



## DISTRIBUTION AMPLIFIERS

Reliable, Flexible & Cost Efficient  
for various installations

Simply more  
- more simply



# HEF SERIES



## HEF amplifiers – Reliable, flexible and cost-efficient for big multi-dwelling houses

- ROB – “Return Path on Board” without any external modules or pads means more flexibility and lower efforts in installation and logistics
- Jumper matrixes to switch the fix elements for attenuation / equalization and to select return path or VHF I operation increase the reliability and reduce the logistics
- High gain at the return path meets also special requirements in multimedia networks
- Excellent electrical performance for low cost and low power consumption
- For SMATV HEF 845 without return path and with spin potentiometers instead of jumper matrixes

TYPE PART NO.		HEF 845 323068	HEF 845 C 323071	HEF 845 CL 323074
Frequency range				
selected: VHF I “on”, RP “off”	MHz	40-862	40-862	40-862
selected: VHF I “off”, RP “on”	MHz		5-65/85-862	5-65/85-862
Gain forward				
Gain @ 862 MHz	dB	36	36	36
Attenuator at input (2 dB steps)	dB	0-20 (pot)	0-16	0-16
Attenuator elements interstage	dB	0/6	0/6	0/6
Gain return path				
Gain @ 60 MHz	dB		-1.5/27	-1.5/27
Attenuator elements at input	dB		0/2/4/6/50	0/2/4/6/50
Attenuator elements at output	dB		0/3/6/9	0/3/6/9
Amplitude response forward				
40...862 MHz (VHF I: on)	dB		1.5	1.5
Line equalizer at input	dB	0-18 (pot)		
Line equalizer (2...3 dB steps)	dB		0-16	0-16
Slope interstage	dB	0/7	0/7	0/7
Amplitude response return path 5...60 MHz	dB		1.5	1.5
Equalizer element interstage	dB		0/3/6	0/3/6
Random noise				
Forward (VHF I „on“)	dB	5.0	5.5	5.5
Return path (VHF I „off“)	dB		6.0	6.0
Return loss @ 40 MHz, -1.5 dB/octave	dB	> 14	> 14	> 14
Output level forward				
IMR2/ IMR3 ≥ 60 dB	dBμV	114/123	114/123	114/123
CSO ≥ 60 dB, 42 ch. Slope 0/7 dB	dBμV	109/111	109/111	109/108
CTB ≥ 60 dB, 42 ch. Slope 0/7 dB	dBμV	108/110	108/110	111/110
Output level return path				
IMR2/ IMR3 ≥ 60 dB	dBμV		104/115	104/115
RF connectors (75 Ohm)				
Input		F-female	F-female	F-female
Output		F-female	F-female	F-female
Test point input: bi-directional	dB		-20	-20
Test point output: directional	dB	-20 (bi-dir)	-20	-20
Operating conditions				
Max. RF level (EMC)	dBμV	113	113	113
Supply voltage	V	180-253	180-253	25-65
Power consumption	W	6.5	9	9
Operating temperature	°C	-25...+55	-25...+55	-25...+55
Protection class		II, Protective	II, Protective	II, Protective
Housing protection degree	IP	65	65	65
Dimensions W x H x D	mm	190 x 110 x 80	190 x 110 x 80	190 x 110 x 80
Weight	kg	2	2	2
Packing unit		1 pcs. carton box	1 pcs. carton box	1 pcs. carton box
Reference standards				
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2		
RoHS 2002/95/EG compliant		Yes		

# IFE SERIES



## Reliable, flexible and cost-efficient for small and middle sized buildings

- ROB – “Return Path on Board” without any external modules or pads means more flexibility and lower efforts in installation and logistics
- High gain at the return path meets also special requirements in multimedia networks
- C-Type: with jumper matrixes to switch the fix elements for attenuation / equalization and to select return path or VHF I operation increase the reliability and reduce the logistics
- Excellent electrical performance for low cost and low power consumption

