



# MAXNET® II

Platinum Series

## RF Management



Patented  
U.S.# 7,142,414

3RU Active Chassis  
(front view)

### Active Amplifiers & RF Switches Forward Path Amplifiers

#### Features

- 3RU rack mount high performance RF distribution amplifiers
- New: All digital series amplifiers for QAM only systems with 1 or 1.218 GHz options and up to 40 dB gain & GaN technology
- GaN technology typically supports 3 dB more RF output level than GaAs for same wattage (heat/power) & distortion performance
- Front access input & output RF test points (MCX)
- Front access to pad & EQ locations

D3.1/CCAP™  
Compliant

1.2 GHz

- Front LED indications of power & alarm status
- Remote monitoring & control via HMS compliant SNMP v2c and/or web browser with email alarm notification support - no additional cost or custom software
- Amplifier modules take up 2 slots in MAXNET® II chassis (total of 24 slots)

#### Specifications

##### All Digital Forward Amplifier

PART NUMBER	GAIN			SLOPE CONTROL <sup>(1)(2)</sup>	GAIN CONTROL		TEST POINTS <sup>(1)(4)</sup>	RETURN LOSS	DIGITAL PERFORMANCE <sup>(3)</sup> (MOSTLY DIGITAL)		NOISE FIGURE	OPERATING CURRENT <sup>(2)</sup>	TECHNOLOGY
	BW (MHz)	GAIN ± 1 (dB)	FLATNESS (dB)	PLUG-IN JXP	DIGITAL	I/O (dB)			I/O (dB)	REC. QAM OP (dBmV / 6 MHz) <sup>(5)</sup>			
QMP1000-35GPF	50-1002	35	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	15	39	- 2	< 5	540	GaAs
QMP1000-35PF	50-1002	35	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	15	42	- 2	< 5	570	GaN
QMP1000-40PF	50-1002	40	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	15	39	- 2	< 5	540	GaN
QMP1218-35GPF	50-1218	35	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	14.5	39	- 2	< 5	570	GaAs
QMP1218-35PF	50-1218	35	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	14.5	42	- 2	< 5	570	GaN
QMP1218-40PF	50-1218	40.5	< 1	IS	IP + IS	0-31.5 dB, 0.5 dB steps	20 +/- 1	14.5	42	- 2	< 5	540	GaN

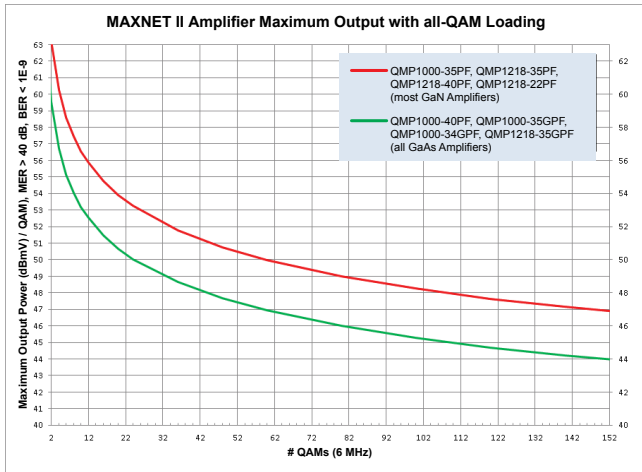
#### NOTES:

- (1) See functional schematics.
- (2) Load current at +24 VDC.
- (3) Recommended per channel output level based on 150x 6 MHz QAMs with up to four analog channels at 6 dB above these levels. Maximum output levels in graph are stated as the point at which 40 dB MER is approached yet pre-FEC BER of 256 QAM <1E-9. ATX recommends operating 2 dB below these levels to account for even doubling of amplifiers in cascade and another 3 dB for margin for a total of 5 dB de-rating from maximum. If 43 dB headend MER is the target instead of 40 dB, derate amplifier output by a further 2 dB. Note that under same test conditions of all digital loading, the legacy QMP1000-34GPF series amplifier performs same as new QMP1000-35GPF.
- (4) See chart for other maximum output ratings for the number of QAM channels.
- (5) Linear or cable tilt values 2-20 dB (can be ordered separately), see page 4.
- (6) Output TP is relative to RF Out. Input TP is relative to true input to first stage of amplifier, not to RF Input of module. There will be a negative slope if measured relative to RF Input because the input circuitry before amplifier stage (see schematic) has this slope.

