	27	25	23	22	22	21
	551 - 950	23	19	21	20	26	24	23	22	22	21
	951 - 1450	24	20	21	20	22	21	22	21	22	21
	1451 - 2150	24	20	21	20	22	21	22	21	22	20
Input Return Loss (dB) (Min)	15 - 40	11	8	11	8	16	15	16	15	16	15
	41 - 550	11	8	11	8	16	15	16	15	16	15
	551 - 950	11	8	11	8	16	15	16	15	16	15
	951 - 1450	11	8	11	8	16	15	16	15	16	15
	1451 - 2150	11	8	11	8	16	15	16	15	16	15
Output Return Loss (dB) (Min)	15 - 40	11	8	11	8	20	15	16	15	16	15
	41 - 550	11	8	11	8	20	15	16	15	16	15
	551 - 950	11	8	11	8	19	15	16	15	16	15
	951 - 1450	11	8	11	8	18	15	16	15	16	15
	1451 - 2150	11	8	11	8	17	15	16	15	16	15
GENERAL											
Temperature Range	-40° to 60° Celsius										
Port Spacing	1”										
RFI	>130 dB										
Impedance (ohms)	75										

POWER PASSING SPECIFICATIONS	HFS-*/*P	HFS-*D
Voltage (Max.)	35V	35V
Current Rating (Max.)	750 mA	1.0 A

NOTE: All specifications typical unless otherwise noted

HIGH-PERFORMANCE SATELLITE PASSIVES

SPLITTERS - HR S* : HRV S* & TAPS - HR T** : HRV T1** : HR TW*



HR S2



HR S3



HR S4



HR S8



HRV S2



HRV S4



HRV S8



*HR T1***



*HRV T1***



*HR TW**

FEATURES

- **Wideband Operation** *(15 MHz to 2150 MHz)*
- **High Return Loss** *(15 dB @ 2 GHz Typical)*
- **Frequency-Flat Response** *(±0.1 dB in any 24 MHz)*
- **Flat "F" Ports with 1" Spacing**
- **Solder-Back Case** *(130 dB RFI Shielding)*

"3 SIGMA PERFORMANCE"

Holland Electronics' high-performance passives are designed for distribution of digital satellite signals in applications where signal performance is critical. The **HRS** and **HRV S** Series splitters utilize diode directing circuitry to prevent DC back-feeding. The **HRT** Series taps are available in many decibel levels for your specific requirement.

HIGH-PERFORMANCE SATELLITE SPLITTERS

SPECIFICATIONS - HR S* SPLITTERS

PARAMETER	INSERTION LOSS (dB) (MAX) (15 - 950 MHz)	INSERTION LOSS (dB) (MAX) (950 - 2150 MHz)	RETURN LOSS (dB) (MIN) (15 - 950 MHz)	RETURN LOSS (dB) (MIN) (950 - 2150 MHz)
HR S2	4.2	5.4	18	16
HR S2P	4.2	5.4	18	16
HRV S2	4.2	5.4	17	15
HR S3 (unbalanced)	4.6 / 8.4	10.8	17	15
HRV S3 (unbalanced)	4.6 / 8.4	10.8	17	15
HR S4	7.8	9.5	17	15
HRV S4	8.4	10.2	17	15
HRV S6 (unbalanced)	7.8 / 11.5	12.5	17	15
HR S8	13.2	17	17	15
HRV S8	13.2	17	17	15

GENERAL	
Port Spacing	1”
Voltage (Max.)	35V
Current Rating (Max.)	1A

SPECIFICATIONS - HR T* DIRECTIONAL COUPLERS

PARAMETER	INSERTION LOSS (dB) (MAX) (15 - 950 MHz)	INSERTION LOSS (dB) (MAX) (950 - 2150 MHz)	RETURN LOSS (dB) (MIN) (15 - 950 MHz)	RETURN LOSS (dB) (MIN) (950 - 2150 MHz)
HR T106	2.5	3.3	16	17
HR TW6	2.5	3.3	22	22
HRV T106	2.5	3.0	16	17
HR T108	1.9	2.7	17	18
HR TW9	1.9	2.1	18	19
HRV T109	1.8	2.0	18	19
HR T112	1.6	1.9	16	17
HR TW12	1.6	1.9	19	20
HRV T112	1.6	1.9	19	20
HR T116	1.5	1.9	17	18
HR TW16	1.5	1.9	18	20
HRV T116	1.5	1.7	18	20

POWER PASSING SPECIFICATIONS	
Voltage (Max.)	35V
Current Rating (Max.)	1A
DC Passing	DC Passing In/Out, DC Blocking Tap/In

NOTE: All specifications typical unless otherwise noted

SPECIALTY SPLITTERS

MODELS GHS-2P : GHS-3P : GHS-4P



MODEL GHS-2P



MODEL GHS-3P



MODEL GHS-4P

FEATURES

- **1 GHz Operation**
- **Low Intermodulation Distortion**
- **High Voltage / Current Capability**

SPECIALTY DC/AC POWER PASSING TO ONE-PORT SPLITTERS

The **GHS-*P Series** power passing to one-port splitters have been specifically designed to meet the highest electrical specifications. Careful isolation of the RF and DC path is required to prevent saturation / distortion of the ferrite core. This is been accomplished by using a separate DC bypass core, which can withstand higher impulse spikes before saturating than normal splitter cases.

HSU SERIES SPLITTERS

MODELS HSU-2 : HSU-3 : HSU-4 : HSU-8



MODEL HSU-2



MODEL HSU-3



MODEL HSU-4



MODEL HSU-8

FEATURES

- **Wide Frequency Range**
- **Heavy Duty Zinc Diecast Case**
- **Anti-Corrosive Chromate Finish**
- **Precision Machined Threads**
- **DC Power Passing to All Ports**

ECONOMY POWER PASSING CATV SPLITTERS

The **HSU** splitter series are our low cost, using the same quality control standards and materials used in our premium performance lines. The HSU line is used with home or MDU systems in the 5 - 1000 MHz range and passes power between all ports.

