Scientific Atlanta
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RF Electronics

Compact EGC Amplifier Model 93250

Description

The Compact Electronic Gain Control (EGC) Amplifier Model 93250 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 amplifier performs to 1 GHz 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 which are delivering Voice over IP (VoIP) services. Settings for the EGC amplifier can be established or modified using a handheld programmer terminal. 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 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 lower 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. Plug-in diplex filters are used to determine the forward/reverse band split.

To meet future demands for more bandwidth, the 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.

The Compact EGC Amplifier Model 93250 can be configured with a Scientific Atlanta status monitoring transponder (SMC or HMS) to enable remote monitoring of critical amplifier parameters and remote control of the built-in 3-state reverse switch. All amplifier settings are remotely addressable via the ROSA™ Element Management System to help reduce truck rolls and associated costs.

Features

- GaAsFET gain block technology for improved distortion and noise performance
- 8 amp power passing
- Improved output level and flatness
- 6 kV surge protection
- Plug-in, self-contained diplex filters for easy upgrade of reverse path bandwidth
- Easy plug-in mounting of transponder (no change of lid nor use of test points for cable connection)
- Optional status monitoring and control
- Integrated 3-state reverse switch (on/-6 dB/off) allows the reverse input to be isolated for noise and ingress troubleshooting
- Compact HMS transponder supported