#### OTHER NOTES:

IS = Interstage; IP = Input; OP = Output  
 All testing specified with 0 dB attenuators & EQ unless otherwise noted.  
 All digital amplifiers are offered in F connector I/O only, with MCX front test points.  
 Minimum/maximum composite RF detection level is 20.5/80 dBmV.

Operating temperature: 0°C to +50°C (+32°F to +122°F)  
 Humidity: 5-95% (without condensation)  
 Dimensions: 4.9"H x 1.4"W x 10.5"D (12.45H x 3.56W x 26.67D cm)  
 Weight: 2.43 lbs (1.1 kg)



## Ordering Information

Part Number	Description
<b>Digital Amplifier</b>	
<b>QMP1000-35GPF</b>	1002 MHz, 35 dB, GaAs PD, F Connectors
<b>QMP1000-35PF</b>	1002 MHz, 35 dB, GaN PD, F Connectors
<b>QMP1000-40PF</b>	1002 MHz, 40 dB, GaN PD, F Connectors
<b>QMP1218-35GPF</b>	1218 MHz, 35 dB, GaAs PD, F Connectors
<b>QMP1218-35PF</b>	1218 MHz, 35 dB, GaN PD, F Connectors
<b>QMP1218-40PF</b>	1218 MHz, 41 dB, GaN PD, F Connectors

## Specifications

### Forward RF Amplifier (GaAs)

PART NUMBER <sup>(6)</sup>	GAIN		GAIN & SLOPE CONTROL <sup>(1)</sup>	TEST POINTS	RETURN LOSS <sup>(5)</sup>	DISTORTION PERFORMANCE <sup>(3,4)</sup>			NOISE FIGURE <sup>(4)</sup>	OPERATING CURRENT <sup>(2)</sup>
	BW (MHz)	GAIN ± 1 (dB)	PLUG-IN MP*PAD/EQ	I/O (dB)	I/O (dB)	OUTPUT LEVEL (dBmV)	CTB (-dB)	CSO (-dB)	(dB)	(mA)
<b>QMP1000-17GP</b>	50-1002	17	IP + OP	20 +/- 1	16/15	43	74	72	6	470
<b>QMP1000-21GP</b>	50-1002	21	IP + OP	20 +/- 1	16/15	43	74	72	6	470
<b>QMP1000-17GPF</b>	50-1002	17	IP + OP	20 +/- 1	16/15	43	74	72	6	470
<b>QMP1000-21GPF</b>	50-1002	21	IP + OP	20 +/- 1	16/15	43	74	72	6	470
<b>QMP1000-28GP</b>	50-1002	28	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540
<b>QMP1000-31GP</b>	50-1002	31	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540
<b>QMP1000-34GP</b>	50-1002	34	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540
<b>QMP1000-28GPF</b>	50-1002	28	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540
<b>QMP1000-31GPF</b>	50-1002	31	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540
<b>QMP1000-34GPF</b>	50-1002	34	IP + IS	20 +/- 1	16/15	43	74	72	6.5	540

#### NOTES:

- See functional schematics.
- DC load current at +24 VDC.
- 79 CW NTSC analog channels from 54-550 MHz with 320 MHz QAM loading 6 dB below analog carrier levels.
- All testing specified with 0 dB pads & EQs unless otherwise noted.
- Return loss is 15 dB (min) from 870-1000 MHz.
- GP = MCX connectors; GPF = F connectors.

