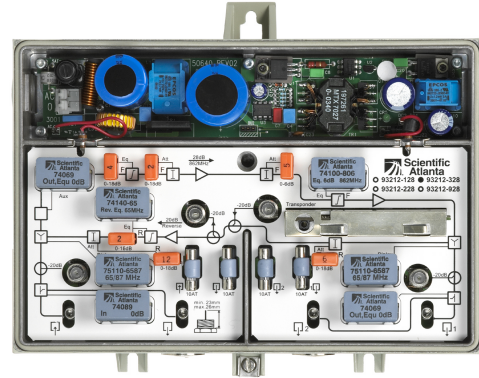


## Compact Amplifier 93212

### Description

The 862 MHz Compact Amplifier Platform includes a variety of RF amplifiers that address the divergent needs of today's broadband networks. All Compact amplifiers are optimized for both trunk and distribution applications and provide superior 2-way performance and reliability combined with a user-friendly layout. All share common plug-in accessories.

Compact amplifiers can be configured with duplex filters, forward interstage pads and interstage equalizer, to ensure optimal performance. The reverse amplifier is an integral part of all Compact amplifiers and enables a reverse bandwidth of more than 65 MHz. The amplifiers within this series utilize the orange plug-in 3-pin attenuator pads. These pads provide maximum user friendliness and make it very easy to replace the amplifier, in case of failure. Since the pads are simply moved to the new amplifier, there is no need for manual and complex adjustment procedures. And since the amplifiers within this series use the same pads for both attenuation and input tilt, operators will be able to lower their cost of spares. The extra AUX plug-in socket means that it is possible to insert cable correctors, inverse equalizers and attenuation pads at the input. The plug-in splitters at both input and output make it possible to configure the amplifier to the network and as such eliminate the need for expensive external power passing passives.



The Compact Amplifier 93212 features a high output level to help cable operators deliver greater reach with fewer actives. The unit features improved flatness and re-arranged test point reference for more straight forward reverse path alignment and common reference for signal injection point and test point. Both test point and signal injection point utilize directional couplers to ensure a precise reverse alignment that is virtually independent of impedance mismatches in the network.

All Compact amplifiers 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. By switching to detection mode (-6 dB) it can be observed from which part of the network the ingress derives. Once a failure has been located, the defective network segment may be isolated until the failure has been eliminated and the remaining part of the reverse path is ensured normal traffic.

### Features

- GaAsFET gain block technology for improved distortion and noise performance
- Reverse amplifier temperature compensation for minimum gain variation
- Common RF test point for forward output and reverse injections simplify reverse balancing
- 8 amp power passing
- Improved output level and flatness
- Improved transient protection – now 6 kV
- Plug-in, self-contained duplex 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 each reverse input to be isolated for noise and ingress troubleshooting
- Supports the Compact HMS transponder

