

Compact Electronic Gain Control (EGC) Mini Amplifier Model 93230

Description

The Compact Electronic Gain Control (EGC) Mini Amplifier Model 93230 combines powerful performance with ease of use to meet the growing demands from operators for advanced products. It provides advanced features and benefits to help operators reduce operating costs by streamlining amplifier deployment and configuration and is especially well suited for network upgrades due to increased reverse gain.

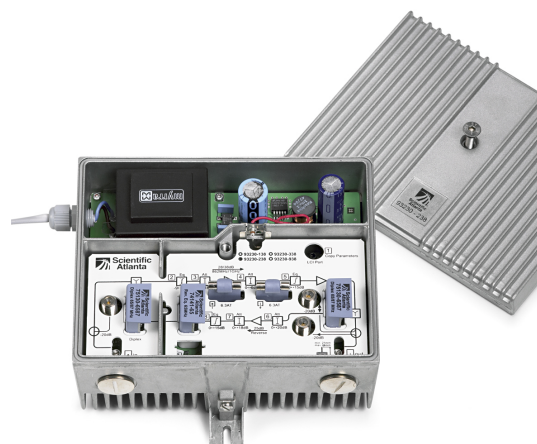
The mini amplifier performs to 1GHz in the forward path and can be configured electronically, using a handheld programmer terminal for rapid initial set-up or for adjustments that arise as network requirements shift. All settings are done without interrupting service, an especially important capability in networks that are delivering Voice over IP (VoIP) services. Settings for the EGC mini amplifier can be established or modified using a handheld programmer terminal and settings from one amplifier can be uploaded to the handheld programmer terminal for downloading to other amplifiers in order to streamline their configuration. Different forward gain settings (28 dB to 38 dB) can be obtained in the amplifier, enabling it to support several different applications within the network allowing a single amplifier model to help reduce inventory and sparing costs.

The number of amplifier plug-ins is reduced to a minimum to help operators keep inventory and costs down. The full range electronic attenuators and equalizers offer improved versatility and make it possible to achieve the same adjustment range as with conventional plug-in or potentiometer solutions. The unit features an easy-to-use, electronic input equalizer with built-in cable simulator to help ensure a flat input level to the amplifier. Plug-in diplex filters are used to determine the forward/reverse band split.

To meet future demands for more bandwidth, the mini amplifier offers an electronic 862 MHz to 1 GHz field-programmable bandwidth extension, as well as a reverse path that can be upgraded to 200 MHz.

Features

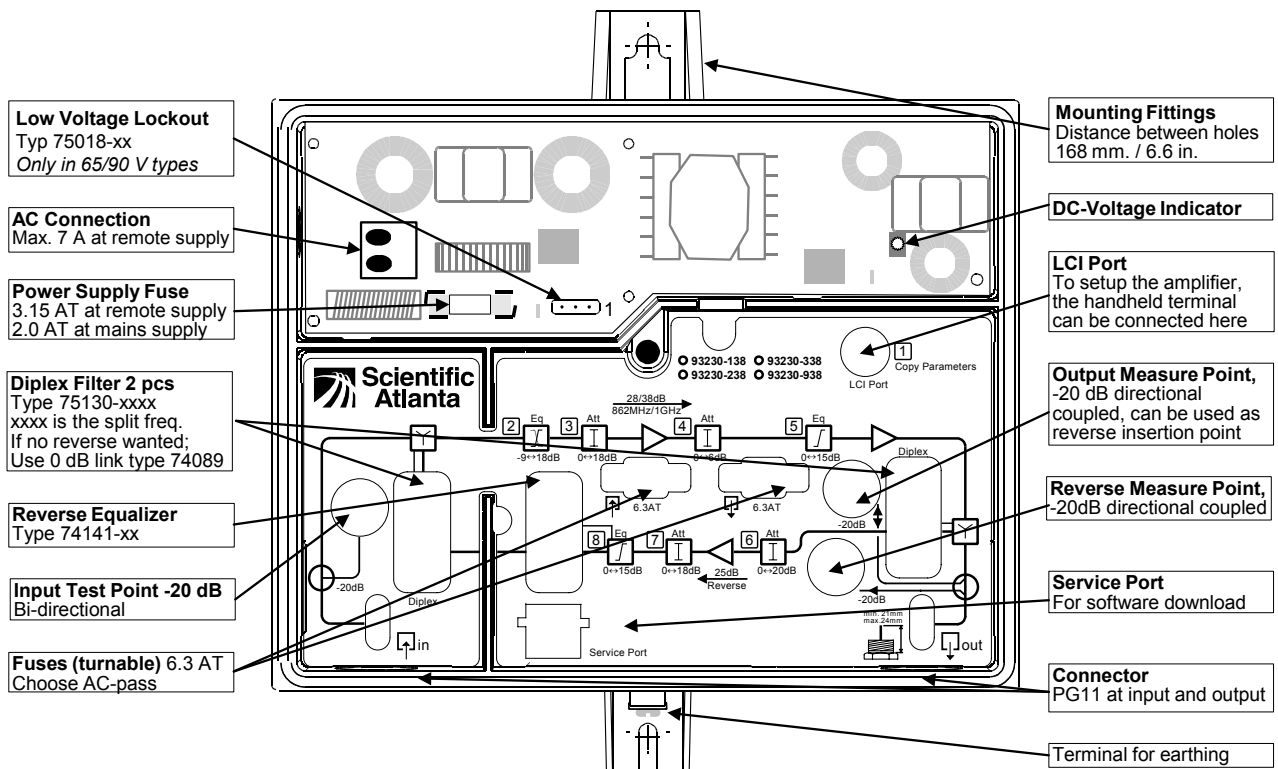
- GaAs-FET gain block technology for improved distortion and noise performance
- Common RF test point for forward output and reverse injections simplify reverse balancing
- 5 amp power passing
- Improved output level and flatness
- Improved surge protection – now 6 kV
- Plug-in, self-contained diplex filters for easy upgrade of reverse path bandwidth
- Low power consumption