POWER PASSING SPLITTERS

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	GHS-2P TYP.	GHS-2P QC.	GHS-3P TYP.	GHS-3P QC.	GHS-4P TYP.	GHS-4P QC.	HSU-2	HSU-3	HSU-4	HSU-8
Insertion Loss (dB) (Max)	5 - 47	3.7	3.8	3.8 / 7.0	3.9 / 7.1	7.1	7.2	4.0	4.0 / 7.5	7.2	10
	48 - 450	3.7	3.8	3.8 / 7.0	3.9 / 7.1	6.9	7.0	3.6	3.7 / 7.3	7.2	11
	451 - 750	3.9	4.0	3.8 / 7.1	3.9 / 7.1	7.1	7.2	3.7	3.8 / 7.8	7.9	12.2
	751 - 1000	4.0	4.1	4.0 / 7.6	4.1 / 7.7	7.6	7.7	4.2	4.0 / 8.2	8.5	13
Isolation (dB)	5 - 47	21	20	22	20	22	20	15	25	16	20
	48 - 450	23	22	26	24	26	24	23	23	20	22
	451 - 750	23	22	25	22	25	23	25	21	17	22
	751 - 1000	21	20	22	20	22	20	23	20	18	20
Input Return Loss (dB)(Min)	5 - 47	22	20	22	20	20	21	15	12	12	18
	48 - 450	24	22	25	23	26	23	21	22	16	20
	451 - 750	24	22	24	22	24	22	21	25	21	20
	751 - 1000	21	20	22	20	22	20	20	20	15	18
Output Return Loss (dB)(Min)	5 - 47	22	21	23	21	23	21	-	-	-	-
	48 - 450	28	25	28	25	28	26	-	-	-	-
	451 - 750	25	23	25	23	25	23	-	-	-	-
	751 - 1000	21	20	23	21	23	21	-	-	-	-

POWER PASSING SPECIFICATIONS	GHS-*P	HSU-*
Voltage (Max)	30V	30V
Current Rating (Max.)	750mA	750mA

NOTE: All specifications typical unless otherwise noted

POWER INSERTERS



MODEL HCDA-PI
F TYPE PI, 1 GHz



MODEL HRF PI
F TYPE PI, 2300 MHz, SINGLE LEG DC



MODEL HRF PIB
F TYPE PI, 2300 MHz, BOTH LEGS DC

SPECIAL CASE 2-WAY SPLITTERS



MODEL GHS-2TL
SIDE PORT INPUT, MINI CASE



MODEL MS-2D
WALL PLATE MOUNT



MODEL GDS-2V
T-TYPE

GHT-*P SERIES HARD-LINE MULTI-TAPS

MODELS GHT2-*P : GHT4-*P : GHT8-*



MODEL GHT2-*P



MODEL GHT4-*P



MODEL GHT8-*P

FEATURES

- **Interchangeable Covers & Circuitry** *(2&4 Port)*
- **Corrosion Resistant 360 Aluminum Case**
- **Neoprene Weather-Sealed Cover**
- **Plastic Component Covers for Additional Protection of Circuitry During Handling**
- **Power Passing**
- **Weather Resistant Baked-On Epoxy Finish**
- **Captive Stainless Steel Hardware**
- **Maximum RFI Integrity**
- **Uninterruptible Power Data Transmission Passes DC & Signal When Faceplate is Removed**
- **Brass, Neoprene Sealed F-Ports**

HARD-LINE MULTI-TAPS

Holland Electronics' hard-line multi-taps provide excellent bi-directional compatibility, low insertion loss, high port-to-port isolation and are power passing. Designed for 30, 60 and 90 VAC systems with a current capacity of up to 15A. The 15 psi weatherproof seal, epoxy finish and neoprene sealed covers provide outstanding environmental protection.

Available in a variety of configurations to suit your application needs.

GHT-*P SERIES HARD-LINE MULTI-TAPS

SPECIFICATIONS

FREQUENCY (MHz)	INSERTION LOSS (dB) (Max.) 5 - 40	41 - 450	451 - 750	751 - 1000	OUT-TAP ISOLATION (dB) (Min.) 5 - 47	48 - 450	451 - 750	751 - 1000
2-PORT TAPS (GHT2-*P) Power Passing								
GHT2-4P	-	-	-	-	-	-	-	-
GHT2-8P	3.6	4.2	5.3	5.7	20	21	20	20
GHT2-11P	1.8	2.0	2.7	3.3	24	27	26	21
GHT2-14P	1.2	1.3	1.6	2.4	26	28	27	21
GHT2-17P	1.1	1.3	1.5	1.9	28	30	30	26
GHT2-20P	0.8	0.8	1.3	1.8	33	34	33	26
GHT2-23P	0.8	0.9	1.3	1.7	33	36	35	29
GHT2-26P	0.8	0.9	1.3	1.7	35	37	36	32
4-PORT TAPS (GHT4-*P) Power Passing								
GHT4-8P (Self Terminating)	-	-	-	-	-	-	-	-
GHT4-11P	3.4	3.9	5.4	5.7	22	25	22	21
GHT4-14P	2.0	2.1	2.7	3.6	24	29	28	23
GHT4-17P	1.3	1.8	2.2	3.0	27	31	29	23
GHT4-20P	1.0	1.3	1.7	2.3	28	32	32	27
GHT4-23P	0.8	1.0	1.2	1.9	32	36	35	27
GHT4-26P	0.8	1.0	1.2	1.9	34	38	37	30
GHT4-29P	1.0	1.1	1.3	1.7	36	40	39	33
GHT4-32P	1.0	1.2	1.3	1.8	35	35	35	35
8-PORT TAPS (GHT8-*P) Power Passing								
GHT8-11P (Self Terminating)	-	-	-	-	-	-	-	-
GHT8-14P	3.6	4.1	5.1	5.4	24	28	24	21
GHT8-17P	1.9	2.1	2.7	3.6	27	30	26	23
GHT8-20P	1.2	1.4	2.0	2.8	30	32	27	24
GHT8-23P	1.0	1.1	1.5	2.2	33	34	30	25
GHT8-26P	0.9	1.0	1.3	1.9	36	38	32	28
GHT8-29P	0.7	1.1	1.3	1.9	40	40	34	30
GHT8-32P	0.7	1.1	1.3	1.9	40	40	34	32

GENERAL	5 - 40 MHz	41 - 450 MHz	451 - 750 MHz	751 - 1000 MHz
Input Return Loss (dB)	17	17	17	17
Output Return Loss (dB)	18	18	17	16
Tap Return Loss (dB)	17	18	19	18

NOTE: Other tap values available upon request

NOTE: All specifications typical unless otherwise noted

GH SERIES HARD-LINE PASSIVES

MODELS GHDC-* : GHLS-* : GHP-1



MODEL GHDC-*



MODEL GHLS-2



MODEL GHLS-3



MODEL GHP-1

FEATURES

- **1 GHz Performance**
- **Fused Outputs for Power Direction**
- **Epoxy-Coated Aluminum Housing**
- **Neoprene Weather Sealing**
- **Tongue & Groove Faceplate**
- **Stainless Steel Mounting Hardware**
- **Directional Coupler Available in 8, 12 and 16 dB**
- **Captive Hardware**

HARD-LINE PASSIVES

Holland Electronics' hard-line passives are high-performance products manufactured since 1989 to the highest quality standards. Designed for 30, 60 and 90 VAC systems with a current capacity of up to 15A, making them ideal for all CATV applications. Our hard-line passives feature high return loss and low insertion loss providing excellent bi-directional compatibility.

