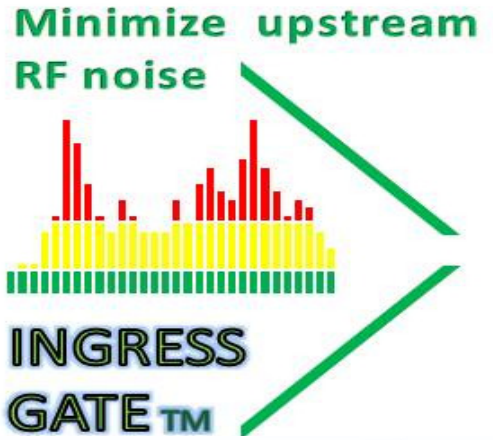
IngressGate™ - Indoor Ingress suppression (patent p)

- ✓ **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.

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How it works?

Safeom'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 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 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.

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

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 [4]		**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**	
Forward (downstream) path						
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 [1]		dBμV		80		85
Noise figure		dB		4.0		4.0
Group delay	Front 1st chl	ns		25		25
	2nd 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	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 [2]	ns		5		5
2nd Inter modulation [2]	Reverse	dBc		-70		-70
	Forward	dBmV		-40		-40
3rd 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			
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	320			
Waterproof		kg/cm²	1			
F port conductor **Gold-plated, beryllium**			360° pin structure，push or pull force≥ 8 Newton 。			
Measurement		mm	85×75×23			
Weight		g	350			

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