#### OTHER NOTES:

IS = Interstage; IP = Input; OP = Output  
 Minimum/maximum composite RF detection level is 20.5/80 dBmV.  
 Operating temperature: 0°C to +50°C (+32°F to +122°F)  
 Humidity: 5-95% (without condensation)  
 Dimensions: 4.9"H x 1.4"W x 10.5"D (12.45H x 3.56W x 26.67D cm)  
 Weight: 2.43 lbs (1.1 kg)

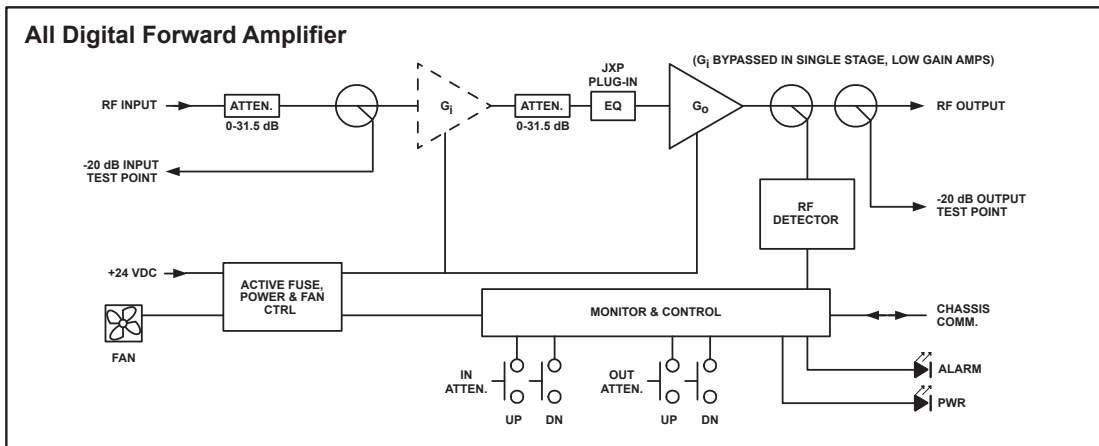
## Ordering Information

Part Number	Description
<b>Single Stage Forward Amplifier</b>	
<b>QMP1000-17GP</b>	1002 MHz, 17 dB GaAs Single Stage, MCX Connectors
<b>QMP1000-21GP</b>	1002 MHz, 21 dB GaAs Single Stage, MCX Connectors
<b>QMP1000-17GPF</b>	1002 MHz, 17 dB GaAs Single Stage, F Connectors
<b>QMP1000-21GPF</b>	1002 MHz, 21 dB GaAs Single Stage, F Connectors
<b>Dual Stage Forward Amplifier</b>	
<b>QMP1000-28GP</b>	1002 MHz, 28 dB GaAs Dual Stage, MCX Connectors