GH SERIES HARD-LINE PASSIVES

SPECIFICATIONS

PARAMETER	FREQUENCY RANGE (MHz)	GHDC-8	GHDC-12	GHDC-16	GHLS-2	GHLS-3B	GHLS-3	GHP-1
Tap Loss (dB)	5 - 40	8 ± 1.5	11 ± 1.5	15 ± 1.5	-	-	-	-
	41 - 750	8 ± 1.5	12 ± 1.5	16 ± 1.5	-	-	-	-
	751 - 1000	8 ± 1.5	12 ± 1.5	16 ± 1.5	-	-	-	-
Insertion Loss (dB) (In/Out) (Max)	5 - 15	2.1	1.2	1	4	6.5	4.4 / 7.4	.8
	16 - 40	2.1	1.2	1	4.4	6.3	4.3 / 7.4	.8
	41 -250	2.1	1.2	1.2	4.6	6.3	4.3 / 7.5	.8
	251 - 550	2.1	1.4	1.2	5	6.5	4.3 / 7.5	.8
	551 - 750	2.1	1.4	1.2	5.2	6.8	4.3 / 7.8	.8
	751 - 1000	3	2	1.6	5.5	7.8	5.2 / 8.8	1.2
Isolation (dB) (Out/Tap)	5 - 15	18	20	20	-	-	-	-
	16 - 40	25	28	28	-	-	-	-
	41 - 250	25	28	28	-	-	-	-
	251 - 450	25	28	28	-	-	-	-
	451 - 550	25	28	28	-	-	-	-
	551 - 750	22	22	22	-	-	-	-
	751 - 860	20	20	20	-	-	-	-
	861 - 1000	20	20	20	-	-	-	-
Isolation (dB) (Out/Out)	5 - 15	-	-	-	18	20	20	65
	16 - 40	-	-	-	28	24	28	70
	41 - 250	-	-	-	28	24	28	70
	251 - 550	-	-	-	28	24	28	65
	551 - 750	--	-	-	25	24	25	65
	751 - 1000	-	-	-	22	22	22	60
Return Loss (dB) (All Ports) (Min)	5 - 15	16	16	16	16	16	16	16
	16 - 40	17	17	17	17	17	17	17
	41 - 250	17	17	17	17	17	17	17
	251 - 550	17	17	17	17	17	17	17
	551 - 750	17	17	17	17	17	17	17
	751 - 1000	16	16	16	16	16	16	16
GENERAL								
Impedance (ohm)	75							
Connector (In/Out/Tap)	5/8" - 24 UNEF Female							
Waterproof Condition	15 PSI							
Power Passing	15A 30/60/90 VAC							
Dimensions	120mm L x 100mm W x 70mm H							

NOTE: All specifications typical unless otherwise noted

DIPLEXERS

MODELS STVC : DPD2 : HR D2 : HR D3



MODEL STVC

SATELLITE/TV DIPLEXER

The **STVC** allows the combining or separating of CATV signals with satellite signals to a common cable.

STVC	INSERTION LOSS			REJECTION		
	FREQUENCY	QC LIMIT	TYP	FREQUENCY	QC LIMIT	TYP
VHF/UHF Port	5-806 MHz	1.5 dB	1 dB	950-2150 MHz	30 dB	35 dB
Satellite Port	950-2150 MHz	1.5 dB	1 dB	5-806 MHz	30 dB	35 dB



MODEL DPD2

SATELLITE/TV DIPLEXER: HIGH-PERFORMANCE

The **DPD2** allows the combining (or separating if used in the reverse) of Off-Air / CATV signals with satellite signals to a common cable. Filters harmonics in the off-air spectrum from satellite conversion devices. The **DPD2** diplexer was specifically designed for Dish Network's™ DP44 installations, requiring continuous 2 amp power passing.

DPD2	INSERTION LOSS			REJECTION		
	FREQUENCY	QC LIMIT	TYP	FREQUENCY	QC LIMIT	TYP
VHF/UHF Port	5-806 MHz	1.5 dB	1 dB	950-2150 MHz	40 dB	40-50 dB
Satellite Port	950-2150 MHz	1.5 dB	1 dB	5-806 MHz	40 dB	40-50 dB

"3 SIGMA" HIGH-PERFORMANCE DIPLEXERS

Holland Electronics' "3 Sigma" diplexers are specifically designed to work in MDU applications where high return loss and high isolation are critical for proper satellite system function. The **HR D2** is intended for subscriber satellite drops. The **HR D3's** additional isolation makes it an ideal choice as a trunk-grade diplexer. Solder-back sealed.



MODEL HR D2



MODEL HR D3

- **Wideband Operation** ***(15 MHz - 2150 MHz)***
- **Higher Return Loss** ***(15 dB @ 2 GHz Typical)***
- **Ultra-Flat Response** ***(±0.1 in any 24 MHz)***
- **Flat "F" Ports**

PASSIVES

MODELS HFS-* : HFS-*P : HFS-*D : HR S* : HR T* : HRV T* : HR TW*

HFS SERIES: HIGH FREQUENCY BROADBAND SPLITTERS

* See page 85 for additional details.

The **HFS Series** broadband splitters are an advanced design providing the lowest insertion loss from 5-2150 MHz while maintaining high isolation. The **HFS-2/HFS-4** pass power to one port and the **HFS-2P/HFS-4P** pass power to all ports.



MODEL HFS-2



MODEL HFS-4



MODEL HFS-2P



MODEL HFS-4P

HFS-*D SERIES: HIGH FREQUENCY BROADBAND SPLITTERS

* See page 85 for additional details.

Holland Electronics' **HFS-*D** series high frequency splitters have been designed for residential and commercial applications. The diode-protected circuitry allows the DC power to pass from any output port to the input port and prevents DC backfeeding.



MODEL HFS-2D



MODEL HFS-3D



MODEL HFS-4D

HR S SERIES: DIODE STEERED SATELLITE SPLITTERS

* See page 87 for additional details.

