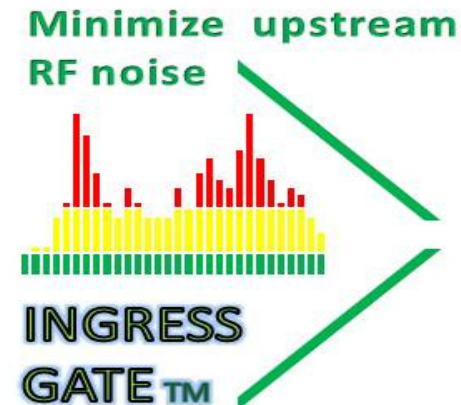


## IngressGate™ - Indoor Ingress suppression (patent p)

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



Safecom's new IngressGate™ is a revolutionary cost-effective ingress 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?

Safecom's patent-pending technology is based on the burst nature of the return path and the random presence of ingress noise. The technology functions as an 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 ingress noise 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 mS and ensures the most reliable and cost effecting solution for upstream ingress noise.

<b>Ingress Gate drop amplifiers</b>	Common Drop amplifiers (active return)
<b>The average noise floor at customer houses -59dB (mV)</b> <b>A: Typical drop amplifier NF is + 7 dB</b> <b>B: typical Amp gain-upstream +10dB</b> <b>C: ingress gate isolation is (type A) -35dB</b> <b>Results – Noise decrease less -18 dB</b>	The average noise floor at customer houses -59dB (mV) A: Typical drop amplifier NF is + 7 dB B: typical Amp gain-upstream +10dB Results – Noise increase almost +17 dB
<b>Noise level *(calculated) = -77dB ( mV)</b> <b>* Floor noise</b>	Noise level (upstream) -42dB (mV)

For improving system implementation and reducing cost integrated ingress protection drop amplifier enables the simplest way to resolve the ingress 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.

### 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.

## Upstream Ingress Protection with RF Active forward/return gain Electric Performance- DOCSIS 3 READY

Model		IGDA1010 TA/TE/MA		IGDA1510 TA/TE/MA	
Ingress Gate Parameter	Unit	Min value	Max value	Min value	Max value
Gate upstream level <sup>4</sup>	dBmV	20		20	
Gate upstream time	µs		1.5		1.5
Gate insert loss	dB		1.5		1.5
Gate switch isolation	dB	35dB-A/15dB-B		35dB-A/15dB-B	
<b>Forward (downstream) path</b>					
Frequency range	MHz	47/54/70/85	1000	47/54/70/85	1000
Gain	dB	10		14	
Flatness	dB		1.0		1.0
Output level <sup>1</sup>	dBµV		80		85
Noise figure	dB		4.0		4.0
Group delay	Front 1st chl	ns	25		25
	2 <sup>nd</sup> chl	ns	10		10
	From 3th chl	ns	5		5
CTB <sup>1</sup>	dBc		-73		-73
CSO <sup>1</sup>	dBc		-62		-62
Cross modulation <sup>1</sup>	dBc		-75		-75
<b>Reverse (upstream) path</b>					
Frequency range	MHz	5	30/47/55/65	5	30/47/55/65
Gain	dB	10		10	
Flatness	dB		1.0		1.0
Max output level	dBmV	60		60	
Noise figure	dB		6.8		6.8
Group delay	5MHz	ns	20		20
	Within band	ns	25		25
	Middle <sup>2</sup>	ns	5		5
2 <sup>nd</sup> Inter modulation <sup>2</sup>	Reverse	dBc	-70		-70
	Forward	dBmV	-40		-40
3 <sup>rd</sup> Inter modulation <sup>2</sup>	Reverse	dBc	-60		-60
	Forward	dBmV	-35		-35
Cross modulation <sup>3</sup>	dBc		-75		-75
<b>General performance</b>					
Resistance	Ohm	75			
Return loss	dB	18			
Hum modulation	dBc	-75			
RFI shielding	dB	100			
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 <sup>4</sup>	mA	320			
Waterproof	kg/cm <sup>2</sup>	1			
F port conductor	Gold-plated, beryllium	360° pin structure. push or pull force≥ 8 Newton .			
Measurement	mm	85×75×23			
Weight	g	350			