

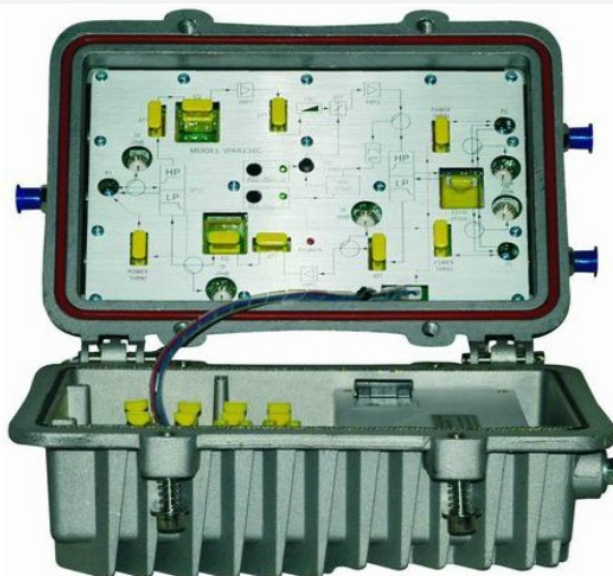
## SA1022AGC-1G Field Bidirectional AGC Trunk Amplifier

### 1. Summary

SA1022AGC-1G Field Bidirectional AGC Trunk Amplifier is a new high gain amplifier. Adopt mature and optimized circuit design, scientific and rational internal process, high quality materials, and built-in high performance AGC control circuit to ensure the stable gain and low distortion. It's the best choice for large and medium-sized bidirectional CATV transmission network.

### 2. Performance Characteristic

- The forward preceding stage adopts the newest high index imported low noise push pull amplifier modules or GaAs push pull modules, output stage adopts high index imported power-double amplifier modules or GaAs amplifier modules. The output level is high and the nonlinear index is good. The backward adopts the newest high index imported return dedicated amplifier modules. The distortion is low and signal to noise ratio is high.
- It is more convenient to debug, because of plug-in duplex filter, plug-in fixed (or adjustable) equalizer and attenuator, plug-in output splitter and scientific and rational on-line detection ports.
- Built-in optimized high performance AGC control circuit, make the control more accurate and the link signal working more stable.
- The equipment can work steadily outdoor under bad environmental condition, because of waterproof aluminium case, high reliability switching power supply and lightning protection system.



