



- **4 output customer premises amplifier**
- **Excellent CSO/CTB specifications for downstream signals**
- **Extremely high intermodulation specifications for upstream signals**
- **Complies with EN Class A screening requirements**
- **Excellent RF specifications**



Overview

The FRA-752X is a DOCSIS 3.1 compliant 1.218 MHz high quality in-home amplifier with 4 active outputs. It also has an active return path with 2 dB amplification. It has a 65/85 MHz band-split designed to handle high channel loading with excellent intermodulation performance.

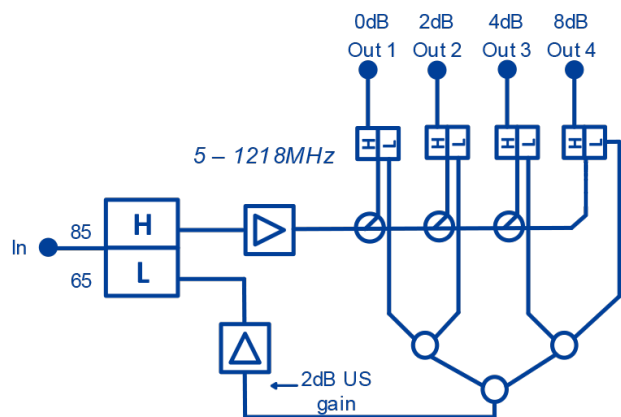
The downstream amplification is incremented per port to support different cable lengths. Modem Safe™ technology protects the amplifier and all connected devices against surge pulses. The high port-to-port isolation and excellent spurious suppression capabilities prevent high level modem signals interfering with radio or TV signals.

This amplifier is designed for applications requiring graduated gain configurations.

Modem Safe™

Modem Safe is a highly effective surge protection solution for sensitive network and in-home CPE. Based on passive circuits, the technology does not rely on discharge tubes, extending the lifespan of the solution.

- Blocks high and low voltage pulses and unwanted DC voltages
- Prevents internal ferrites within the product from becoming magnetised (avoiding deterioration in the performance of CPE)
- Drives fewer reported faults
- Improves customer service
- Reduces truck rolls





Description		MHz	Min	Max	Typ
Frequency range	Forward path	85 - 1218			
	Return path	5 - 65			
Return loss (dB) ¹	In	5 - 65	18.0		
		85 - 1218	18.0		
	Port 1,2,3,4	5 - 65	18.0		
		85 - 1218	18.0		
Isolation (dB)	Port -> Port	5 - 10	22.0		
		10 - 15	30.0		
		15 - 65	35.0		
		85 - 862	26.0		
		882 - 1218	25.0		
Ripple (dB)	Forward path	85 - 120		+/-1.0	
		120 - 1000		+/-0.75	
		1000 - 1218		+/-1.5	
	Return path	5 - 65		+/-1.0	
Gain (dB)	In -> port 1	85 - 1218			0.0
	In -> Port 2				2.0
	In -> Port 3				4.0
	In -> Port 4				8.0
	Port 1,2,3,4 -> In		5 - 65		
Noise figure (dB) ^{2,3}	Forward path	85 - 120		7.0	6.0
		120 - 1218		6.0	5.0
	Return path	5 - 65		18.0	14.0
Nominal Input Level				77dBµV	
Forward Path Distortion	CSO@(77+Gain)dBµV ⁴			-63dBc	
	CTS@(77+Gain)dBµV ⁵			-63dBc	
Reverse Path Distortion (in band) ⁶	Second order IMA (2-tone) @115dBµV input			-50dBc	
	Third order intermodulation distortion (2-tone)@115dBµV input			-50dBc	
Spurious / Oscillation ⁷		5 - 65		20dBµV	
		85 - 1218			
Group delay ⁸	2MHz	5 - 10		30ns	
	2MHz	10 - 65		10ns	
	4.43MHz	85 - 120		20ns	
	4.43MHz	120 - 1218		10ns	
Surge Protection ⁹	On input		1KV		
Galvanic Isolation 2120V DC ¹⁰	Inner conductor input -> Inner conductor Output			0.7mA	
Galvanic Isolation 230V AC ¹¹	Inner conductor input -> Inner conductor Output			8.0mA RMS	
Screening Effectiveness ¹²	Class A	5-30	85dB		
		30-300	85dB		
		300-470	80dB		
		470-1218	75dB		
Connectors	In / Port 1,2,3,4	F-female			
	Power	Via F-Female connector			
Material	Housing	Aluminium die-cast, conductive chromate finish			
	F-spring	NiSn plated Beryllium copper			
Temperature range (°C)	Operating	0°C to +40°C			
Power Consumption		2 Watt			

Remarks

1	Where frequency is above 40 MHz, deduct 1.5 dB/octave
2	From input to port 1,2,3,4 (downstream)
3	From port 1,2,3,4 to input (upstream)
4	IEC 60728-3 §4.2.3
5	IEC 60728-3 §4.2.2
6	IEC 60728-3 §4.8
7	To be measured on all in and output ports. All ports terminated. Measuring method – spectrum analyser, no additional signals connected
8	IEC 60728-3 §5.9
9	IEC 60728-3 §5.9
10	IEC 60728-11 §10
11	IEC 60728-11 §10
12	IEC 60728-2

Order Details

Itemcode	Legacy Code	Information
19008723	FRA-752X	Includes a cover and a power supply.
19011515	POWER SUPPLY	Power supply for FRA-752X

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