

MyPower-AMP

Multi-stage integrated MMIC

Rev. 1 - 23 October 2020



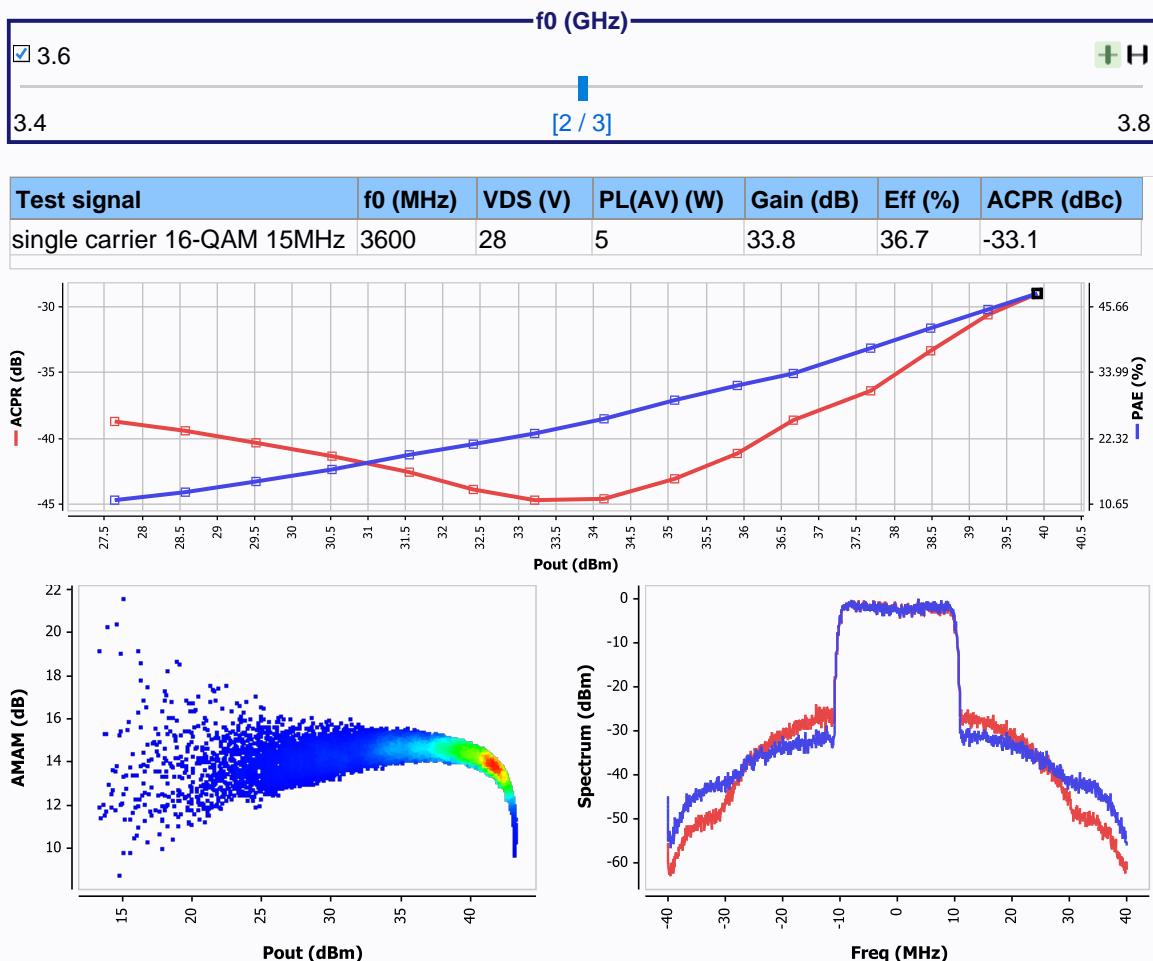
1. Product profile

1.1 General Description

MyPower-AMP is a Multistage fully integrated MMIC solution state of the art technology. The device, inputpre-match are integrated in a single package. This multiband device is perfectly suited as a final stage for small cells and massive MIMO applications in the frequency range from 3400 MHz to 3800

Table 1. Application performance

Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier);