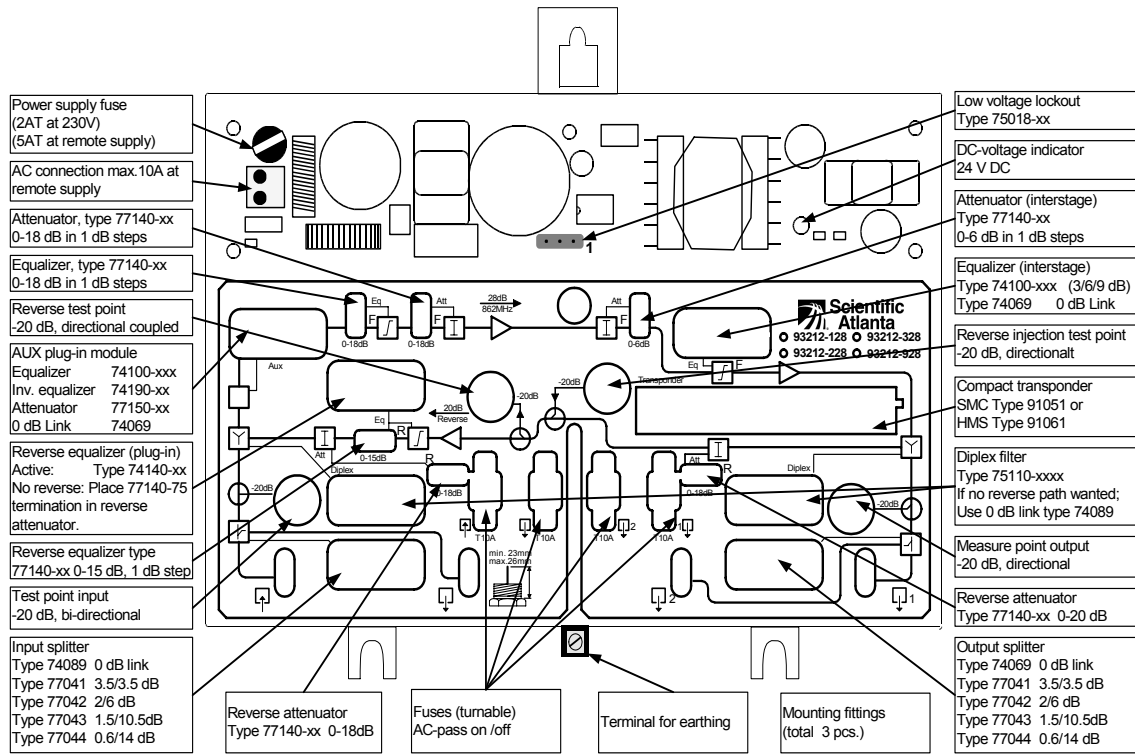


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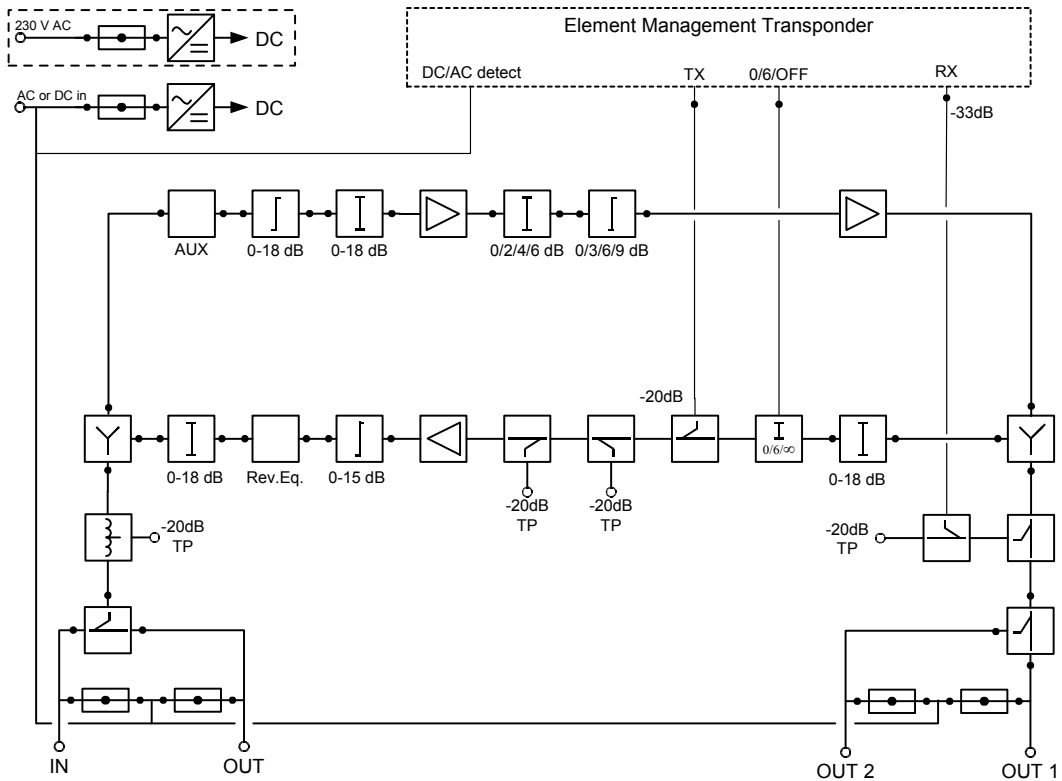
# Compact Amplifier 93212



## Overview



## Block Diagram



# Compact Amplifier 93212



## Specifications

Forward Performance	Units	93212-x28	93212-x32	93212-x38	Notes
Frequency range	MHz		47 - 862		1
Gain	dB	28 ± 0.75	32 ± 0.75	38 ± 0.75	2
Frequency response	dB		± 0.5 typ.		2
Attenuator, plug-in	dB		0 - 18		
Equalizer, plug-in	dB		0 - 18		
Attenuator, plug-in interstage	dB		0 - 6		
Pre-equalizer, interstage	dB		0/3/6/9		
Input auxiliary socket			Plug-in		
Test point, input, bi-directional	dB		-20 ± 1.5		
Measuring point, output, directional	dB		-20 ± 0.5		
Number of outputs			1 or 2		3
Input signal loop-through			Plug-in		
Input loop-through attenuation	dB		≤ 1		
Return loss	dB		20		4
Return loss on test point	dB		23		4
Noise figure (max. gain, flat output)	dB	≤ 5.5	≤ 6.5	≤ 6.0	
<b>Output level (reference 113 dB<math>\mu</math>V)</b>					
CTB, EN 50083-3, 4.2.3	dB		≥ 64		
CSO, EN 50083-3, 4.2.4	dB		≥ 65		5
<b>Reverse Performance</b>					
Frequency range	MHz		5 - 65		1
Gain	dB		20.5 ± 0.5		6
Frequency response	dB		± 0.5		2
Attenuator, plug-in	dB		0 - 18		
Equalizer, plug-in	dB		0 - 15		
Measuring point, output, directional	dB		-20 ± 0.5		
Signal injection point, reverse	dB		-20 ± 0.5		
Return loss	dB		20		6
Return loss on test point	dB		23		6
3-state reverse switch, EM controlled	dB		On/-6/Off		
Noise figure (max. gain, flat output)	dB		≤ 6.5		
<b>Output level</b>					
IMD3 ≥ 60 dB, EN 50083-5, 3.2	dB $\mu$ V		118.0		
IMD2 ≥ 60 dB, EN 50083-3, 4.2.2	dB $\mu$ V		112.0		
<b>General Performance</b>					
<b>Power supply</b>					
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	W	22.0	22.5	22.5	8
Max current, inputs and outputs	AAC		8		
Hum modulation at max. current, EN 50083-3	dB		≤ -65		
Max. current, power insertion	A AC		10		
Transient protection	kV, $\mu$ s		6, 1.2/50		
Enclosure category	IP		66		
Emission, EN 50083-2	dBpW		< 20		
Screening			> 85		
Connectors, input and outputs (reduction)	PG		11 (5/8")		
Test point	Female		F-connector		
<b>Environmental</b>					
Operating temperature range	°C		-20 to +55		
<b>Mechanical</b>					
Housing dimensions, W x H x D	mm		230 x 155 x 95		
Material			Die-cast aluminum		
Weight	kg		2.7		
Packaging dimensions, H x W x D	mm		285 x 270 x 100		