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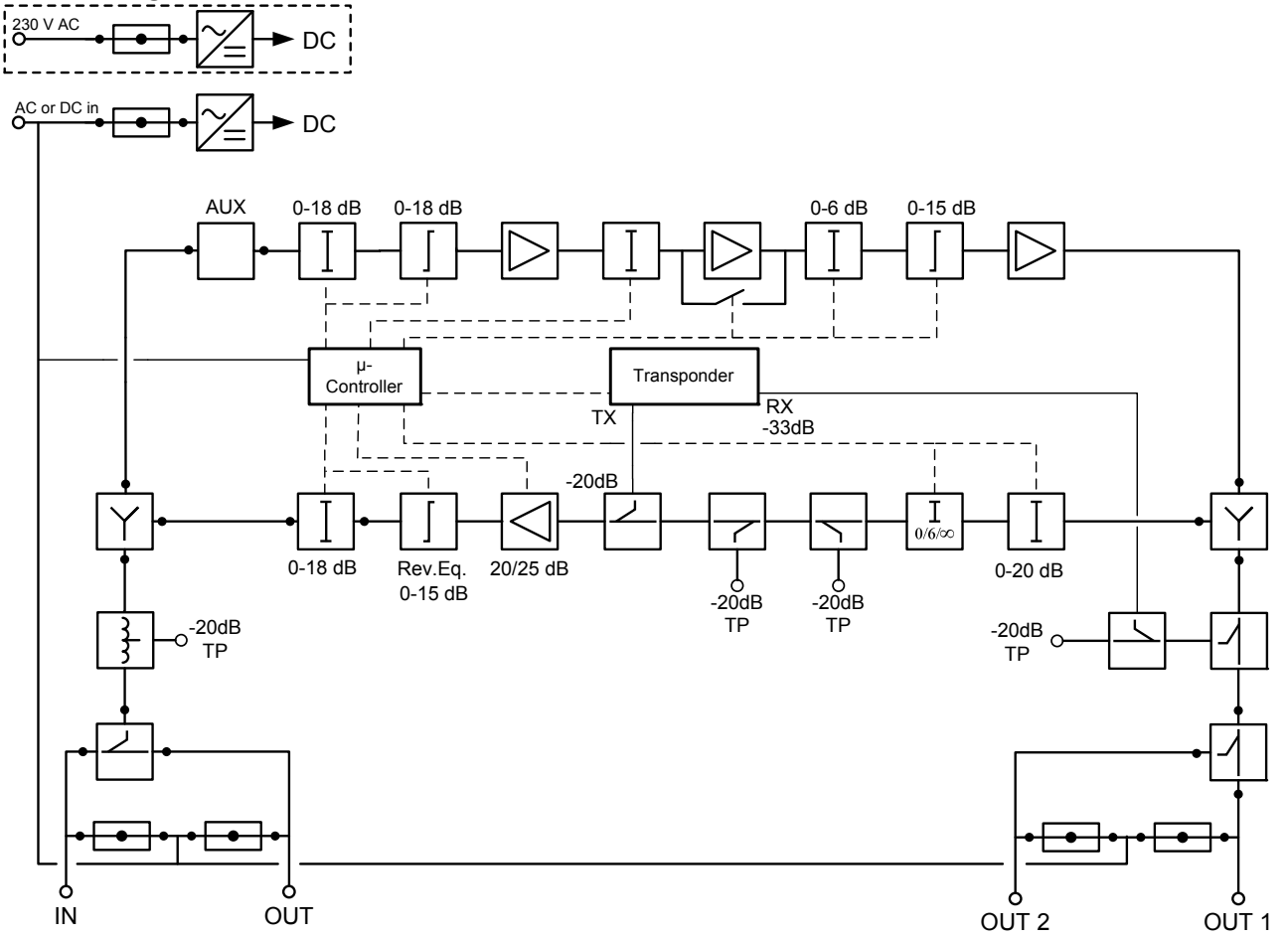
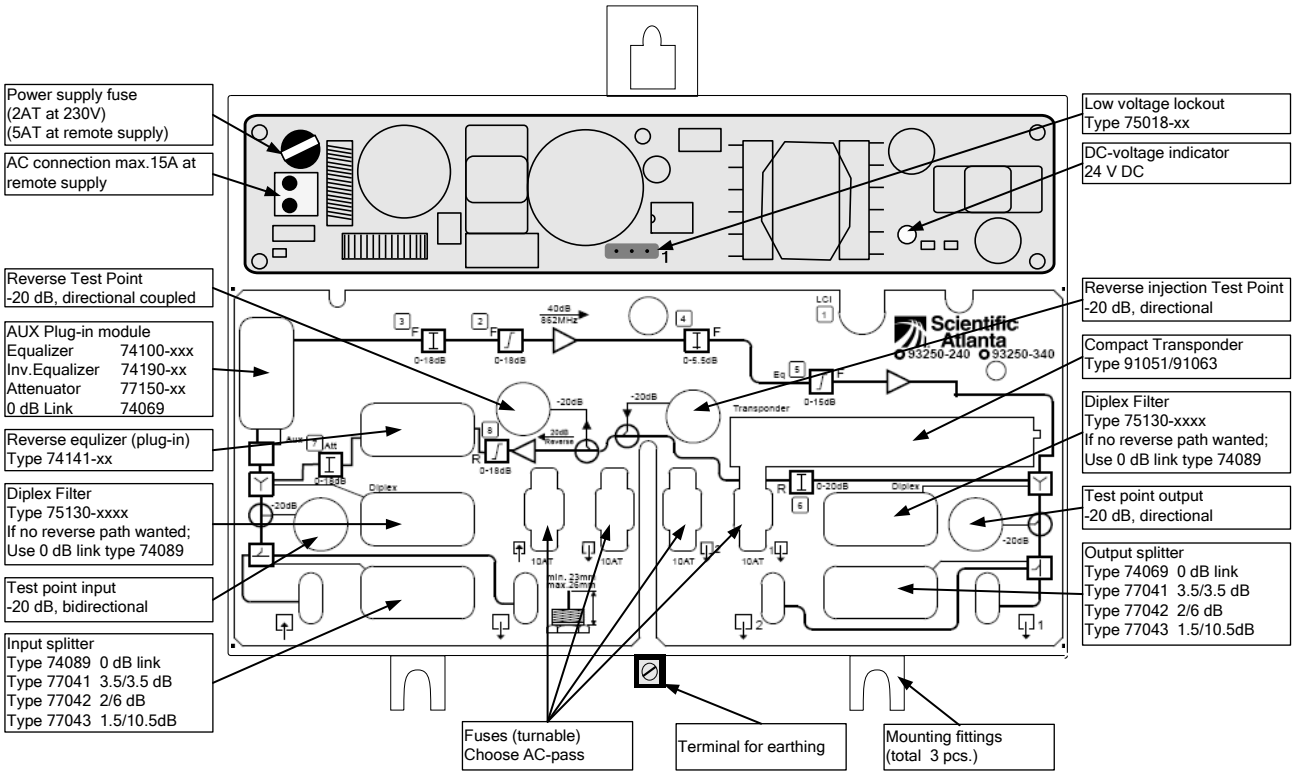
Block Diagram