TYPE PART NO.		IFE 820 A 323010	IFE 830 A 323016	IFE 834 C 323037
Frequency range				
selected: VHF I “on”, RP “off”	MHz			40-862
selected: VHF I “off”, RP “on”	MHz	5-65/85-862	5-65/85-862	5-65/87-862
Gain forward				
Gain @ 862 MHz	dB	21	30	34
Attenuator at input (2 dB steps)	dB	0-20	0-20	0-16
Attenuator elements interstage	dB			
Gain return path				
Gain @ 60 MHz	dB	-1.5/18	-1.5/25	26
Attenuator elements at input	dB			0/3/6/9/50
Attenuator elements at output	dB			0/10
Amplitude response forward				
40...862 MHz (VHF I: on)	dB	1.5	1.5	1.5
Fix slope	dB	+ 1 dB	+ 1 dB	+ 1 dB
Line equalizer at input	dB	0-16	0-18	
Line equalizer (2-3 dB steps)	dB			0-16
Slope interstage	dB			0/7
Amplitude response return path 5-60 MHz	dB	1.5	1.5	1.5
Equalizer element interstage	dB			
Random noise				
Forward (VHF I „on“)	dB	5.5	5.5	6.0
Return path (VHF I „off“)	dB	6.0	6.0	6.0
Return loss @ 40 MHz, -1.5 dB/octave	dB	> 14	> 14	> 14
Output level forward				
IMR2/ IMR3 ≥ 60 dB	dBμV	100/113	105/115	112/118
CSO/CTB ≥ 60 dB, 42 ch, flat	dBμV	97/100	101/100	104/103
CSO/CTB ≥ 60 dB, 42 ch. Slope 0/7 dB	dBμV	99/101	103/102	106/105
Output level return path				
IMR2/ IMR3 ≥ 60 dB	dBμV	102/113	102/113	102/113
RF connectors (75 Ohm)				
Input		F-female	F-female	F-female
Output		F-female	F-female	F-female
Test point input: bi-directional	dB			
Test point output: directional	dB			
Operating conditions				
Max. RF level (EMC)	dBμV	110	110	110
Supply voltage	V	230 / ±10%	230 / ±10%	230 / ±10%
Power consumption	W	4.5	6	7.5
Operating temperature	°C	-25...+55	-25...+55	-25...+55
Protection class		II	II	II
Degree of protection	IP	20	20	20
Dimensions W x H x D	mm	150 x 80 x 50	150 x 80 x 50	150 x 80 x 50
Weight	kg	0.64	0.64	0.68
Packing unit		1 pcs. carton box	1 pcs. carton box	1 pcs. carton box
Reference standards				
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2		
RoHS 2002/95/EG compliant		Yes		

# IFE SERIES



## IFE amplifiers – for SMATV applications

- Excellent electrical performance for low cost and low power consumption
- Simple initiation because of reduced controller elements
- Q-types: apartment amplifiers with 4 outputs for simple home installations

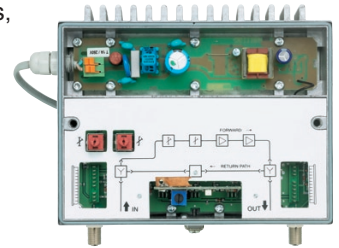
TYPE PART NO.		IFE 20 323022	IFE 30 323025	IFE 16 Q 323031
Frequency range	MHz	40-862	40-862	40-862
Basic unit without RP modules selected: VHF I "on", RP "off"	MHz	(1000 MHz)	(1000 MHz)	(1000 MHz)
selected: VHF I "off", RP "on"	MHz			
Gain forward				
Gain @ 862 MHz out 1	dB	21	29	16
Gain @ 862 MHz out 2-3-4	dB			17
Attenuator at input	dB	0-20	0-20	0-20
Gain return path				
Gain @ 60 MHz	dB			
Attenuator elements at input	dB			
Attenuator elements at output	dB			
Amplitude response forward				
40-862 MHz (VHF I: on)	dB	1.5	1.5	1.5
Fix slope	dB	+ 1	+ 1	+ 1
Line equalizer at input	dB			
Line equalizer (2-3 dB steps)	dB			
Slope interstage	dB			
Amplitude response return path 5-60 MHz	dB			
Equalizer element interstage	dB			
Random noise				
Noise figure	dB	4.5	4.5	4.5
Forward (VHF I „on“)	dB			
Return loss @ 40 MHz, -1.5 dB/octave	dB	> 14	> 14	> 14
Output level forward				
IMR2/ IMR3 ≥ 60 dB	dBμV	100/113	105/113	92/103
CSO/CTB ≥ 60 dB, 42 ch. flat	dBμV	95/98	100/100	90/90
Output level return path				
IMR2/ IMR3 ≥ 60 dB	dBμV			
RF connectors (75 Ohm)				
Input		F-female	F-female	F-female
Output		F-female	F-female	F-female
Test point input: bi-directional	dB			
Test point output: directional	dB			
Operating conditions				
Max. RF level (EMC)	dBμV	105	105	105
Supply voltage	V	230 / ±10%	230 / ±10%	230 / ±10%
Power consumption	W	3	5	5
Operating temperature	°C	-25...+55	-25...+55	-25...+55
Protection class		II	II	II
Degree of protection	IP	20	20	20
Dimensions W x H x D	mm	150 x 80 x 50	150 x 80 x 50	150 x 80 x 50
Weight	kg	0.65	0.65	0.65
Packing unit		1 pcs. carton box	1 pcs. carton box	1 pcs. carton box
Reference standards				
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2		
RoHS 2002/95/EG compliant		Yes		

# HFA SERIES - MAINS POWERED



## Powerful, reliable and easy to install HFA distribution amplifiers

With the HFA series of broadband distribution amplifiers, both the installer and the network operator obtain all the benefits of a quality product: Reliability and a long lifetime, quick installation, effective shielding and the option to use the network for all conceivable interactive services.