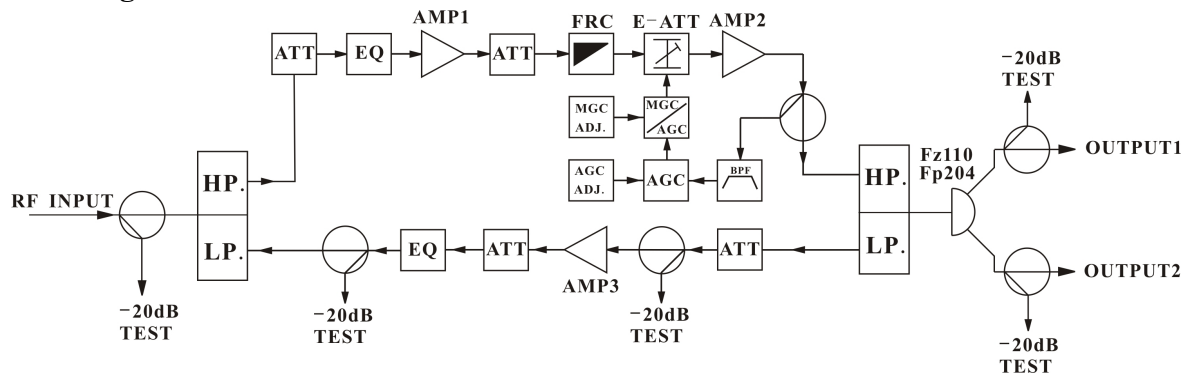
### 3. Technique Parameter

The technique Parameters of SA1022AGC-1G Field Bidirectional AGC Trunk Amplifier

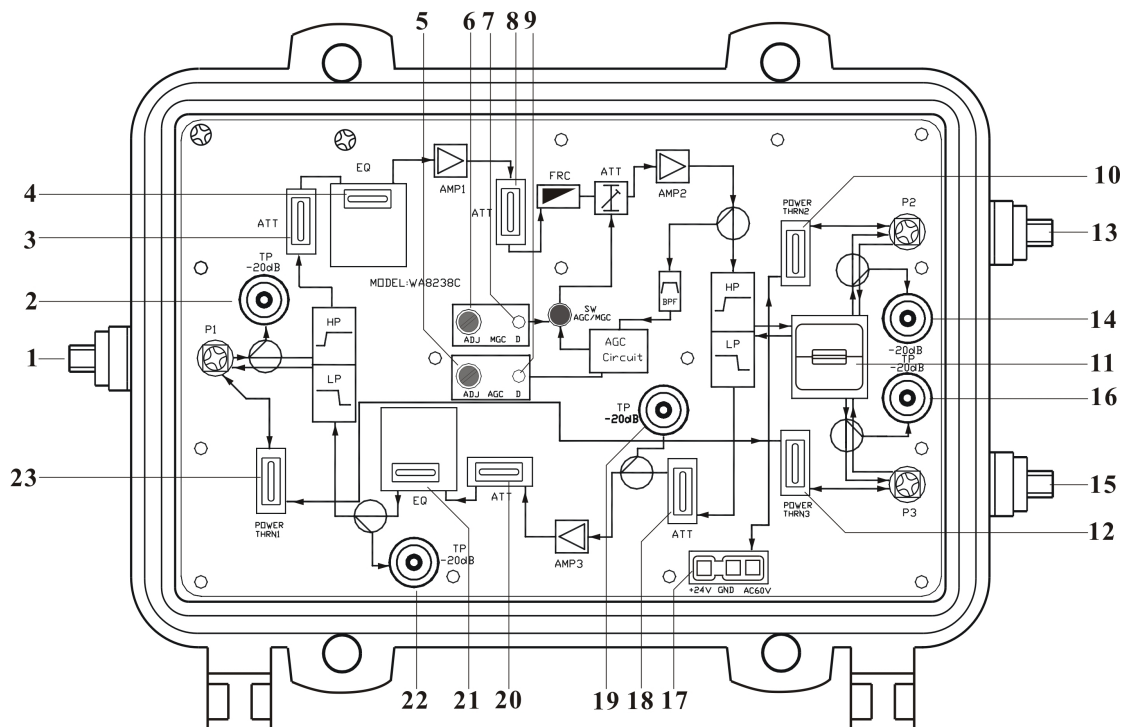
Item	Unit	Technique Parameter			
<b>Downlink Transmission Path</b>					
Frequency Range	MHz	47/85 ~860/1000			
Rated Gain	dB	30	34	36	38
Minimum Full Gain	dB	≥30	≥34	≥36	≥38
Rated Input Level	dBμV	72			
Rated Output Level	dBμV	106/108			
Flatness in Band	dB	±0.75			
Noise Figure	dB	≤ 10			
Return Loss	dB	≥ 16			
Attenuation	dB	1-18 (Fixed insert, 1dB stepping)		According to user requirements	
Equilibrium	dB	1-15(Fixed insert, 1dB stepping)			
C/CTB	dB	≥67		Test condition: 79 channels signal, output level: 53MHz/550MHz/750MHz . 99dBuV/105dBuV/108 dBuV	
C/CSO	dB	≥69			
AGC Pilot Carrier Frequency	MHz	168.25 (Or up to users)			

AGC Characteristic	dB	±4 (Input) /±0.5 (Output)			
Group Delay	ns	≤ 10 (112.25 MHz/116.68 MHz)			
Signal to Hum Ratio	%	< 2			
Gain Stability	dB	-1.0 ~ +1.0			
<b>Uplink Transmission Path</b>					
Frequency Range	MHz	5 ~ 42/65			
Rated Gain	dB	12	16	20	24
Maximum Output Level	dBμV	≥ 110			
Flatness in Band	dB	±0.75			
Noise Figure	dB	≤ 12			
Return Loss	dB	≥ 16			
Carrier to Second-order Inter-modulation Ratio	dB	≥ 52	Test Condition: Output level is 110dBuV, test points: F1=10MHz, f2=60MHz, f3=f2-f1=50MHz		
Group Delay	ns	≤ 20 (57MHz/59MHz)			
Signal to Hum Ratio	%	< 2			
<b>General Characteristic</b>					
Characteristic Impedance	Ω	75			
Test Interface	dB	-20±1			
Supply Voltage	V	A: AC (135 ~ 250) V; B: AC (35 ~ 90) V			
Impulse Withstand Voltage (10/700μs)	kV	> 5			
Power Consumption	W	25			
Dimensions	mm	247*205*123			

## 4. Block Diagram



## 5. Structure diagram



- |                                       |                                      |                                 |
|---------------------------------------|--------------------------------------|---------------------------------|
| 1. RF input                           | 2. Input RF test port (-20dB)        | 3. Forward fixed ATT inserter 1 |
| 4. Forward fixed EQ inserter          | 5. AGC gain control adjustment       |                                 |
| 6. MGC gain control adjustment        | 7. MGC control indicator             | 8. Forward fixed ATT inserter 2 |
| 9. AGC control indicator              | 10. Overcurrent inserter of output 1 | 11. Output branch or splitter   |
| 12. Overcurrent inserter of output 2  | 13. RF output 1                      | 14. RF output test port1(-20dB) |
| 15. RF output 2                       | 16. RF output test port 2(-20dB)     | 17. Main Power input port       |
| 18. Backward input ATT inserter       | 19. Backward input test port (-20dB) |                                 |
| 20. Backward output ATT inserter      | 21. Backward output EQ inserter      |                                 |
| 22. Backward output test port (-20dB) | 23. Overcurrent inserter of input    |                                 |

## 6. Ordering Guide

Please check: uplink and downlink crossover frequency of bidirectional paths and the frequency of AGC pilot signals.

### Special Tips:

1. Before using this product must be reliable grounding!
2. The maximum overcurrent capacity of this product is 10A.