1.2 Features and benefits

- 30 Ohms output impedance thanks to integrated pre-match
- Very high efficiency
- Designed for wideband operation (frequency 3400 MHz to 3800 MHz)
- Integrated ESD protection
- Source impedance 50 Ohms; high power gain

1.3 Applications

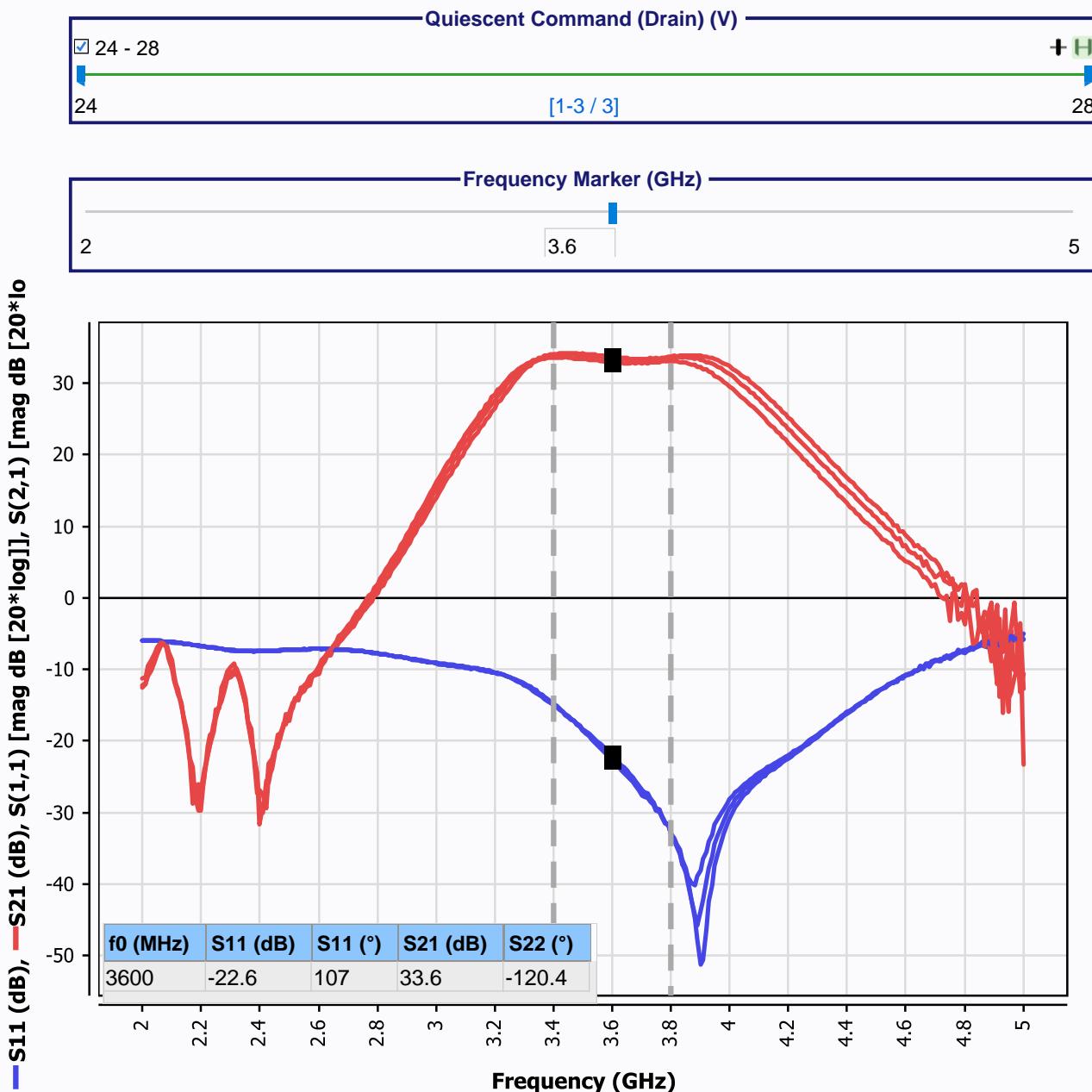
- RF power MMIC for multi-carrier and multi-standard 5G base stations in the 3400 MHz to 3800 MHz frequency range

