E3 COMPACT AMPLIFIER

Features

- 1.2 GHz 2nd generation GaN technology
- Return path supports 204 MHz bandwidth
- RFF feature helps in return path alignment
- Electrical adjustments with push buttons and display
- Electrical gain and slope mode selections
- Power save operation mode
- Intelligent cable simulator at input
- Intelligent return path re-alignment
- Optional PC, tablet or smartphone control via Bluetooth or USB
- Optional RIS receiver (E61) for remote ingress switch control
- Excellent ESD and surge protection

Technical specifications

Downstream signal path

Frequency range	85…1218 MHz	
Return loss	20 dB	1)
Maximum gain	42.0 dB	2)
Gain control range	-26…0 dB	3)
Input equaliser control range	0…20 dB	3)
Cable simulator	0 / -13 dB	
Mid-stage slope	13 / 0 dB	4)
Flatness	± 0.5 dB	5)
Test point	20 dB	6)
Group delay	2 ns	
Noise figure	8.5 dB	7)
$U_{max(112\ QAM\ channels)}$ @1.0 GHz	113.5 dBµV	8)
$U_{max(138\ QAM\ channels)}$ @1.2 GHz	110.5 dBµV	9)
CINR	See curves	10)
CTB 41 channels	116.5 dBµV	11)
CSO 41 channels	116.5 dBµV	11)

Upstream signal path

Frequency range	5...204 MHz	
Return loss	18 dB	12)
Gain	28 dB	
Gain control (output)	-20…0 dB	13)
Gain control (input)	0 / -10 dB	
Ingress switching	0 / -6 / < -40 dB	
Slope control range	0…15 dB	14)
Flatness	± 0.5 dB	
Noise figure	< 6.0 dB	15)
CINR	See curves	16)

General

Supply voltage	27...65 / 205…255 Vac	
Power consumption	17 /14 W	17)
Maximum current feed through	7 A / port	
Hum modulation	70 dB	18)
Input / Output connectors	F- female, other types available	
Test point connector	F- female	
Dimensions	18.5(21.5) x 16.0(19.0) x 7.5 cm	
Weight	1.5 kg	
Operating temp	-40...+55 °C	
Class of enclosure	IP54	19)
EMC compatibility	EN 60728 -2	
Safety	EN 60728 -11	
ESD	4 kV	20)
Surge	6 kV (EN 60728-3)	

Notes

1) The limiting curve is defined at 40 MHz -2.0 dB / octave. Always better than 12 dB.

2) This is a nominal gain in room temperature at highest frequency. Gain is defined with 2 diplex filters and 0 dB output module. Guaranteed gain is 41.0 dB.

3) Electrical control with 0.5 dB step.

4) Nominal slope 13 dB is defined between 85…1218 MHz.
1st generation amplifiers have selectable slope between 13 and 0 dB.
2nd generation amplifiers have adjustable slope between 0…15 dB. Step size is 1 dB.
These can be ordered by selecting 1-1:C or D. Availability earliest in Q2/2018.

5) Typical value. The guaranteed value is ±0.9 dB. Flatness is defined with nominal settings, diplex filters and 0 dB output module. Specification is valid 5 MHz after the starting frequency of the selected diplex filter.

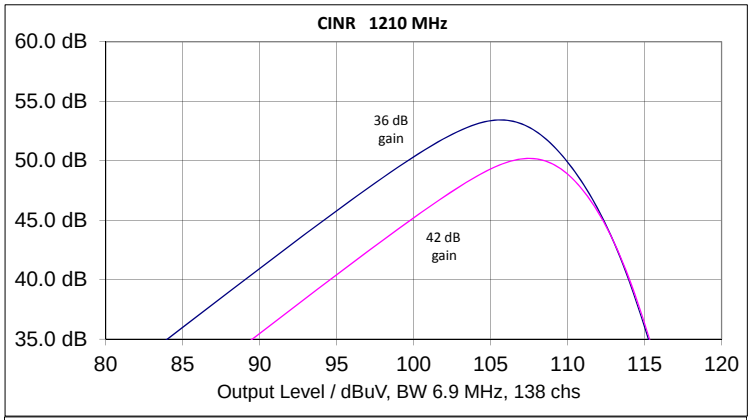
6) Output TP has a tolerance of ±0.75 dB between 85…1006 MHz and ±1.0 dB between 1006…1218 MHz. The TP is defined with 0 dB plug at output. Input TP is a transformer type with ±1.5 dB tolerance.

