

FRA-722/N



- **4 output customer premise amplifier**
- **Levelled amplification of downstream signals per port to support similar cable lengths (+4 dB)**
- **Excellent CSO/CTB specifications for downstream signals**
- **Extremely high intermodulation specifications for upstream signals**
- **Complies with EN Class A screening requirements**
- **Input Modem Safe™ surge protection**
- **Excellent RF specifications**
- **Very low power consumption: <2.5 Watts**



Overview

The FRA-722/N is a 4 output high quality home amplifier with active return path for systems with a 65/85 MHz bandsplit. Designed to handle high channel loading with excellent intermodulation specifications, this amplifier offers “future proofing” for the transfer of digital TV channels.

The downstream amplification is levelled per port to support similar 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 flexible applications requiring levelled 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

		MHz	Min	Max	Typ
Frequency	Forward path	85 - 862			
	Return path	5 - 65			
Return loss ¹	In	5 - 10	18.0		
		10 - 65	20.0		
	Port 1,2,3,4	85 - 862	20.0		
		5 - 65	20.0		
Isolation	RF = IN to outputs	5 - 65	35.0		40.0
	Outputs - RF - In	85 - 862	26.0		
	Port -> Port	5 - 10	26.0		
		10 - 65	35.0		
Ripple	Forward path	85 - 120		+/-1.0	
		120 - 862		+/- 0.5	
	Return path	5 - 60		+/-0.5	
		60 - 65		+/-7.5	
Gain	In -> Port 1	85 - 862	3.5	4.5	
	In -> Port 2		3.5	4.5	
	In -> Port 3		3.5	4.5	
	In -> Port 4		3.5	4.5	
	Port 1,2,3,4 -> In	5 - 65	1.0	2.0	
Noise figure ^{2,3}	Forward path	85 - 120		9.0	6.0
		120 - 862		7.0	5.0
	Return path	5 - 65		18.0	14.0
Intermodulation	Forward path ⁴	IM-2 (Port 4)			-86.0
		IM-3 (Port 4)			-100.0
	Return path ⁵	IM-2		-75.0	-86.0
IM-3			-58.0	-61.0	
Channel loading ⁶	CTB			-72.0	-75.0
	CSO			-80.0	-88.0
Spurious ⁷		85 - 108		-100.0	-105.0
		120 - 130		-100.0	-105.0
		130 - 862		-100.0	-110.0
Screening efficiency ⁸		5 - 30	85.0		
		30 - 300	85.0		95.0
		300 - 470	80.0		90.0
		470 - 862	75.0		85.0
Group delay (ns, max) ^{9,10}	In -> Port 1,2,3,4	85 - 91.5		15	10
	Input -> Output	91.5 - 862		10	5
	Port 1,2,3,4	5 - 65		10	5
Supply voltage DC (VDC)			12 VDC		
Power consumption			2.5 W		
Galvanic isolation 2120 V DC ¹¹	Inner conductor Input		0.7 mA		
	Inner conductor each port		0.7 mA		
Galvanic isolation 230 V AC ¹¹			8 mA		
Surge class conformance ¹²			1 kV 1.2/50 µs		
Connectors ¹³	In / Port 1,2,3,4		F-female		
	Power		DC jack Male type		
Material	Housing		Nickel plated Zinc die-cast		
	F-spring		Tin plated beryllium copper		
Temperature range (°C)	Operating		0°C to +40°C		
Impedance (Ohm, typ)			75		
Dimensions (mm)	L x H x D		120.0x110.0x40.0		
Equipment approval	CE				

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	IM-2 standard two tone test, IM-3 standard three tone test (DIN45004), 80 dBµV input level.
5	IM-2 standard two tone test, IM-3 standard three tone test (DIN45004)@ 115 dBµV at input
6	CENELEC 42 ch. @80 dBµV on the input
7	F1+F2 w.r.t. F1 and F2 @ 115 dBµV at input port, after 10 pulses 25Vdc (rise time 1,2µS /500µS duration) at all ports
8	Tested according to EN 50083-2 2006
9	dF= 4,433 MHz
10	dF=2 MHz
11	IEC-60728-11§10 / EN 50083-1/A1 §9 Safety Requirement: 2120 VDC T _≥ 1 minute, I ≤ 0,7 mA, 230 VAC I ≤ 8,0 mA RMS
12	Modem Safe circuit. IEC-1000-4-5 level 2: 1KV pulse (rise time 1,2 µS/ fall time 50 µS). No degradation allowed.
13	IEC-60728-11§10 / EN 50083-1/A1 §9 Safety Requirement: 2120 VDC T _≥ 1 minute, I ≤ 0,7 mA, 230 VAC I ≤ 8,0 mA RMS

Measurements taken at room temperature

Ordering information

Item Name	Article number
FRA-722/N	TBC