Our **HR S* Series** diode-steered splitters offer 130 RFI shielding. Features include solder-back housing and our patented round-pin design for improved connectivity.



MODEL HR S2



MODEL HR S3



MODEL HR S4



MODEL HR S8

HIGH-PERFORMANCE TAPS

* See page 87 for additional details.

The "3 Sigma" taps were designed for MDU applications where high return loss and high isolation is required.



MODEL HR T*



MODEL HRV T*



MODEL HR TW*

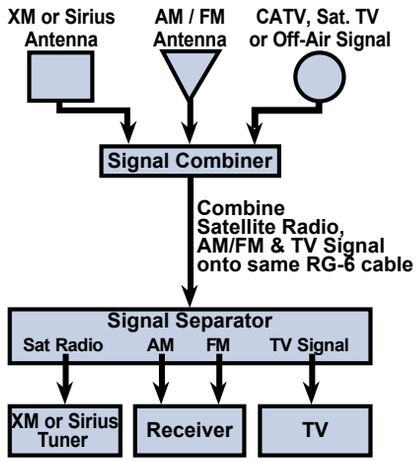
Applicable Patents - reference: S / U / V / W / X - See page 111 for patent details

SATELLITE RADIO ACCESSORIES

MODELS TPLXR : QPLEX : SR-4 : PRO-500 : CMP2000 : J6-940SMB-FF

Bring XM & Sirius Radio indoors!
With XM/SIRIUS' approved accessory product line by Pixel Technologies you can...

- **Allow Satellite Radio to SHARE Exisiting Cable**
- **SPLIT Satellite Radio signals to Multiple Locations**
- **INSTALL using standard shared RG-6 cable & F-connectors**



SATELLITE RADIO PRODUCT OVERVIEW

SIGNAL COMBINER
Combine Audio & Video Signals

P/N: TPLXR
Make installation easy by combining multiple signals onto one RG-6 line.

Combine the following signals:
- XM / SIRIUS Satellite Radio
- AM / FM / HD Radio
- CATV / Sat. TV / Off-Air



SIGNAL SEPARATOR
Separate Signals To Each Receiver

P/N: QPLEX
Separates the signal after being combined through the Signal Combiner, (P/N:TPLXR).

Separate the following signals:
- XM / SIRIUS Satellite Radio
- AM / FM / HD Radio
- CATV / Sat. TV / Off-Air



AMPLIFIED SIGNAL SPLITTER
1 Antenna / 4 Separate Signals

P/N: SR-4
Split one satellite radio signal up to four times from a single satellite radio antenna.

Split up to 32 different signals with help of other Pixel products.



HOME SATELLITE RADIO ANTENNA
Receive XM or Sirius Radio

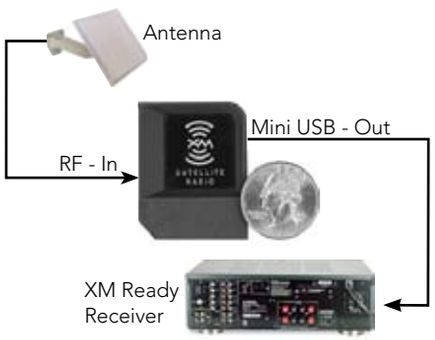
P/N: PRO-500
Professional high gain antenna system

- Receives XM or SIRIUS
- Can drive up to 200 ft. of RG-6 with no external amplification required
- Longer runs are possible with use of SBA-1 high gain amplifier



XM MINI-TUNER & DOCK
For XM-Ready Receivers

P/N: CMP2000
Allows any XM ready receiver to accept signals, eliminating the need to use an additional tuner.



SATELLITE RADIO ADAPTORS

P/N: J6-940SMB-FF
Allows the use of RG-6 cable and F-Connectors by use of a 50 ohm, SMB-F adaptor.



EQUALIZER & POWER INSERTER

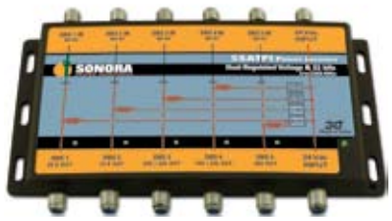
MODELS SEQ509 : 5SATPL



SATELLITE EQUALIZER

Model **SEQ509** is used to reduce the lower Ka signal levels to obtain the maximum undistorted output. Slope compensation in the **SEQ509** creates a positive slope signal for distribution.

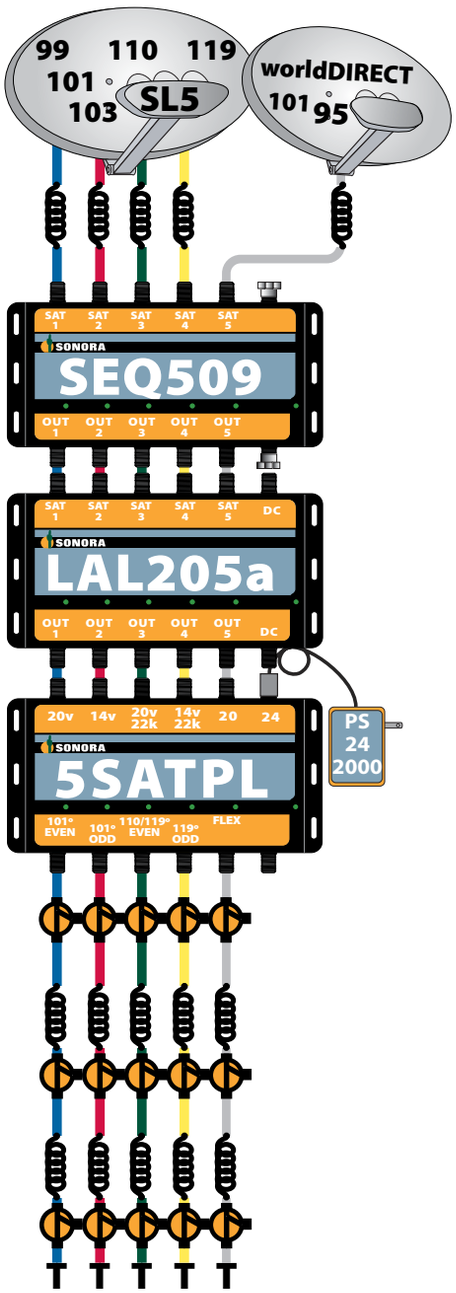
SATELLITE EQUALIZER	TYP.	MIN.
Insertion Loss	12 - 3 dB (54 - 2400 MHz)	13 - 4 dB (54-2400 MHz)
Return Loss	15 dB	12 dB
Inputs / Outputs	5 - 2400 MHz	



POWER INSERTER WITH POLARITY LOCKING CAPABILITY

The **5SATPL** was designed to power DIRECTV™ satellite dishes. Locks the four or five LNB outputs for splitting to multi-switches. Also increases DC line voltage for longer cable runs. Ideal for usage on MDU trunk lines.