# Compact Amplifier 93212



## Specifications, cont.

Notes:
1. Frequency range depends on plug-in diplex filters
2. Including diplex filter #A75110.106587
3. Two outputs with plug-in splitter
4. At 40 MHz red. 1.5 dB/octave
5. Without band 1, $\geq 62$ including band 1
6. Including plug-in equalizer
7. A DC voltage supply is possible, 35 - 90 V DC
8. Including transponder

## Ordering Information

Amplifiers, single and dual	Part Number
93212 Compact Amplifier, 862 MHz, 28 dB gain version	A93212.10x28
93212 Compact Amplifier, 862 MHz, 32 dB gain version	A93212.10x32
93212 Compact Amplifier, 862 MHz, 38 dB gain version	A93212.10x38
To select the requested power supply, please replace the x in the amplifier part number with the required figure 1, 2, 3 or 9 from the power supply number (stated below)	
Power Supply 115 V mains powered, refer to separate data sheet	A932x2.xx1xx
Power Supply 230 V mains powered	A932x2.xx2xx
Power Supply 24-65 V coax line powered	A932x2.xx3xx
Power Supply 35-90 V coax line powered, refer to separate data sheet	A932x2.xx9xx

Please note that some combinations are available on request only.

## Required Accessories for Compact Amplifier 93212

Below table contains ordering information for required and optional accessories that are not included as part of a **93212 configured 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 Pads (attenuators) - available in 1.0 dB steps from 0 to 20 dB <ul style="list-style-type: none"> <li>• 2 required for forward att + eq</li> <li>• 1 required for forward interstage eq</li> <li>• 2 required for reverse att + eq</li> <li>• 1 required for reverse input</li> </ul>	A77140.00xx A77140.00xx A77140.00xx A77140.00xx
Plug-in Diplex Filter <ul style="list-style-type: none"> <li>• 2 required, xx/yy MHz split</li> </ul>	A75110.10xxyy
Plug-in at input - 1 required, chose from below <ul style="list-style-type: none"> <li>• 1 link 0 dB at input</li> <li>• 1 splitter x/y dB at input</li> </ul>	A74089.10 A7704x.10
Plug-in at AUX - 1 required, chose from below: <ul style="list-style-type: none"> <li>• 1 link 0 dB</li> <li>• 1 attenuator x dB</li> <li>• 1 equalizer 450/606/862 MHz x dB</li> <li>• 1 inverse equalizer x dB</li> </ul>	A74069.10 A77150.100x A74100.10xxx A74190.10xx
Plug-in at Interstage - 1 required, chose from below: <ul style="list-style-type: none"> <li>• 1 link 0 dB</li> <li>• 1 equalizer x dB</li> </ul>	A74069.10 A74100.10xxx
Plug-in Reverse Equalizer <ul style="list-style-type: none"> <li>• 1 required xx MHz reverse band</li> </ul>	A74140.10xx
Plug-in at output - 1 required, chose from below: <ul style="list-style-type: none"> <li>• 1 link 0 dB at output</li> <li>• 1 splitter x/y dB at output</li> </ul>	A74069.10 A7704x.10
For more information on the above, see the "Compact Amplifier and Node Accessories" (P/N: A541441) data sheet.	

# Compact Amplifier 93212



## Optional Accessories for Compact Amplifier 93212

The following **Optional Accessories** for amplifiers 93212 may be ordered separately:

Optional Accessories	Part Number
Plug-in Compact SMC Transponder	A91051.11
Plug-in Compact HMS Transponder	A91061.10
Voltage Lock-Out Module, 24 or 35 V *	A75018.00xx
For additional information on the status monitoring transponders, see the "Compact Transponder" (P/N: 7006287) and "Compact HMS Transponder" (P/N: 7006286) data sheet(s).	
*The 35 V Lock-Out Module is standard with all 90 V Power Supplies.	



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Part Number 7004688 Rev D  
November 2004