

## GaN & GaAs Products & Foundry solutions



Mid band &  
mmw radio  
Fronthaul



Fixed Wireless  
Access  
26, 28, 39GHz



5G Test &  
Measurement



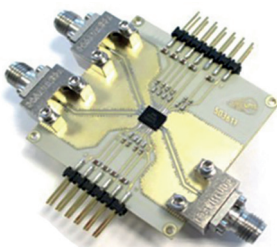
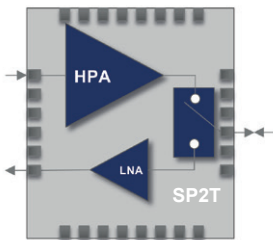
Repeater  
& Indoor



V & E band  
Radio  
Backhaul

## Innovative design

- RF Front-End 24-31GHz
- System in Package (SiP)
- Linear High Power Amplifier
- Very Low Noise Amplifier
- Fast & high isolation switch
- SWaP-C mixed technologies GaAs/GaN in QFN



Surface mount SiP Front-End

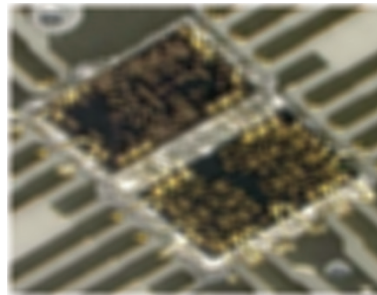
## Technologies

### GaN

- GH15 High power up to 40GHz
- GH25 High power up to 20GHz
- GH50 Power bar 50V to 6GHz

### GaAs

- ULRC passive power process
- PH10 Low Noise up to 100GHz
- PH15 Medium Power & Low Noise up to 90GHz
- PPH15X Power up to 45GHz

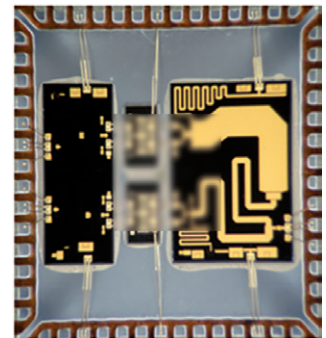


## Package

- QFN from 3x3mm to 8x8mm
- MSL 1, 2, 3

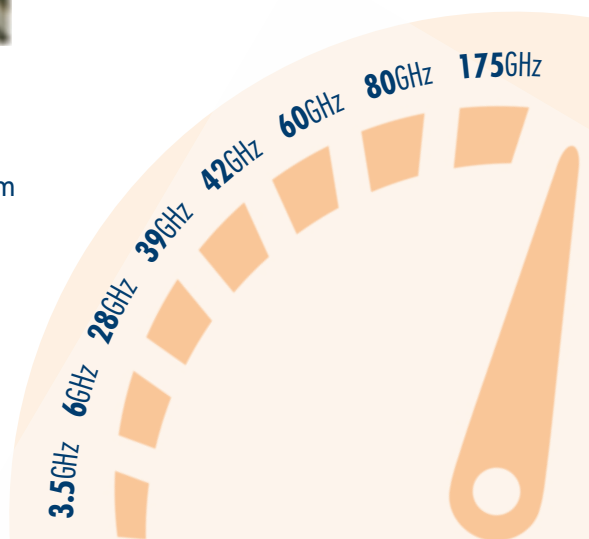
## Products

- Integrated Front-End 26 / 28GHz
- Linear MPA & HPA up to 43.5GHz
- V & E-Band: MPA, LNA, Mixer
- Switches up to 26GHz
- Power detector up to 44GHz



Build your own solution with UMS

[www.ums-gaas.com](http://www.ums-gaas.com)



# Building blocks for your 5G projects

## BUILDING BLOCKS FOR SUB 6GHZ (FR1)

MPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	OP1dB (dBm)
CHA4220-QGG	0.5-20	17	28	20
CHA4105-QDG	2-4	23	-	24
CHA3024-QGG	2-22	15	28	18

GaN Internally matched / unmatched transistors	Freq (GHz)	small signal Gain (dB) @ freq (GHz)	Power(W)	PAE % @ Freq (GHz)
CHK015AaQIA	Up to 6	13@6	15	50@6
CHK8101a99F	Up to 6	14@6	20	60@6
CHK9013-99F	Up to 8	18@6	88	65@6
CHZ8012-QJA	2.6-3.4	16.5	12	54
CHZ9012-QFA	2.7-3.4	16	65	55

## BUILDING BLOCKS FOR 6-8GHZ

HPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	Psat (dBm)
CHA7060-QWA	5.7-8.5	20	46	40

LNA	Freq (GHz)	Gain (dB)	IP3 (dBm)	OP1dB (dBm)
CHA3656-QAG	6-17	20	24	14

MPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	OP1dB (dBm)
CHA4350-QDG	5.5-11.7	26	32	24

GaN Power transistors	Freq (GHz)	Gain (dB) @ Freq (GHz)	Power (W)	PAE % @ Freq (GHz)
CHK8013-99F	Up to 10	17@6	14	70@6

## BUILDING BLOCKS FOR 24-30GHZ (FR2)

RF Front End	Freq (GHz)	Gain RX/ Gain TX (dB)	Pout RX/ Pout Tx (dBm)	NF RX (dB)
CHC6053-QQA	24.25-27.5	18 / 33	10/32.5	3.5

LNA	Freq (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)
CHA3688aQDG	12.5-30	26	2	14
CHA2069-QDG	18-31	20	3	10.5
CHA2362-98F	26-40	22	2	9

MPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	OP1dB (dBm)
CHA3395-QDG	21-29.5	24	32	20
CHA3409-98F	25-45	23	26	19
CHA3396-QDG	27-33.5	22	30	19

Power Detector	Freq (GHz)	Loss (dB)	Dyn. Range(dB)	Type
CHE1260-QAG	10-27	1	30	Bidirection
CHE1270-QAG	10-44	-	30	Wideband

HPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	Psat (dBm)
CHA6652-QXG	21-27.5	20	41	33
CHA6653-QXG	27-33.5	20	38	33

## BUILDING BLOCKS FOR 37-43.5GHZ (FR2)

LNA	Freq (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)
CHA2595-QDG	27.5-43.5	19.5	2.3	11
CHA2494-QEG	34-44	22	3	12

MPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	P-1dB (dBm)
CHA3409-98F	25-45	23	26	19
CHA3397-QDG	36-40.5	21	29	18
CHA3398-QDG	38-43.5	22	29	18

HPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	Psat (dBm)
CHA5659-QXG	36-43.5	20	38.5	30
CHA6194-QXG	37-40	20	38	31

## BUILDING BLOCKS FOR V-BAND

LNA	Freq (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)
CHA2159-99F	55-65	20	4	14

Mixer	Freq (GHz)	Freq LO (GHz)	Conv gain (dB)	IP1dB (dBm)
CHM1298-99F	55-65	27.5-32.5	-12	0

## BUILDING BLOCKS FOR E-BAND

LNA	Freq (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)
CHA2080-98F	71-86	22	3.5	10

MPA	Freq (GHz)	Gain (dB)	IP3 (dBm)	OP1dB (dBm)
CHA3080-98F	71-76	16	25	19
CHA3090-98F	81-86	13	23	17

Mixer	Freq (GHz)	Freq LO (GHz)	Conv gain (dB)	IP1dB (dBm)
CHM1080-98F	71-86	34.5-44	-11	10
CHR1080a98F	71-86	34.5-44	8	-10

Additional building blocks on [www.ums-gaas.com](http://www.ums-gaas.com)