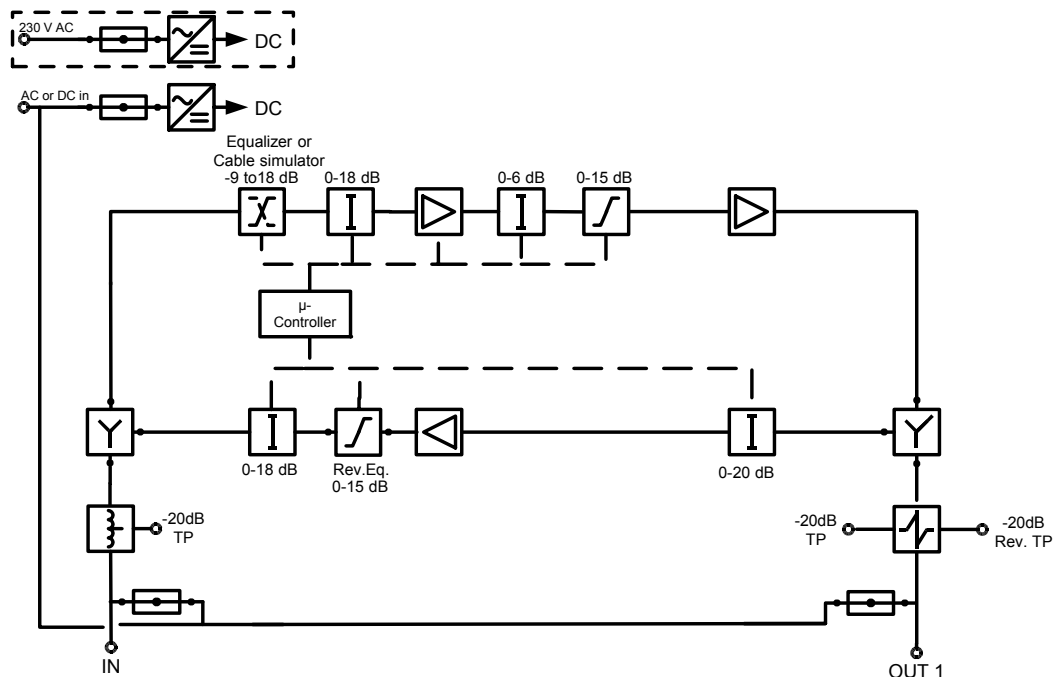
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Overview