POWER INSERTER	TYP.	MIN.
Insertion Loss	15 dB	1 dB
Return Loss	12 dB	10 dB
Input Transformer	24 VDC, 2 Amp	
Inputs / Outputs	250 - 2400 MHz	



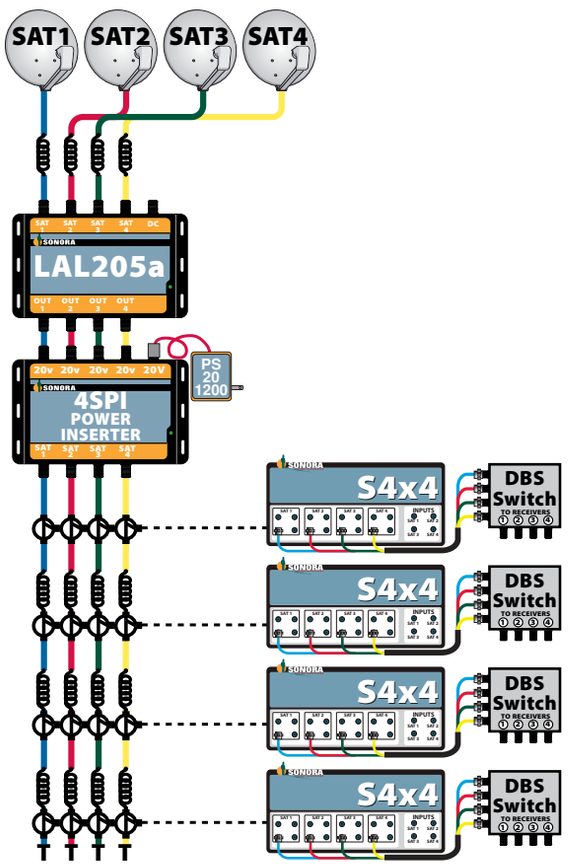
SATELLITE DISTRIBUTION SYSTEMS



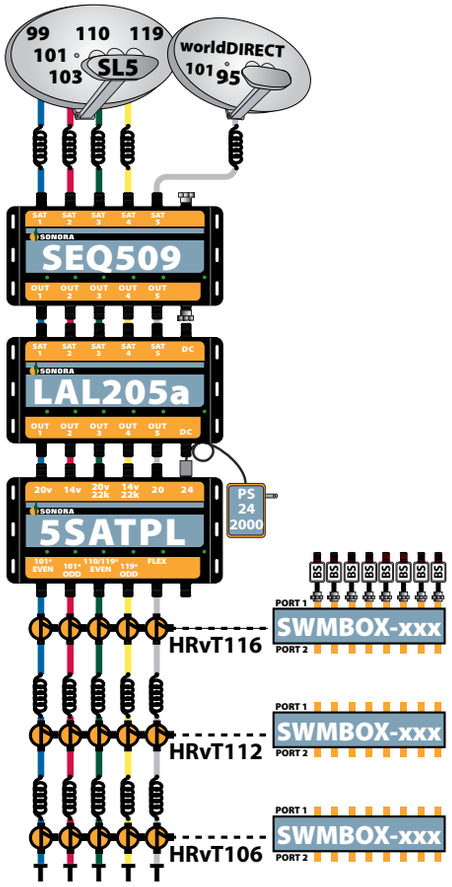
SATELLITE DISTRIBUTION SYSTEMS

- **Designed Primarily for MDU Purposes**
- **Custom Built to Order**
- **Available to support up to 32/64 Tuners**
- **Residential and Commercial use**

DISH NETWORK™ EXAMPLE



DIRECTV™ EXAMPLE



TELEPHONE/DATA ACCESSORIES

MODELS TFW-* : DAM-* : DAF-* : TMS-* : TMP-* : TSM-4 : TMC-*

STATION WIRE

Holland Electronics' telephone station wire is a durable high-grade round (twisted pair), or flat silver satin communications wire.



MODEL TFW-*

MODEL	GAUGE	CONDUCTORS	WIRE TYPE
TFW-428	28	4	Flat
TFW-424	24	4	Round
TFW-624	24	6	Round

DUPLEX ADAPTERS



MODEL	CONDUCTORS
DAM-4	4
DAM-8	8

MODEL DAM-*
1 Male - 2 Female



MODEL	CONDUCTORS
DAF-4	4
DAF-8	8

MODEL DAF-*
All Female

MODULAR COUPLERS/MODULAR PLUGS



MODEL	CONDUCTORS
TMS-4	4
TMS-8	8

MODEL TMS-*



MODEL	CONDUCTORS	CABLE
TMP-4	4	Flat
TMP-8	8	Round

MODEL TMP-*

SURFACE JACK

Made of ABS plastic with 6 micron gold-plated contacts. Available in ivory.



MODEL TSM-4

MODULAR CORD SETS

Flat silver satin wire #28 AWG.



MODEL TMC-*

MODEL	CONDUCTORS	LENGTH
TMC-47	4	7'
TMC-415	4	15'
TMC-425	4	25'
TMC-450	4	50'

DARK SYSTEM METER

MODELS DST-5000 : DSTR-5000



MODEL DST-5000



MODEL DSTR-5000

FEATURES

- **Generates Five Carriers: 20, 55, 950, 1450 and 2150 MHz**
- **Verifies Cable Attenuation**
- **Cable ID Function** *(Using PFT Terminators)*
- **TDR to Detect Cable Length and Distance to Shorts**
- **Stores Up to 50 Locations**
- **Data Downloadable Via RS-232**
- **Rechargeable Li-Ion Battery**
- **Durable Neoprene Case**

HAND HELD TEST METER/ RECEIVER

Holland Electronics' **Dark System Meter** and companion transmitter make it possible to sweep RF distribution systems before CATV / satellite signals are present. This pre-signal testing verifies if connections are correct, if all passives and cables are passing the correct signals, and if not, where an open or short circuit exists. The measured signal attenuation levels for up to 50 separate stations can be stored in memory. A built-in RS-232 port allows the user to download this data from the meter to a remote device at the push of a single button. The Holland Electronics Dark System Meter is also capable of measuring cable length using the built-in TDR function. The cable ID function identifies up to 20 locations using the included PFT terminators.

