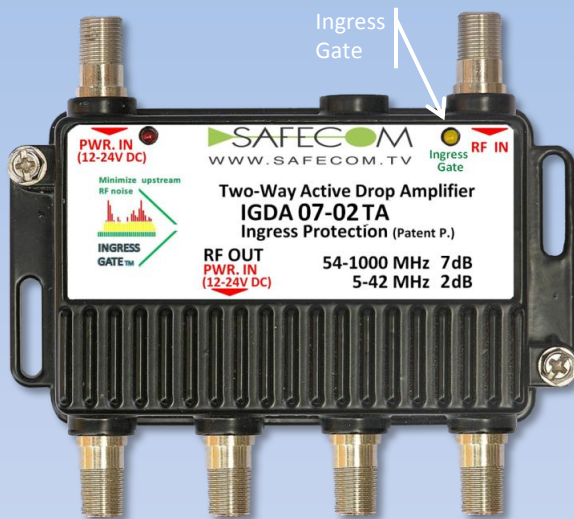


UPSTREAM NOISE BLOCKER HOME AMPLIFIER

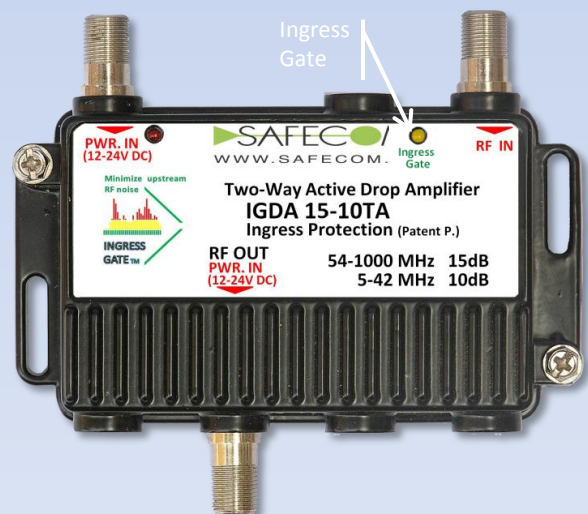
Innovative Home amplifier with upstream gateway that allows carrier signals from customer premises into the network only when the home devices are actively transmitting.



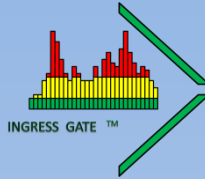
- ✓ Cost-effective Patent P. technology for upstream noise suppression.
- ✓ Drop amplifier integration.
- ✓ No need for expensive monitoring or useless detection.
- ✓ Simple integration outdoor or indoor.
- ✓ Plug and play device.
- ✓ Best performance in the market.

Safecom's new IngressGate™ is a revolutionary cost-effective ingress noise suppression technology that enables CATV operators to increase upstream bandwidth and add advanced services with no interference .

Unlike standard solutions for ingress detection and monitoring, Safecom's patent-pending technology eliminates 70-90% of the ingress noise by addressing the source of the problem where most ingress noise is created - at the customer premises.

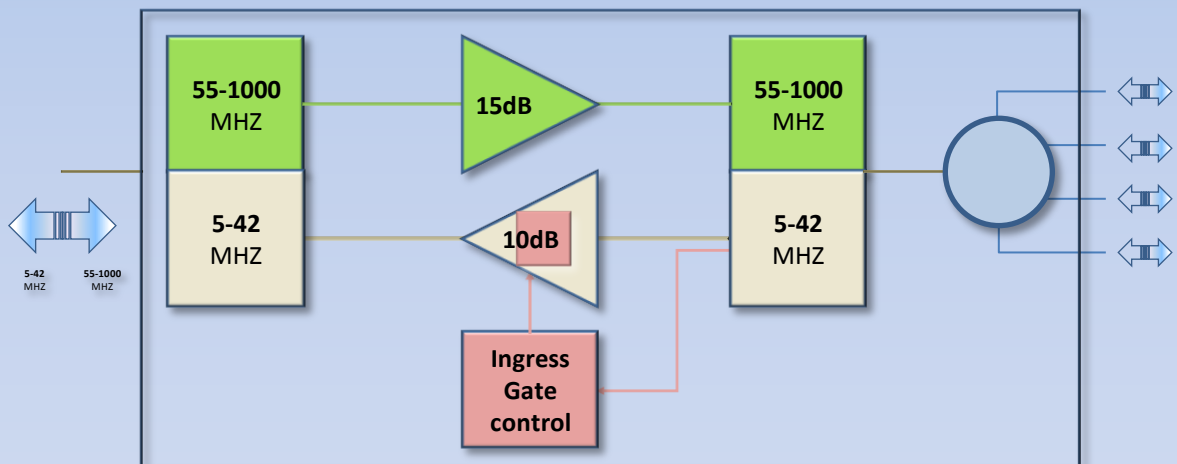


How it works?