Block Diagram



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Specifications

Forward Performance	Units	93230-x38		Notes
Frequency range	MHz	47 – 862 or 1 GHz		1
Gain	dB	28	38	2
Frequency response	dB	± 0.75 (± 1 dB to 1GHz)		2
Attenuator	dB	0 – 18 in 0.5 dB step		
Equalizer	dB	0 – 18 in 0.5 dB step		
Attenuator, interstage	dB	0 – 6 in 0.5 dB step		
Pre-equalizer, interstage	dB	0 – 15 in 0.5 dB step		
Test point, input, bi-directional	dB	-20 ± 1.5		
Measuring point, output, directional	dB	-20 ± 0.75		
Number of outputs		1		
Return loss	dB	20		4
Noise figure	dB	≤ 8	≤ 7.5 (≤ 8 to 1GHz)	3
Output level (reference 110 dBμV)				
CTB, EN 50083-3, 4.2.3	dB	≥ 63	≥ 63	5
CSO, EN 50083-3, 4.2.4	dB	≥ 58	≥ 59	5
Reverse Performance				
Frequency range	MHz	5 - 200		1
Gain	dB	26		2, 6
Frequency response	dB	± 0.5, 5 - 65 MHz (± 0,75, 5 - 200 MHz)		2, 6
Attenuators on input and output	dB	0 – 18 in 0.5 dB step		
Equalizer	dB	0 – 15 in 0.5 dB step		
Measuring point, reverse input, directional	dB	-20 ± 0.5		
Signal injection point, reverse	dB	-20 ± 0.5		
Return loss	dB	18		2, 4, 6
3-state reverse switch, EM controlled	dB	On/-6/Off		
Noise figure (max. gain, flat output)	dB	≤ 7,5, 5 - 65 MHz (≤ 8.0, 5 - 200 MHz)		
Output level				
IMD3 ≥ 60 dB, EN 50083-5, 3.2	dBμV	120.0, 5 - 65 MHz (115.0, 5 - 200 MHz)		6
IMD2 ≥ 60 dB, EN 50083-3, 4.2.2	dBμV	110.0, 5 - 65 MHz (109.0, 5 - 200 MHz)		6
General Performance				
Surge protection	kV, μs	6, 1.2/50		2
Enclosure category		IP 64		
Emission, EN 50083-2	dBpW	< 20		
Screening		> 85		
Connectors, input and outputs (reduction)		PG 11 (5/8")		
Test point		F-connector, Female		
Electrical				
65 V coax line powering (rms, sine)	V AC	24 – 65		7
230 V mains line powering (rms, sine)	V AC	187 – 250		
Power consumption remote powered	W	12		
Power consumption mains powered	W	14		
Max current, inputs and outputs	AAC	5		
Hum modulation at max. current, EN 50083-3	dB	≤ -65		8
Max. current, power insertion	A AC	7		
Environmental				
Operating temperature range	°C	-20 to +55		
Mechanical				
Housing dimensions, W x H x D	mm	185 x 145 x 95		
Material		Die-cast aluminum		
Weight	kg	2.2		
Packaging dimensions, H x W x D	mm	225 x 225 x 110		

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Specifications, cont.

Notes:

1. Frequency range depends on plug-in diplex filters and amplifier setting
2. Including diplex filter #A75130.106587
3. Max. gain, flat output 45-862MHz
4. At 40 MHz red. 1.5 dB/octave
5. Measured with 6 dB output tilt
6. Including plug-in equalizer
7. A DC voltage supply is possible, 35 - 90 V DC
8. - 55 dB, 5 – 15 MHz

Ordering Information

Un-configured Amplifier	Part Number
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 115 V mains powered	A93230.10138
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 230 V mains powered	A93230.10238
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 24-65 V coax line powered	A93230.10338
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 35-90 V coax line powered	A93230.10938
Configured Amplifier	
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 230 V mains powered, configured for 65 MHz reverse	A93230.1023865
Compact EGC Mini Amplifier, 862 MHz, 28/38 dB gain version, 24-65 V coax line powered, configured for 65 MHz reverse	A93230.1033865

Please note that some combinations are available on request only.

Required Accessories for Compact EGC Mini Amplifier 93230*

The table below contains ordering information for required and optional accessories that are not included as part of an un-configured 93230 amplifier. Please consult your account representative or customer service for ordering assistance.

The following **Required Accessories** must be ordered separately:

Required Accessories	Part Number
Plug-in Diplex Filter • 2 required, xx/yy MHz split	A75130.10xxyy
Plug-in Reverse Equalizer • 1 required xx MHz reverse band	A74141.10xx
For more information on the above, see the "Compact Amplifier and Node Accessories" (P/N: A541441) data sheet.	

* Please note that the required accessories are only relevant for un-configured amplifiers.

Optional Accessories for Compact EGC Mini Amplifier 93230

The following **Optional Accessories** for coax line powered amplifiers 93230 may be ordered separately:

Optional Accessories	Part Number
Voltage Lock-Out Module, 24 or 35 V *	A75018.00xx
*The 35 V Lock-Out Module is standard with all 90 V Power Supplies.	



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Part Number 7009156 Rev A
January 2006