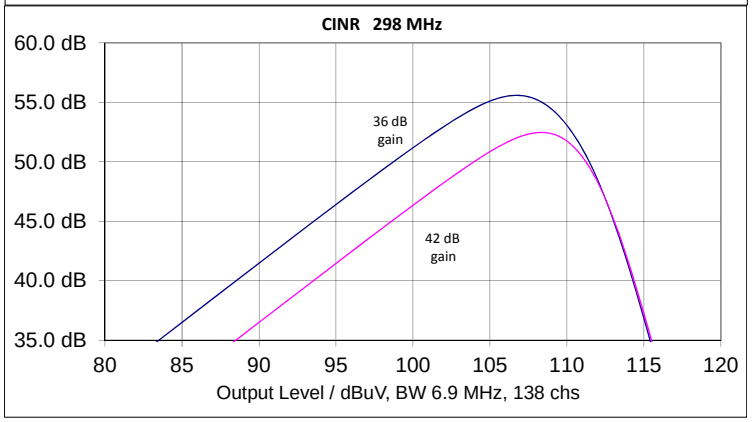
7) Typical value with nominal settings. Guaranteed value is 1.0 dB worse.

8) Typical value according to IEC60728-3. Nominal slope in use and signal level has been defined at 1002 MHz. BER measurement has been done on the worst channel between 110…1006 MHz. In power save mode output level is reduced 1 dB.

9) Typical value according to IEC60728-3. Nominal slope in use and signal level has been defined at 1210 MHz. BER measurement has been done on the worst channel between 110…1218 MHz. In power save mode output level is reduced 1 dB.

10) CINR according to IEC60728-3. Full digital loading up to 1218 MHz.





11) According to IEC60728-3. Tested with nominal gain and slope. Signal level is defined at 862 MHz. All results are typical values in room temperature.

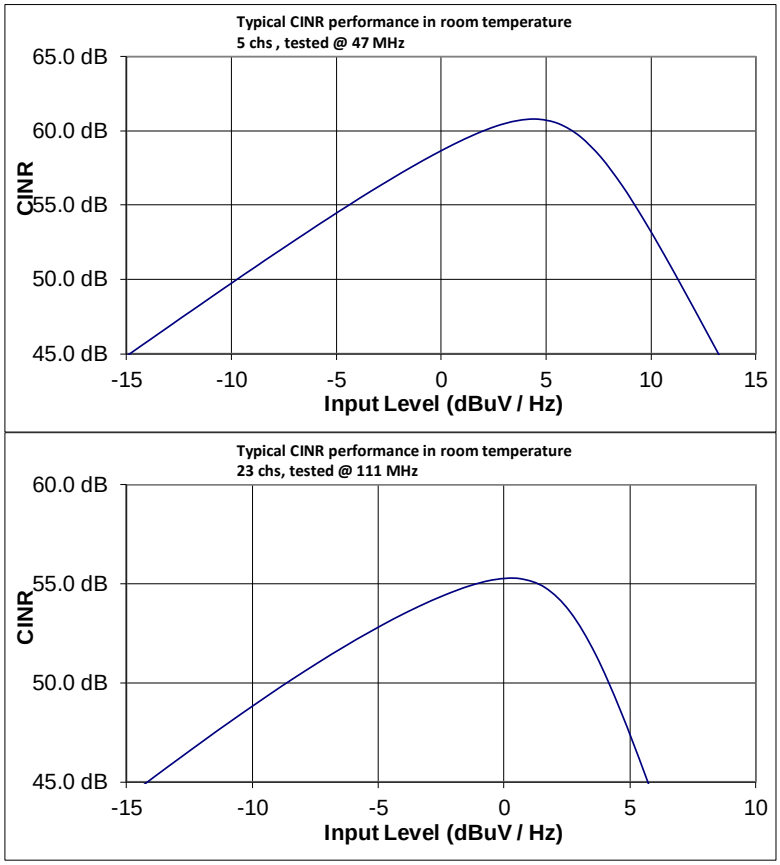
12) 8 < f < 80 MHz, f > 80 MHz -1.5 dB / octave.

13) Electrical control with 0.5 dB step.

14) Electrical control with 0.5 dB step. Pivot point of slope control is set automatically based on selected diplexers to either 85 MHz or 204 MHz.

15) Guaranteed value is 1 dB worse.

16) CINR according to IEC60728-3.