Overview



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Specifications

Forward	Units	Description		Notes
Frequency Range	MHz	47 to 862	47 to 1000	1
Gain	dB	Selectable 28, 34, 40		
Flatness	dB	± 0.50	± 0.75	2
Input Attenuator	dB	0 to 18 in 0.5 dB step		
Input Equalizer	dB	0 to 18 in 0.5 dB step		
Interstage Attenuator	dB	0 to 6 in 0.5 dB step		
Interstage Pre-equalizer	dB	0 to 15 in 0.5 dB step		
Input Test Point	dB	-20 ± 1.5		
Output Test Point	dB	-20 ± 0.50	-20 ± 0.75	
Number of Outputs	–	1 or 2		3
Return Loss • Input, output port • Input, output test point	dB	 > 18 > 20		2, 4
Noise Figure	dB	7.0		5
Signal Feed Through Loss	dB	≤ 1.0		
Output Level @ 42 ch CENELEC • CTB ≥60 dB • CSO ≥60 dB	dBµV	 114 114		6, 7

Reverse	Units	Description		Notes
Frequency Range	MHz	5 to 65	5 to 200	1
Gain	dB	Selectable 20, 25		
Flatness	dB	± 0.5	± 0.75	
Input Attenuators	dB	0 to 20 in 0.5 dB step		
Output Attenuators	dB	0 to 18 in 0.5 dB step		
Output Equalizer	dB	0 to 15 in 0.5 dB step		
Test Point	dB	-20 ± 0.5		
Signal Injection Point	dB	-20 ± 0.5		
Return Loss at Test Point	dB	> 20 @ 5 to 10 MHz > 23 @ 10 to 200 MHz		4
Return Loss at Input and Output	dB	> 18		4, 8
Output Level • IMD3 ≥ 60 dB • IMD2 ≥ 60 dB	dBµV	 117 112	 111 107	
3-state Reverse Switch, EM controlled	–	On/-6 dB/Off		
Noise Figure	dB	≤ 7.5	≤ 8.0	

Unless otherwise noted, all data given are for the amplifier with standard configuration for 1 output.

Specifications, continued

General Performance	Units	Description	Notes
SMC/HMS Receive Level Attenuation	dB	-33 ± 0.75	
SMC/HMS Transmit Insertion Loss	dB	-20 ± 0.75	
Surge Protection	kV, µs	6, 1.2/50	9
Enclosure Category	–	IP 66	
Emission, EN 50083-2	dBpW	< 20	
Screening	dB	> 85	
Connectors, Inputs and Outputs(reduction)	–	PG 11 (5/8")	
Test Point	–	F-connector, Female	
Electrical			
65 V COAX Line Powering (rms, sine)	V AC	24 to 65	
230 V Mains Line Powering (rms, sine)	V AC	187 to 250	
Power Consumption, network powered	W	25.5 with built-in reverse amp 27.5 with plug-in transponder	
Current draw	A AC	See table	10
Max. Current, Inputs and Outputs	A AC	8	
Max. Current, Local Input	A AC	15	
Hum Modulation	dB	≤ -65	
Compliance/Safety			
Electrical Safety	–	EN 50083-1 EN 60065 IEC 65	
EMC Emissions	–	EN 50083-2	
Environmental			
Operating Temperature Range	°C °F	-20 to +55 -4 to +131	
Mechanical			
Housing Dimensions (W x H x D)	mm in.	230 x 190 x 120 9.1 x 7.5 x 4.7	
Packaging Dimensions (W x H x D)	mm in.	270 x 285 x 130 10.6 x 11.2 x 5.1	
Weight	kg lbs	3.0 6.6	

Notes:

1. Frequency range depends on plug-in diplex filters and amplifier settings.
2. With diplex filters.
3. Two outputs that can be activated by using splitter or directional coupler.
4. At 40 MHz red. 1.5 dB/octave.
5. Maximum gain, no equalization.
6. With 6 dB interstage EQ
7. Change in CTB, CSO, and Noise Figure with different interstage attenuation, relative to 0 dB.

40 dB	CTB	CSO	Noise Figure
2 dB	1	2	0.1
4 dB	2	2	0.2
6 dB	2	2	0.3
34 dB	**CTB**	**CSO**	**Noise Figure**
2 dB	2	1	0.1
4 dB	3	1	0.2
6 dB	4	1	0.3
28 dB	**CTB**	**CSO**	**Noise Figure**
2 dB	1	1	0.2
4 dB	3	1	0.6
6 dB	4	1	1.0

8. Start from 7 MHz.
9. According to IEC60 on input and output with diplex filters.
10. AC current draw is tested with 50 meters coaxial cable.