2. RF Characteristics

2.1 Small signal Characteristics

Graph 2. S-parameters Characteristics

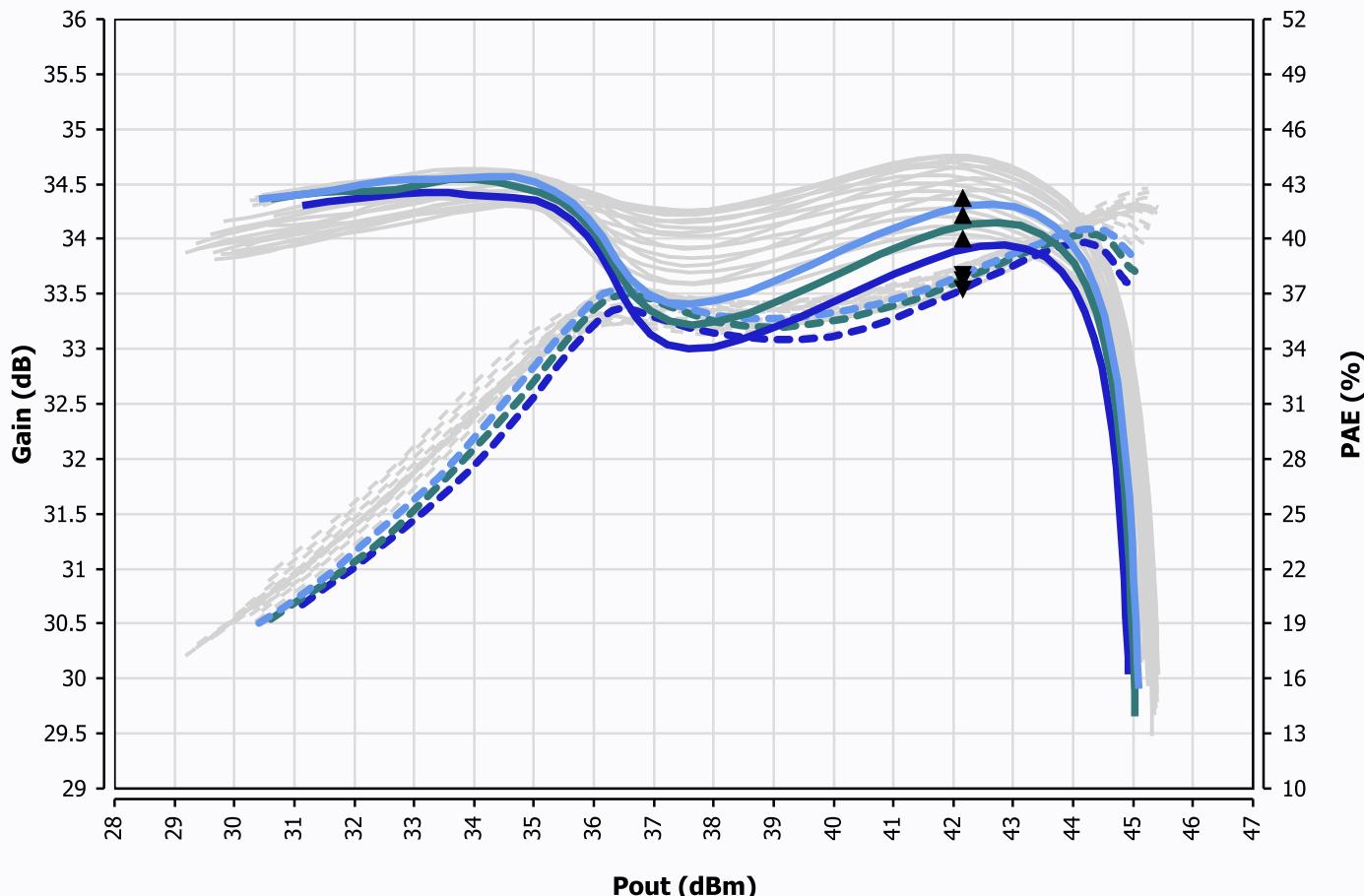
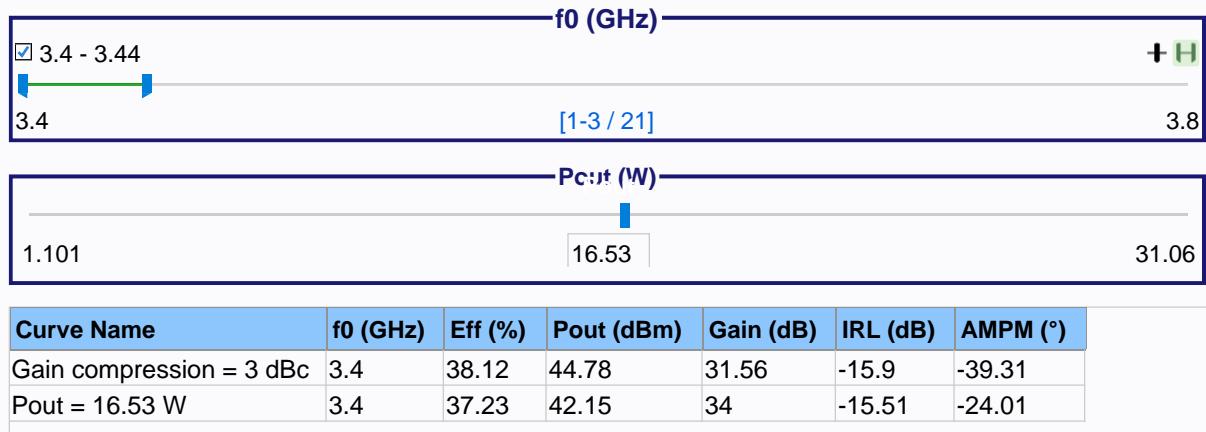
Typical SP performance at $T_{case}=25^{\circ}\text{C}$; $ID_q = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;
Test signal: CW Pin = -20dBm