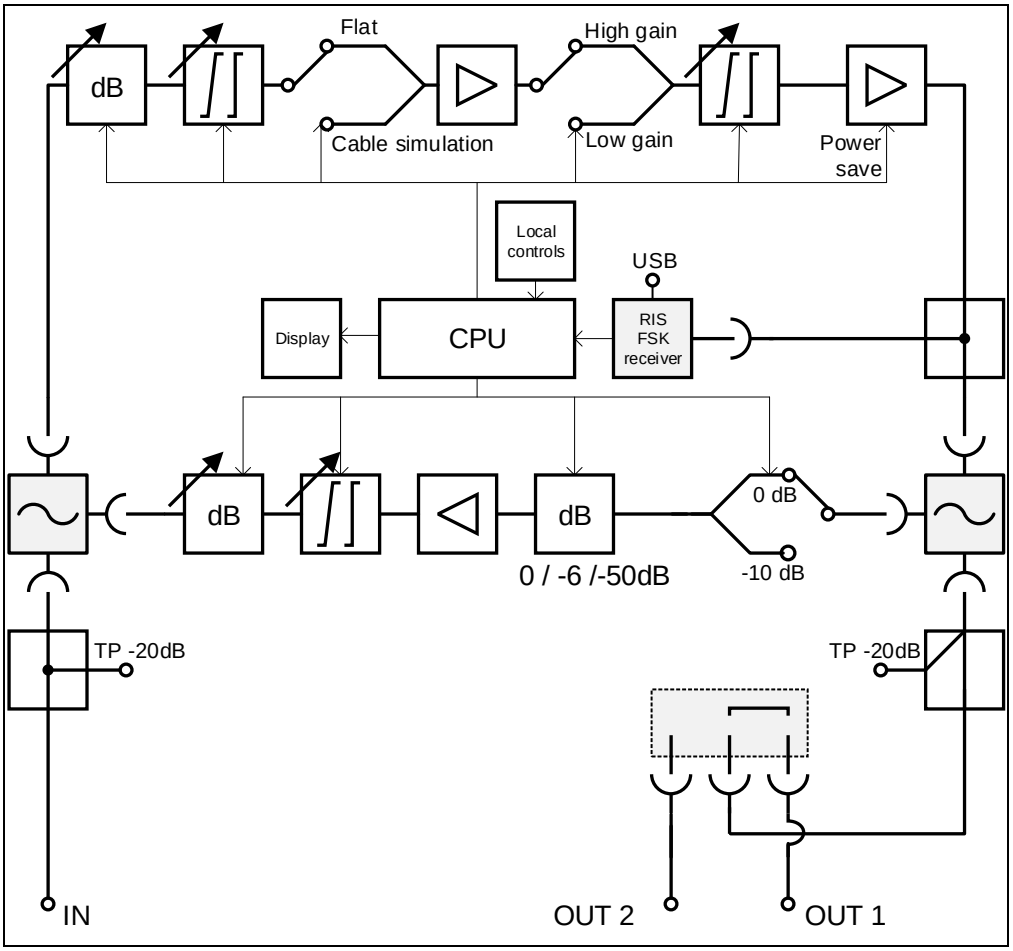
17) Without an RIS receiver.
Power consumption is reduced 3.0 W in Power Save mode.

18) At any frequency from 15 to 1218 MHz when the remote current is less than 6 A. HUM is defined for one port.

19) The housing is tested to be class of IP67. However, in delivery condition the lowest side wall is equipped with a 1 mm ventilation hole.

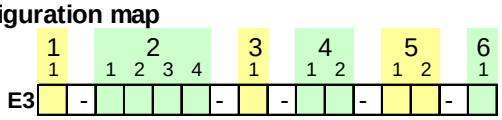
20) EN61000-4-2, contact discharge to enclosure and RF-ports.

Block diagram



Ordering

E3 configuration map



1-1 Gain and power supply

A	42 dB , 65 VAC PSU
B	42 dB , 230 VAC PSU
C	Customer specific option
D	Customer specific option

2-1 Input connection (first from left)

A	PG11
B	5/8"
C	IEC
D	3.5/12
E	F

2-2 2nd port from left

X	None (PG11sealing plug)

2-3 Output 2 connection

A	PG11
B	5/8"
C	IEC
D	3.5/12
E	F
X	None (PG11sealing plug)

2-4 Output 1 connection (first from right)

A	PG11
B	5/8"
C	IEC
D	3.5/12
E	F

3-1 Diplexers

A	65/85 MHz (2 x CXF065)
B	85/105 MHz (2 x CXF085)
C	204/258 MHz (2 x CXF204)
D	204/258 MHz (1x CXF204)
E	65/85 MHz (CXF065 +CXF065 10)
F	65/85 MHz (CXF065 +CXF065 19)
X	None

4-1 Output module

A	0 dB (AC6120)
B	Splitter (AC6124)
X	None

4-2 RIS module

A	E61
X	None

5-1 Software

A	Factory default
B	Customer specific

5-2 Settings

A	Factory default

6-1 Customer specific selections

B	Customer specific option
C	Ventilation hole closed
X	None

DOC0032279, Rev007