AC Input Voltage (V) / AC Current Draw (A)	24	30	35	40	45	50	55	60	65
Without transponder	1.24	1.00	0.87	0.78	0.71	0.65	0.60	0.57	0.54
With transponder	1.29	1.04	0.90	0.79	0.73	0.66	0.62	0.58	0.56

Ordering Information

Un-configured Amplifier	Part Number
Compact EGC Amplifier, 862MHz/1GHz, 28/40dB, 230V Electronic adjustable Att & Eq, PG11 at input/output, Plug-in Xpdr	A93250.10240
Compact EGC Amplifier, 862MHz/1GHz, 28/40dB, 65V Electronic adjustable Att & Eq, PG11 at input/output, Plug-in Xpdr	A93250.10340
Pre-configured Amplifier	**Part Number**
Compact EGC Amplifier, 862MHz/1GHz, 28/40dB, 230V; Elec adj Att & Eq, PG11 at in/out, Plug-in Xpdr; Configured for 65MHz rev;0dB IN;0dB OUT;0dB AUX	A93250.1024065
Compact EGC Amplifier, 862MHz/1GHz, 28/40dB, 65V; Elec adj Att & Eq, PG11 at in/out, Plug-in Xpdr; Configured for 65MHz rev;0dB IN;0dB OUT;0dB AUX	A93250.1034065

Please note that some combinations are available on request only.

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

Required Accessories	Part Number	Notes
Plug-in Diplex Filter –2 required, choose from below:		
• 30/47 MHz split	A75130.103047	
• 42/54 MHz split	A75130.104254	
• 65/87 MHz split	A75130.106587	
Plug-in Reverse Equalizer –1 required, choose from below:		
• 30 MHz reverse band	A74141.1030	
• 42 MHz reverse band	A74141.1042	
• 65 MHz reverse band	A74141.1065	
Plug-in at input – 1 required, choose from below:		
• 1 link 0 dB at input	A74089.10	
• 1 splitter 3.5/3.5 dB at input	A77041.10	
1 splitter 2/6 at input	A77042.10	
1 splitter 1/10.5 dB at input	A77043.10	
1 splitter 0.6/14 dB at input	A77044.10	
Plug-in at AUX – 1 required, choose from below:		
• 1 link 0 dB	A74069.10	
• 1 attenuator 2, 4, 6, 8, 10 or 12 dB (xx=02, 04, 06, 08, 10 or 12)	A77150.100xx	
• 1 equalizer 450/606/750/862 MHz Tilt 3, 6, 9, 12, 15 dB	A74100.10xxx	1
• 1 inverse equalizer 862 MHz -3, -6, -9 or -12 dB (xx=03, 06, 09 or 12)	A74190.10xx	
Plug-in at output – 1 required, choose from below:		
• 1 link 0 dB at output	A74069.10	
• 1 splitter 3.5/3.5 dB at output	A77041.10	
1 splitter 2/6 at output	A77042.10	
1 splitter 1/10.5 dB at output	A77043.10	
1 splitter 0.6/14 dB at output	A77044.10	
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.

*The following **Optional Accessories** for Model 93250 amplifiers may be ordered separately.*

Optional Accessories	Part Number
Voltage Lock-Out Module, 24 or 35 V *	A75018.00xx
Plug-in Compact SMC Transponder	A91051.12
Plug-in Compact HMS Transponder	A91063.10
For additional information on the status monitoring transponders, see the “Compact Transponder” (P/N: 7006287) *The 35 V Lock-Out Module is standard with all 90 V Power Supplies.	

Notes:

1. Plug-in Equalizer at AUX. ordering matrix.

A74100.10xxx Frequency / Tilt (dB)	Frequency (MHz)			
	450	606	750	862
3	N/A	A74100.10603	N/A	A74100.10803
6	A74100.10406	A74100.10606	A74100.10706	A74100.10806
9	A74100.10409	A74100.10609	A74100.10709	A74100.10809
12	A74100.104012	A74100.10612	A74100.10712	A74100.10812
15	N/A	A74100.10615	N/A	N/A

CE

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