DARK SYSTEM METER

SPECIFICATIONS

RECEIVER : MODEL DST-5000	
Frequencies (MHz)	20, 55, 950, 1450, 2150
Input Range	-16 dBmV to +23 dBmV
Memory Stations	50
TDR	
TDR Range	300' (Max.) / 15' (Min.)
CABLE ID	
Reads 20 locating terminators and cable shorts.	
PFT terminator kit...20 push-on terminators included	
DISPLAY	
Display Type	64 x 128, B/W Dot Matrix
Display Range	40 dB Total in 2 dB Steps
GENERAL	
Dimensions	104 x 47 x 234 mm
Weight	500g
Battery	Li-ION (Rechargeable)
Operating Time Between Charges	8 hours
Battery Charge Indicator	Low, Charged

TRANSMITTER : MODEL DSTR-5000	
Frequencies (MHz)	20, 55, 950, 1450, 2150
Output Level	23 dBmV (Adj.)
Operating Time Between Charges	10 Hours
DC Power Supply	Included
Battery Charge Indicator LED	Low = Red / Charging = Amber / Charged = Green
Cable Types (50 & 75 ohms)	RG6, RG59, RG11, RG58, Custom Cables
GENERAL	
Dimensions	87 x 40 x 130 mm
Weight	335g
Battery	Li-ION (re-chargeable)
Charging Time	5 hours

* ***Includes chargers, neoprene case and 20 cable ID terminators.***

NOTE: All specifications typical unless otherwise noted

SIGNAL LEVEL METERS

MODEL ST-5128S : ST-4000D

HAND-HELD SIGNAL LEVEL METER

The **ST-5128S** is a full-featured hand-held signal measurement device for all analog channels. The **ST-5128S** performs signal level, channel flatness, video/audio ratio and full-spectrum scans, making it the perfect tool for any installer.



MODEL ST-5128S

- **Signal Level Measurements** ***(Aural and Visual Carriers)***
- **Single Channel Spectrum**
  (Views Channel Flatness, In-band and LSB Levels)
- **All-Channel Sweep / Frequency Spectrum (870 MHz)**
- **Full Bandwidth Operation** ***(CATV: Ch. 2-135, Off-Air: 2-79)***
- **Wide Dynamic Range** ***(-40 dBmV to 60 dBmV)***
- **Direct Channel or Frequency Entry**
  (Programmed Channels or 10 kHz Frequency Selection)

HAND-HELD SIGNAL LEVEL METER

The **ST-4000D** is our hand-held signal level meter that has been fine tuned to handle the basic needs of maintaining RF distribution systems where digital signals need to be read. Its rugged design and protective carrying case make it a perfect choice for everyday use.



MODEL ST-4000D

- **Full Bandwidth Operation**
- **Analog, Digital ATSC, 8VSB Measurement**
- **Wide Dynamic Range** ***(-28 to 55 dBmV)***
- **Signal Level Measurements** ***(Aural and Visual Carriers)***
- **Direct Channel or Frequency Entry**
- **Group Channel Selection**
  (For quick system tests just push a button and read only the stored favorite channels)
- **Protective Leather Case**

SIGNAL LEVEL METERS

SPECIFICATIONS

MODEL ST-5128S	
Input Frequency	46 - 870 MHz
Accuracy	±1.5 dB
Minimum Tuning Increment	10 kHz
I.F. Bandwidth	300 kHz
Input Range	-40 to 60 dBmV
SPECTRUM ANALYZER MODE	
Resolution	100 kHz
Dynamic Range	40 dB
GENERAL	
Dimensions	4.3” x 10” x 2.6”
Weight	2 lbs.
Battery	Ni-MH (Rechargeable)
Operating Time Between Charges	8 hours
Charger	Included
Case	Included

MODEL ST-4000D	
Input Frequency	46 - 870 MHz
Accuracy	±2.5 dB
Minimum Tuning Increment	10 kHz
I.F. Bandwidth	280 kHz
Input Range	-28 to 55 dBmV
GENERAL	
Dimensions	8.4” x 3.7” x 1.8”
Weight	3 lbs. (w/ Charger)
Battery	Ni-MH (Rechargeable)
Charging Time	5 hours
Charger	Included
Case	Included

NOTE: All specifications typical unless otherwise noted

CABLE IDENTIFICATION TEST EQUIPMENT

MODELS SF-95-22 : TSTL-1 : TSTL-3A : TSTL-3A KIT : PFT : PFT-A : PFTK

SATELLITE FINDER

Holland Electronics' satellite finder installs in-line between the receiver and dish for precise satellite alignment. Features audible tone and a 50 dB input range.



MODEL SF-95-22

STANDARD CABLE RINGER

The original cable ringer, **TSTL-1,** has been designed to "tone" cables allowing quick identification. The **TSTL-1** detects DC continuity with an audible tone or indicates DC shorts by lighting the LED. Uses 12V replaceable battery.



MODEL TSTL-1

PREMIUM CABLE RINGER

The **TSTL-3A** is modeled after our popular **TSTL-1**. The **TSTL-3A** incorporates a standard "AAA" battery in addition to a newly designed head unit for more rugged use. The **TSTL-3A** is the must-have tool for quick and easy cable identification.



MODEL TSTL-3A

CABLE RINGER TEST KIT

The **TSTL-3A KIT** comes complete with all the test adapters an installer needs to verify different connector / cable configurations. Can be used with **TSTL-1** or **TSTL-3A** to identify continuity or shorts in cables. Kit includes **TSTL-3A** and adapters for F, BNC, RCA and SMB.



MODEL TSTL-3A KIT

MDU CABLE ID SYSTEM

The **PFT System** allows the MDU installer to identify up to 20 locations or cables by installing coded push-on terminators in an MDU or routing box location and then electronically identify the correct cable at the other end using a Volt/ohm meter (VOM). The **PFT-A** adapter plugs into your VOM. When set on 50k or greater the correct terminator code is displayed as the first 2 digits on your meter.



MODEL PFT



MODEL PFT-A



MODEL PFTK

TOOLS

MODELS CT-21R : CT-FBR : 25-548 : 25-548A : ACT-270 : ACT-483 : HX 596Q : HCT-116 : CST-6 : STMINI596 : CPT-6590 : CPT-7538

COMPRESSION TOOLS

For use with Holland Electronics' compression connectors or similar (21mm closure).
The CT-21R and CT-FBR tools utilize a ratcheting mechanism that insures complete closure.
The 25-548 and 25-548A tools utilize a hinged clamshell design. 25-548A is also adjustable.