2.2 Large signal Characteristics

Graph 3. Pulsed CW Characteristics

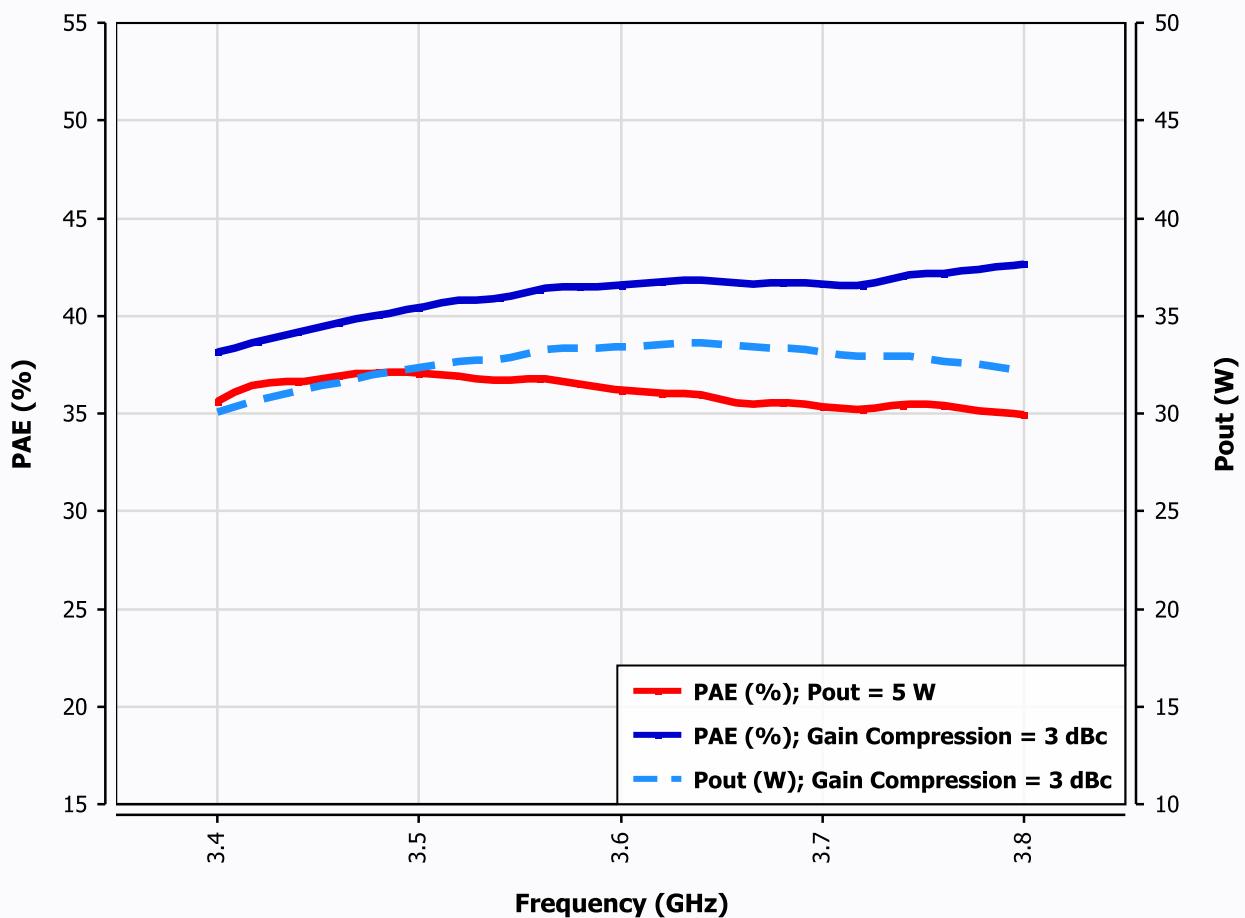
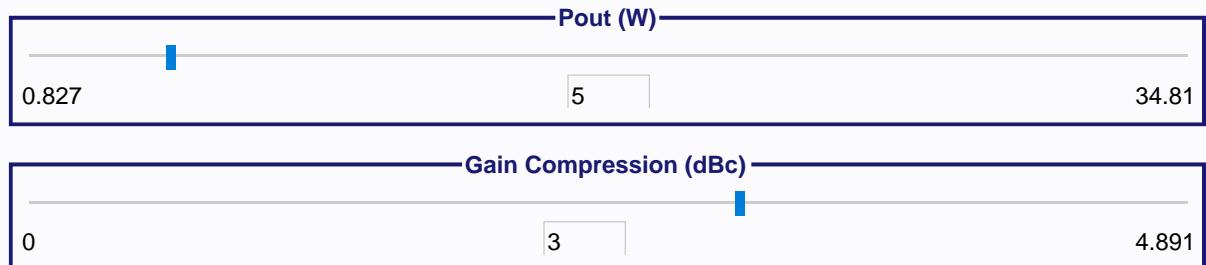
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $ID_q = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;
Test signal: Pulsed CW power sweep (duty-cycle=10%, $T=100\text{usec}$)