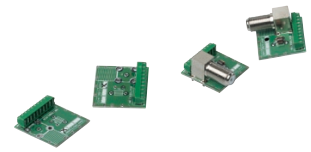
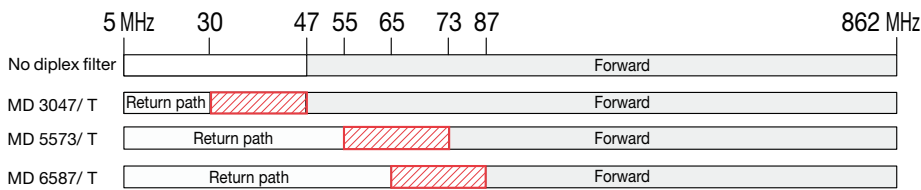


### HFA 60x amplifier

TYPE PART NO.		HFA 602 324602	HFA 603 324603	HFA 604 324604
<b>Forward path</b>				
Frequency range (depending on module)	MHz	47/73/87-862	47/73/87-862	47/73/87-862
Gain adjustable	dB	22	30	40
Attenuation	dB	0 - 20	0 - 20	0 - 20
Noise figure	dB	< 8.5 (typical 7.5)	< 7.5 (typical 6.5)	< 7.0 (typical 6.0)
Linearity	dB	± 1.0	± 1.0	± 1.0
Equalization	dB	0 - 18	0 - 18	0 - 18
Output level				
60 dB 3 order (DIN 45004B)	dBμV	118	118	118
60 dB 2 order (DIN 45004A1)	dBμV	112	112	112
60 dB CTB <sup>1)</sup>	dBμV	101	101	101
60 dB CSO <sup>1)</sup>	dBμV	101	101	101
Return loss input (-1.5 dB/octave)	dB	>14 @ 40 MHz (min. 10)	>14 @ 40 MHz (min. 10)	>14 @ 40 MHz (min. 10)
Return loss output (-1.5 dB/octave)	dB	>14 @ 40 MHz (min. 10)	>14 @ 40 MHz (min. 10)	>14 @ 40 MHz (min. 10)
<b>Return path</b>				
Frequency range (depending on module)	MHz	5-30, 5-55 or 5-65	5-30, 5-55 or 5-65	5-30, 5-55 or 5-65
Gain (adjustable)	dB	passive -1.0 active 17.0	passive -1.0 active 17.0	passive -1.0 active 17.0
Linearity	dB	± 1.0	± 1.0	± 1.0
Return loss input (-1.5 dB/octave)	dB	> 14 @ 5 MHz to 65 MHz	> 14 @ 5 MHz to 65 MHz	> 14 @ 5 MHz to 65 MHz
Return loss output (-1.5 dB/octave)	dB	> 14 @ 5 MHz to 65 MHz	> 14 @ 5 MHz to 65 MHz	> 14 @ 5 MHz to 65 MHz
<b>General</b>				
Power supply type		Mains powered	Mains powered	Mains powered
Power supply	V/AC	230 ± 10%	230 ± 10%	230 ± 10%
Power consumption	W	7.5	7.5	7.5
Shielding efficiency VHF	dB	100	100	100
Shielding efficiency UHF	dB	90	90	90
Housing - protection class		IP65	IP65	IP65
Connectors		F-connectors	F-connectors	F-connectors
Certification		CE	CE	CE
Impedance	Ohm	75	75	75
Operation temperature range	°C	0...+55	0...+55	0...+55
Weight	kg	1.325	1.325	1.325
Dimensions (h x d x w)	mm	145 x 70 x 170	145 x 70 x 170	145 x 70 x 170

1) DIN/EN 50083 Part 3 CTBA (Composite triple beat ratio) @ 60 dB IMD, CENELEC-raster 42 channels

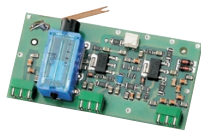
# ACCESSORIES FOR HFA AMPLIFIERS



MD diplex modules

## MD DIPLEX FILTER MODULES

TYPE PART NO.		MD 3047 324681	MD 3047T 324682	MD 6587 324683	MD 6587T 324684
Frequency range (return path)	MHz	5 - 30	5 - 30	5 - 65	5 - 65
Frequency range (forward path)	MHz	47 - 862	47 - 862	87 - 862	87 - 862
Test point	dB	-	- 20	-	- 20
Packing size	pcs.	2	2	2	2



## MA 617 RETURN-PATH AMPLIFIER

TYPE PART NO.		MA 617 324617
Frequency range	MHz	5 - 65
Gain	MHz	17
Attenuation	dB	20
Packing size	pcs.	1



## LINE POWER SUPPLY

TYPE PART NO.		TRP 416014
Power supply input	V/AC	230 ± 10%
Power supply output	V/AC	48
Max. current	A	1.25
Dimensions (height x diameter)	mm	60 x 100



## POWER INSERTER WITH F-CON

TYPE PART NO.		TPI - 01 347001
Frequency range	MHz	5 - 2400
Through loss	5-862 MHz	dB ≥ 0.5
	1000-2150 MHz	dB ≥ 1.5
Max. current	A	2.5
Power	V/AC	65



## ADAPTOR FOR HXX AMPLIFIERS

TYPE PART NO.		PG11 - FF 153580
Dimension	mm	HEX 20 x 72.5
Weight	kg	0.046

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\*Triax reserves the right to change the specifications without prior notification