MODEL CT-21R
(F Type Connectors)



MODEL CT-FBR
(F, BNC, RCA, Mini & Speaker Connectors)



MODEL 25-548
(F Type - RG-6,59 &11)



MODEL 25-548A
(F Type - RG-6,59 &11 w/ adjustable throw)

HEX CRIMP TOOLS

Holland Electronics offers a variety of hex crimp tools designed for use with different connector sizes and types.



MODEL ACT-270
Mini Coax Connectors (Hex .270)
Aluminum Frame



MODEL ACT-483
Mini Coax Connectors (Hex .213 & .270)
Aluminum Frame



MODEL HX 596Q
RG-59, RG-6, and RG-6 Quad Connectors
(Hex .324 & .360) Steel Frame



MODEL HCT-116
RG-59, RG-6, and RG-11 Connectors
(Hex .324 & .472) Aluminum Frame

COAX CABLE STRIPPERS

Holland Electronics offers a variety of cable strippers which provide industry standard 1/4" x 1/4" strips.
Note: Replacement blades are available for all strip tools.



MODEL CST-6

ADJUSTABLE
Works with RG-59, 6 and Mini-Coax.
Features adjustable strip length and blade height.



MODEL CPT-6590

FIXED BLADE
Works with RG-6 Coax.
Replaceable blade cartridge.



MODEL STMINI596

MULTI-CARTRIDGE
Works with RG-59, 6 and Mini-Coax.
Utilizes replaceable cartridges for specific cable sizes.



MODEL CPT-7538

FIXED BLADE
Works with Mini-Coax.
Replaceable blade cartridge.

INSTALLATION TOOLS & DRILL BITS

MODELS CGT-FBR : CIT-1 : GTT-4 : GTT-7 : ST-1 : PPLT-T : DRB 3/8M : DRB 3/8W

CONNECTOR GUIDE & INSTALLATION TOOL (PATENTED)

This tool is a unique multi-function device. One side holds an F-connector and has a spring-loaded cable center conductor/dielectric guide function which ensures proper alignment and termination of cable into the F-connector. Excellent for use in cold weather when installers typically wear gloves. The other side holds RCA and BNC connectors for easier handling while terminating to the cable.



MODEL CGT-FBR

CONNECTOR INSTALLATION TOOL (PATENTED)

The **CIT-1 Connector Installation Tool** is used to install and remove F-connectors in high density and hard-to-reach locations and is the only tool that works with bent coax. Provides enough leverage to achieve a 30 in./lb. tightening force by hand and for removing cables that have lateral torque on the connectors. Helps insure proper connections, thereby reducing the potential of loose-connector-related service calls.



MODEL CIT-1

LOCKING TERMINATOR TOOLS



MODEL GTT-4

For use with GTP-59 style locking terminators. Works with Holland Electronics' GLT 4" - length.



MODEL GTT-7

For use with GTP-59 style locking terminators. Works with Holland Electronics' GLT - 7" length.



MODEL ST-1

For use with CATV security sleeves.



MODEL PPLT-T

For use with Holland Electronics' PPLT Series locking terminators.

DRILL BITS

Holland Electronics offers precision-machined masonry and wood drill bits made of quality steel. All masonry bits are designed with high quality carbide tips, and all wood bits have precision machined flutes and tips for great performance. A cable fishing hole is provided toward the end of the bit to conveniently pull cable.

MASONRY



***DRB 3/8M** (3/8" Diameter X 18" Long)*

WOOD



***DRB 3/8W** (3/8" Diameter X 18" Long)*

Applicable Patents - reference: K - See page 111 for patent details

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REGISTERED PATENTS

The following patents are listed with the United States Patent Office and serve as formal notification of protection.

PATENT REFERENCE	U.S. PATENT NUMBER	ISSUE DATE
A	7,500,868	March 10, 2009
B	7,364,462	April 29, 2008
C	7,293,357	November 13, 2007
D	7,566,831	November 6, 2007
E	7,264,502	September 4, 2007
F	7,252,546	August 7, 2007
G	7,112,093	November 26, 2006
H	7,008,263	March 7, 2006
I	6,929,265	August 16,2005
J	6,929,508	November 16, 2004
K	6,817,272	November 16, 2004
L	6,618,945	September 16, 2003
M	6,578,202	June 10, 2003
N	6,536,103	March 25, 2003
O	6,493,929	December 17, 2002
P	6,425,782	July 30, 2002
Q	6,415,499	July 9, 2002
R	6,361,364	March 26, 2002
S	6,276,970	August 21, 2001
T	6,217,383	April 17, 2001
U	6,113,431	September 5, 2000
V	5,863,226	January 26, 1999
W	5,667,409	September 16, 1997
X	5,498,175	March 12, 1996
Y	5,106,312	June 27, 1991

FREQUENCY ALLOCATION CHART

VHF & CATV CHANNELS		
Band	Alpha/ Numeric	Sca Visual Carrier Freq.
SUB	T-7	7
SUB	T-8	13
SUB	T-9	19
SUB	T-10	25
SUB	T-11	31
SUB	T-12	37
SUB	T-13	43
SUB	T-14	49
LOW	2 / 2	55.25
LOW	3 / 3	61.25
LOW	4 / 4	67.25
LOW	5 / 5	77.25
LOW	6 / 6	83.25
MID	A-5 / 95	91.25
MID	A-4 / 96	97.25
MID	A-3 / 97	103.25
MID	A-2 / 98*	109.25
MID	A-1 / 99*	115.25
MID	A / 14*	121.25
MID	B / 15*	127.25
MID	C / 16*	133.25
MID	D / 17	139.25
MID	E / 18	145.25
MID	F / 19	151.25
MID	G / 20	157.25
MID	H / 21	163.25
MID	I / 22	169.25
HIGH	7 / 7	175.25
HIGH	8 / 8	181.25
HIGH	9 / 9	187.25
HIGH	10 / 10	193.25
HIGH	11 / 11	199.25
HIGH	12 / 12	205.25
HIGH	13 / 13	211.25
SUPER	J / 23	217.25
SUPER	K / 24*	223.25
SUPER	L / 25*	229.25
SUPER	M / 26*	235.25
SUPER	N / 27*	241.25
SUPER	O / 28*	247.25
SUPER	P / 29*	253.25
SUPER	Q / 30*	259.25
SUPER	R / 31*	265.25
SUPER	S / 32*	271.25
SUPER	T / 33*	277.25
SUPER	U / 34*	283.25
SUPER	V / 35*	289.25
SUPER	W / 36*	295.25
HYPER	AA / 37*	301.25
HYPER	BB / 38*	307.25
HYPER	CC / 39*	313.25
HYPER	DD / 40*	319.25
HYPER	EE / 41*	325.25
HYPER	FF / 42*	331.25
HYPER	GG / 43*	337.25
HYPER	HH / 44*	343.25
HYPER	II / 45*	349.25
HYPER	JJ / 46*	355.25
HYPER	KK / 47*	361.25
HYPER	LL / 48*	367.25
HYPER	MM / 49*	373.25
HYPER	NN / 50*	379.25
HYPER	OO / 51*	385.25
HYPER	PP / 52*	391.25