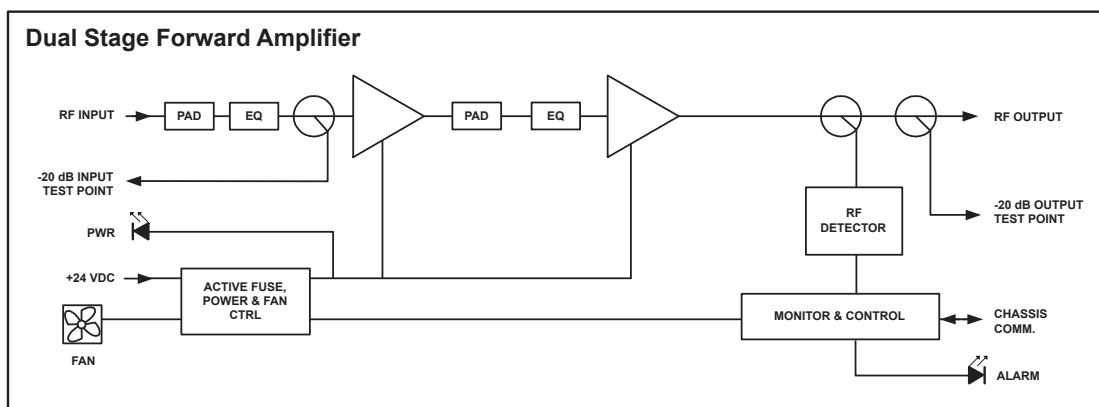
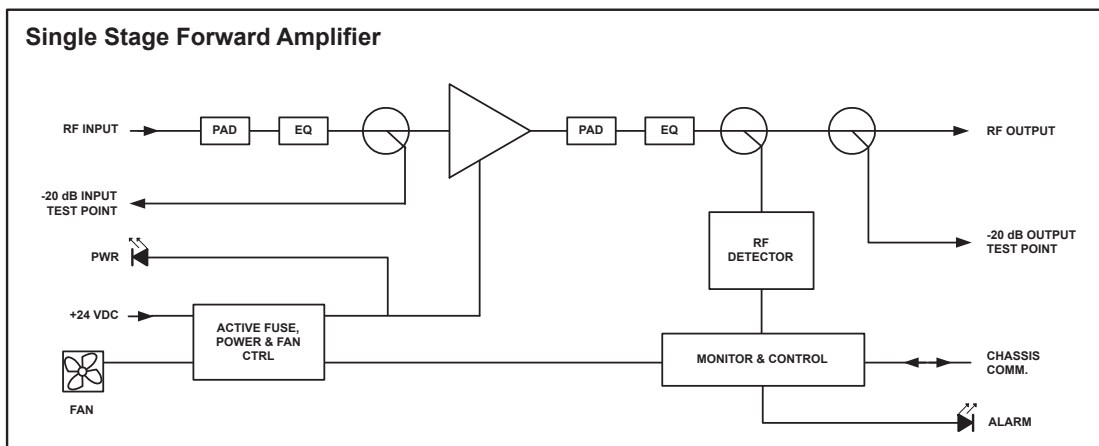
Part Number	Description
<b>Dual Stage Forward Amplifier (cont'd)</b>	
<b>QMP1000-31GP</b>	1002 MHz, 31 dB GaAs Dual Stage, MCX Connectors
<b>QMP1000-34GP</b>	1002 MHz, 34 dB GaAs Dual Stage, MCX Connectors
<b>QMP1000-28GPF</b>	1002 MHz, 28 dB GaAs Dual Stage, F Connectors
<b>QMP1000-31GPF</b>	1002 MHz, 31 dB GaAs Dual Stage, F Connectors
<b>QMP1000-34GPF</b>	1002 MHz, 34 dB GaAs Dual Stage, F Connectors



**Functional Schematic - All Digital Amplifier**

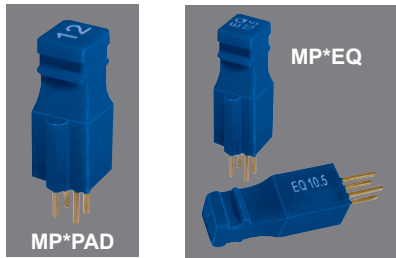


**Functional Schematics - GaAs Amplifiers**



## Plug-in Pads/EQs

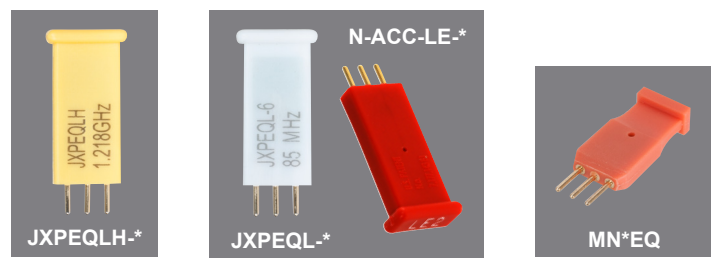
For use in Legacy GaAs Amplifiers



Attenuator Pads

1 GHz Linear EQs

For use in new All Digital Amplifiers



1.218 GHz Linear EQs

1 GHz Linear EQs

1 GHz Cable EQs

\* = Pad/EQ value

Other values may be available. For all Pad/EQ specifications & ordering information, see MAXNET II Accessories data sheet (#ANW0618)

## Replacement Fan

- Front access replacement fan



## Ordering Information

Part Number	Description
MPFANA	Replacement Fan for MAXNET II Receivers, Power Supplies & Amplifiers

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