Safeom's technology is based on the burst nature of the return path and the random presence of ingress noise. The technology functions as a upstream gateway that allows carrier signals from customer premises into the network only when the home devices are actively transmitting. This mode of operation eliminates most of the noise from customer premises, without any adverse effect on the upstream and downstream signals.

Safecom's Ingress gate™ (patent p) technology supports DOCSIS 3.0 that requires switching speed faster than 1.6 μ S and ensures the most reliable and cost effecting solution for blocking the upstream noise.



For improving system implementation and reducing cost integrated ingress protection drop amplifier enables the simplest way to resolve the upstream RF noise problems while at the same time saving the need for additional common drop amplifiers.

Safecom offer range of Ingress gate solutions with or /without RF gain at the upstream /downstream.

Safecom's IngressGate Patent P. technology

Competitive analysis



	Opposite Phase concept.	IngressGate™ Solution Patent p.
Technology	Opposite phase merging.	Operates as upstream gate that opens only when the modem transmits.
Effectiveness	Partial 0- 6 dB only ingress reduction.	<u>Full</u> 15-35 dB ingress isolation.
Operating principle	Assumes ingress noises are at the same phase or from the same source.	Based on the burst nature of the return path.
Solution	<u>Cannot solve</u> ingress problems from customer premises.	Solves and blocks all ingress noise from customer premises.



	Company 1	Company 2	Company 3	Safecom
Technology	turn the upstream path to ON, OFF, or 6 dB attenuation	Frequency Division	Ingress detection and 6dB attenuation	Usage-based upstream Gate Technology : Open only when Modem transmitting
Cost	Med	High	Med	Very Low
Needs ingress detection system	Yes	Yes	Yes	No
Installation	Network	Network	Network	Home (by customer or technician)
Broadcast continues during installation	Disconnect RF signal to large area during installation	Disconnect RF signal to large area during installation	Disconnect RF signal to large area during installation	No RF disconnections during installation

“Noise” in the cable network is one of the greatest hurdles to applying superior, high-speed data, DOCSIS 3.0 services, requiring high integrity signal transmission.

Noise ingress reduces network capacity. Removing noise is the greatest challenge faced by Cable operators as they seek to migrate to 64 QAM and eventually to 256 QAM digital modulations.

Model		IGDA 0702 TATE/MA (4 outputs)		IGDA1510 TATE/MA (1 output)	
Ingress Gate Parameter	Unit	Min value	Max value	Min value	Max value
Gate upstream level ⁴	dBmV	23		20	
Gate upstream time	µs		1.5		1.5
Gate insert loss	dB		1.5		1.5
Noise Block –Upstream ingress Gate isolation	dB	35dB-A / 15dB-B		35db-A/15dB-B	
Forward (downstream) path					
Frequency range	MHz	42/54/70/85	1000	42/54/70/85	1000
Gain	dB	7		14	
Flatness	dB		±0.75		1.0
Output level ¹	dBµV		77		85
Noise figure (max)	dB		<4.0		<4.0
Group delay	Front 1st chl	ns	25		25
	2 nd chl	ns	10		10
	From 3th chl	ns	5		5
CTB ¹	dBc		-73		-73
CSO ¹	dBc		-62		-62
Cross modulation ¹	dBc		-75		-75
Reverse (upstream) path					
Frequency range	MHz	5	30/47/55/65	5	30/47/55/65
Gain	dB	2		10	
Flatness	dB		<1.0		<1.0
Max output level	dBmV	60		60	
Noise figure (Max)	dB		<6.8		<6.8
Group delay	5MHz	ns	20		20
	Within band	ns	25		25
	Middle ²	ns	5		5
2 nd Inter modulation ²	Reverse	dBc	-70		-70
	Forward	dBmV	-40		-40
3 rd Inter modulation ²	Reverse	dBc	-60		-60
	Forward	dBmV	-35		-35
Cross modulation ³	dBc		-75		-75
General performance					
Resistance	Ohm		75		
Return loss	dB		18		
Hum modulation	dBc		-75		
RFI shielding	dB		100 min		
Surge withstand	RF input	IEEE C62.41 B3 6kV/300kA combo wave+A3 6kV/ ring wave			
	Other ports	IEEE C62.41 Category A36kV/ ring wave			
Power consumption ⁴	mA	160mA –Gate close 280mA –Gate open			
Waterproof	kg/cm ²	1			
F port conductor	Gold-plated, beryllium	360° pin structure, push or pull force≥ 8 Newton .			
Measurement	mm	85×75×23			
Weight	G /	180			

Note:

- 1) Input forward flat 10dBmV, 77 channels - 6MHz
- 2) Input return (upstream) 2 un modulated series carriers @ 27, 33MHz, out level 58dBmV.
- 3) One carrier wave un-modulation.
- 4) During the period that upstream gate is open.