VHF & CATV CHANNELS		
Band	Alpha/ Numeric	Sca Visual Carrier Freq.
HYPER	QQ / 53*	397.25
HYPER	RR / 54	403.25
HYPER	SS / 55	409.25
HYPER	TT / 56	415.25
HYPER	UU/ 57	421.25
HYPER	VV / 58	427.25
HYPER	WW / 59	433.25
HYPER	XX / 60	439.25
HYPER	YY / 61	445.25
HYPER	ZZ / 62	451.25
ULTRA	AAA / 63	457.25
ULTRA	BBB / 64	463.25
ULTRA	CCC / 65	469.25
ULTRA	DDD / 66	475.25
ULTRA	EEE / 67	481.25
ULTRA	FFF / 68	487.25
ULTRA	GGG / 69	493.25
ULTRA	HHH / 70	499.25
ULTRA	III / 71	505.25
ULTRA	JJJ / 72	511.25
ULTRA	KKK / 73	517.25
ULTRA	LLL / 74	523.25
ULTRA	MMM / 75	529.25
ULTRA	NNN / 76	535.25
ULTRA	OOO / 77	541.25
ULTRA	PPP / 78	547.25
ULTRA	QQQ / 79	553.25
ULTRA	RRR / 80	559.25
ULTRA	SSS / 81	565.25
ULTRA	TTT / 82	571.25
ULTRA	UUU / 83	577.25
ULTRA	VVV / 84	583.25
ULTRA	WWW / 85	589.25
ULTRA	XXX / 86	595.25
ULTRA	87	601.25
ULTRA	88	607.25
ULTRA	89	613.25
ULTRA	90	619.25
ULTRA	91	625.25
ULTRA	92	631.25
ULTRA	93	637.25
ULTRA	94	643.25
ULTRA	100	649.25
ULTRA	101	655.25
ULTRA	102	661.25
ULTRA	103	667.25
ULTRA	104	673.25
ULTRA	105	679.25
ULTRA	106	685.25
ULTRA	107	691.25
ULTRA	108	697.25
ULTRA	109	703.25
ULTRA	110	709.25
ULTRA	111	715.25
ULTRA	112	721.25
ULTRA	113	727.25
ULTRA	114	733.25
ULTRA	115	739.25
ULTRA	116	745.25
ULTRA	117	751.25

UHF BROADCAST CHANNELS			
Channel #	Visual Carrier Freq.	Channel #	Visual Carrier Freq.
14	471.25	42	639.25
15	477.25	43	645.25
16	483.25	44	651.25
17	489.25	45	657.25
18	495.25	46	663.25
19	501.25	47	669.25
20	501.25	48	675.25
21	513.25	49	681.25
22	519.25	50	687.25
23	525.25	51	693.25
24	531.25	52	699.25
25	537.25	53	795.25
26	543.25	54	711.25
27	549.25	55	717.25
28	555.25	56	723.25
29	561.25	57	729.25
30	567.25	58	735.25
31	573.25	59	741.25
32	579.25	60	747.25
33	585.25	61	753.25
34	591.25	62	759.25
35	597.25	63	765.25
36	603.25	64	771.25
37	609.25	65	777.25
38	615.25	66	783.25
39	621.25	67	789.25
40	627.25	68	795.25
41	633.25	69	801.25

Maximum Attenuation (dB/100 Ft @ 68 Deg F)						
Frequency	RG-59	RG-6	RG-11	.500	.625	.750
5	.77	.57	.36	.16	.13	.11
55	1.88	1.50	.95	.55	.45	.37
211	3.59	2.87	1.81	1.08	.89	.73
250	3.89	3.12	1.98	1.19	.98	.81
270	4.05	3.24	2.06	1.24	1.02	.84
300	4.27	3.43	2.17	1.31	1.08	.89
330	4.50	3.61	2.29	1.38	1.14	.94
350	4.64	3.72	2.36	1.43	1.18	.97
400	4.88	4.00	2.53	1.53	1.27	1.05
450	5.30	4.28	2.69	1.63	1.35	1.12
500	5.50	4.51	2.85	1.73	1.43	1.18
550	5.90	4.76	3.01	1.82	1.51	1.25
600	6.18	4.98	3.16	1.91	1.58	1.31
750	6.96	5.62	3.58	2.16	1.79	1.48
870	7.54	6.09	3.90	2.35	1.95	1.61
950	7.90	6.39	4.10	2.49	2.04	1.72
1000	8.09	6.54	4.23	2.53	2.11	1.74
1200	8.91	7.18	4.71	2.83	2.32	1.96
1450	9.82	7.89	5.29	3.12	2.61	2.16
1750	10.92	8.74	5.95	3.47	2.92	2.41
1850	11.23	8.99	6.12	3.60	2.97	2.52
2000	11.67	9.34	6.36	3.76	3.12	2.64
2150	12.10	9.69	6.60	3.92	3.24	2.75

WARRANTY INFORMATION:

Holland Electronics offers a 90 day warranty on all products with the following exceptions; 1 year warranty on all meters and distribution amplifiers, 5 year warranty on all head-end products.


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VENTURA, CA 93003
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(805) 339-9060 - LOCAL
(805) 339-0230 - FAX
HEAD-END ORDER
SHIP TO:
PRODUCT CODE:
MOR-71
HMMS-2
HMMS-3
HMMS-4
HMMS-5
HMMS-6
HMMS-7
HMMS-8
IN/OUT
HOLLAND
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DPD2
5-2150 MHz
DC PASS
28 VDC 2A Max
SAT
VHF/UHF
Forward Gain ADJ.
RF INPUT/
DC PWR OUT
HOLLAND
Electronics LLC
6 kV Surge
Protected
MODEL HCDA-1FRA-AG
CATV 1-Port Drop Amplifier
54-1000 MHz Forward / 5-42 MHz Active Reverse
Return Gain ADJ.
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