



BHA-100*-R

Apartment House Amplifier

Features

Operational gain of 34 dB

1003 MHz forward bandwidth

Three frequency splits available through built-in diplex filters

S (40 to 52 MHz)

K (42 to 54 MHz)

A (65 to 85 MHz)

Active return path with 21 dB of gain

External directional coupler test points

Modular plug-ins for easy setup and inventory control

Mains-powered, 90–240 V, auto-ranging switching power supply

US-style NEMA 5-15P, 3-foot power cord (depending on model)

A cost-effective solution for extending HFC networks into high-density locations

The Motorola BHA-100* Broadband House Amplifier is designed for HFC network installations in apartment buildings, condominiums, and any multiple-dwelling housing units. This high-gain indoor distribution amplifier is available with a bandwidth of up to 1003 MHz, and includes a power-doubled output amplification stage for improved system performance.

The single-output amplifier features variable gain and slope controls, as well as attenuator and equalizer facilities for greater flexibility when adjusting the amplifier. Both input and output ports are standard 5/8-24 entry ports for added flexibility. The BHA-100* ships standard with built-in diplex filters at its input and output. It includes an active return path for use in today's advanced networks.

The mains-powered BHA series features a built-in auto-ranging switching power supply. The power supply can accept input voltages from 90 to 240 V at frequencies of 50 or 60 Hz without adjustment. The amplifier is designed to be wall-mounted; however, external mounting brackets are included in the housing design for ease of installation.



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Specifications

FORWARD PATH

Passband	
S ¹	52 to 1003 MHz
K	54 to 1003 MHz
A	65 to 1003 MHz
Flatness ²	± 0.75 dB
Minimum Full Gain ³	34 dB
Manual Gain Control Range	0 to 10 dB
Manual Slope Control Range	0 to 8 dB
Noise Figure ⁴	13
Reference Frequency ⁵	1003, 550, 52 MHz
Output Level	44.5, 44, 37 dBmV
Channel Loading	77 (NTSC)
Compressed Data Loading	450 MHz
Distortion (max)	
CTB ^{6,9}	68 dBc
XM ^{7,9}	65 dB
CSO ^{6,8,9}	66 dBc

RETURN PATH

Passband	
S	5 to 40
K	5 to 42
A	5 to 65
Flatness ²	± 0.75 dB
Minimum Full Gain ³	21 dB
Noise Figure ⁴	6
Reference Frequency ⁵	40 MHz
Output Level	41 FLAT dBmV
Channel Loading	4 (NTSC)
Distortion (max)	
XM ^{7,9}	74 dB
STB ⁶	82 dBc
SSO ⁶	77 dBc

NOISE

Test Point (all)	20 ±1.5 dB
Return Loss (min)	14 dB
Hum Modulation	60 dBc

POWER

DC Voltage	24.0 ± 0.5 VDC
Power Consumption	24 W
AC Input Voltage Range	90 to 240 VAC, 50 to 60 Hz
AC Current Draw	.45 A

PHYSICAL

Housing Dimensions	10.0 in x 7.25 in x 2.75 in (25.4 cm x 18.3 cm x 6.9 cm)
Weight	4.4 lb (2.0 kg)
Ambient Operating Temperature	-4 °F to 131 °F (-20 °C to 55 °C)

- Operating passband of station. Diplex filters are hard-wired into the electronic chassis.
- Peak-to-valley measurement for stated passband. Highest to lowest point on response curve.
- Minimum full gain at 1003, includes loss of equalizer. Return gain includes loss of Jumper.
- Noise figure is specified at the cable entry facility of the BHA and includes the loss of 1 dB for the pre-stage equalizer. The 40 MHz return noise figure includes the station loss preceding the RF hybrid.
- Frequencies that relate the picture carriers or passband edges to the specified output levels and tilts.
- Measured with CW carriers and spectrum analyzer. References the worst-case channel. Specifications are compliant with the test methods as stated in NCTA recommended practices for measurements on cable television systems.
- Measured with wave analyzer and synchronous, 100% depth-modulated channels. References the worst-case channel. Specifications are compliant with the test methods as stated in NCTA recommended practices for measurements on cable television systems.
- Composite Second Order (CSO) distortion refers only to those beat clusters that fall 0.75 MHz and 1.25 MHz above the subject picture carrier. CSO beat clusters that have a -0.75 MHz and -1.25 MHz relationship to the subject picture carrier are not included in this specification.
- Distortion numbers are worst-case over temperature in a cascade.

SPECIFICATION SHEET

BHA-100*-R
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Ordering Information

Model	Description	Part Number
BHA-100K/P/US/RA/F-R	1003 MHz Power-Doubled Apartment House Amplifier with US-style line cord, RA kit, and F-connectors on input/output ports installed. 5 to 42 MHz return and 54 to 1003 MHz forward.	536507-001-00
BHA-100K/P/RA-R	1003 MHz Power-Doubled Apartment House Amplifier with RA kit installed. 5 to 42 MHz return and 54 to 1003 MHz forward.	536507-002-00
BHA-100K/P/US/RA-R	1003 MHz Power-Doubled Apartment House Amplifier with US-style line cord and RA kit installed. 5 to 42 MHz return and 54 to 1003 MHz forward.	536507-003-00
BHA-100S/P/US/RA-R	1003 MHz Power-Doubled Apartment House Amplifier with US-style line cord and RA kit installed. 5 to 40 MHz return and 52 to 1003 MHz forward.	536507-004-00
BHA-100A/P/RA-R	1003 MHz Power-Doubled Apartment House Amplifier with RA kit installed. 5 to 65 MHz return and 85 to 1003 MHz forward.	536507-005-00
Accessories		
SFE-100-*-R	Starline Forward 870 MHz equalizer (values 2 to 22 dB in 1 dB steps)	531124-XXX-XX
SRE-*-*-R	Starline Return Equalize., 5 to 40 MHz (S-split), 5 to 42 MHz (K-split), 5 to 55 MHz (J-split), 5 to 65 MHz (A-split), 5 to 30 MHz (E-split). Values 0 to 12 dB in 1 dB steps for S-split (2 dB steps for all other frequency splits).	531163-XXX-XX
JXP-*-B-R	Plug-in attenuator/pad (values 0 to 26 dB, in 1 dB steps)	531186-XXX-XX (3 required)



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Motorola, Inc. 101 Tournament Drive, Horsham, Pennsylvania 19044 U.S.A. www.motorola.com

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