2.2 Large signal Characteristics .vs Frequency

Graph 4. Pulsed CW Characteristics vs Frequency

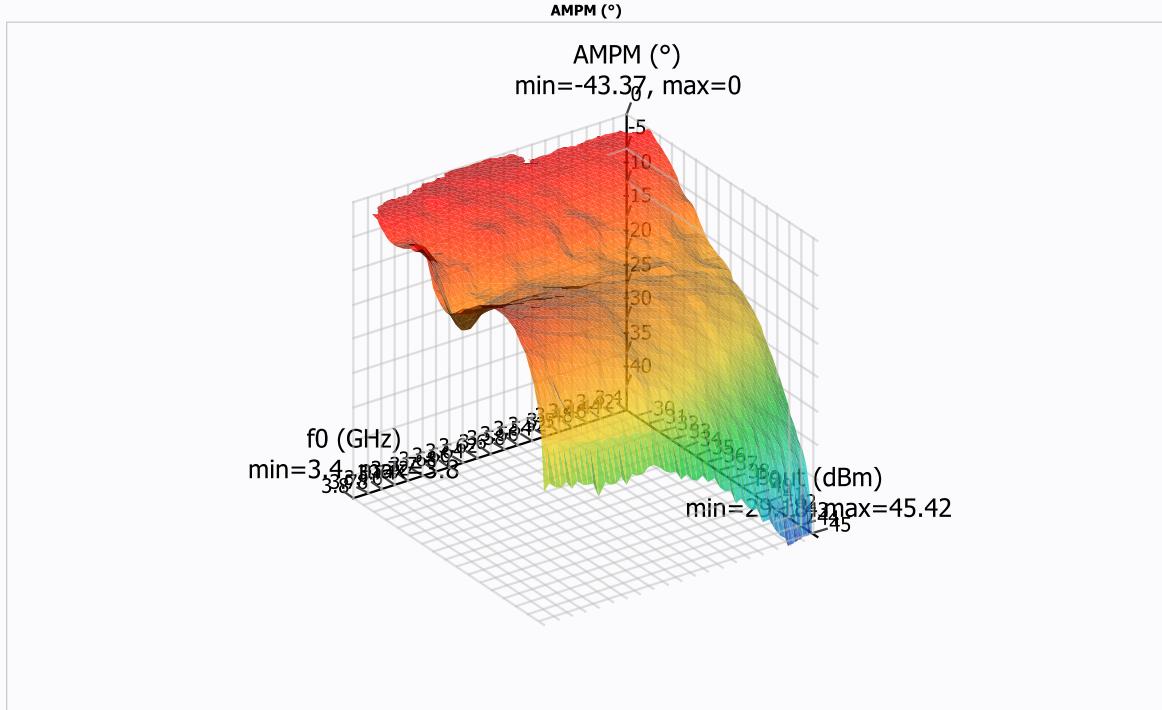
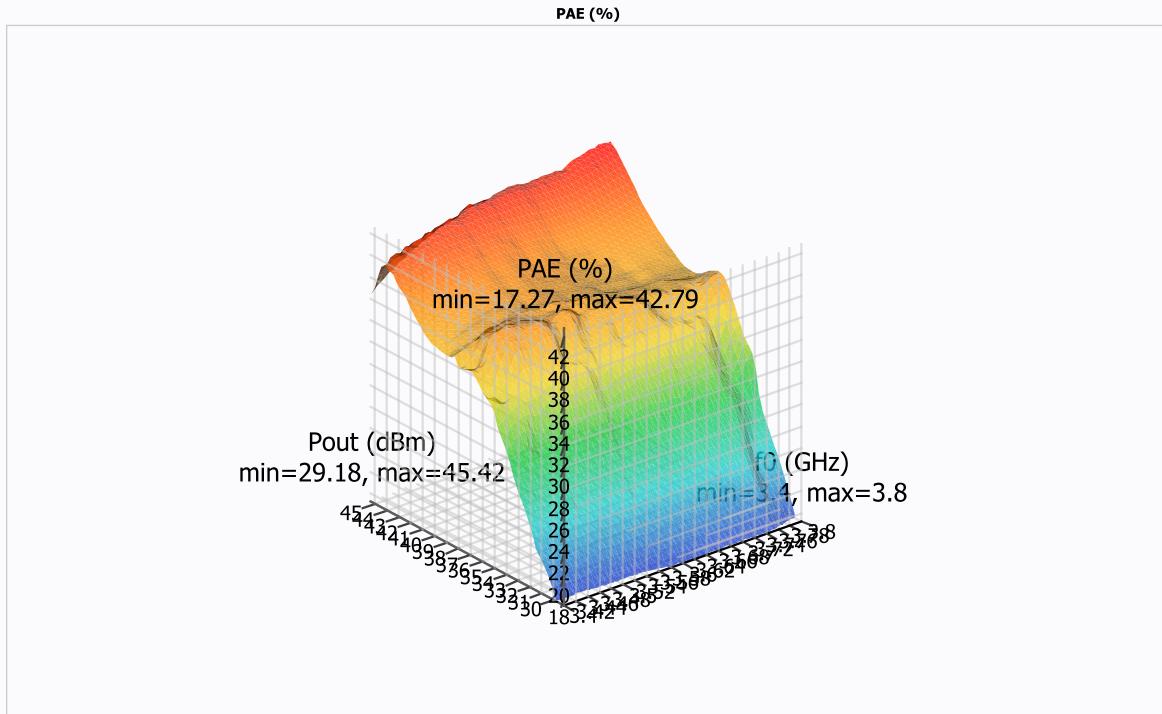
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;
Test signal: Pulsed CW power sweep (duty-cycle=10%, $T=100\text{usec}$)



2.2 Large signal Characteristics .vs Frequency 3D

Graph 5. Pulsed CW Characteristics 3D

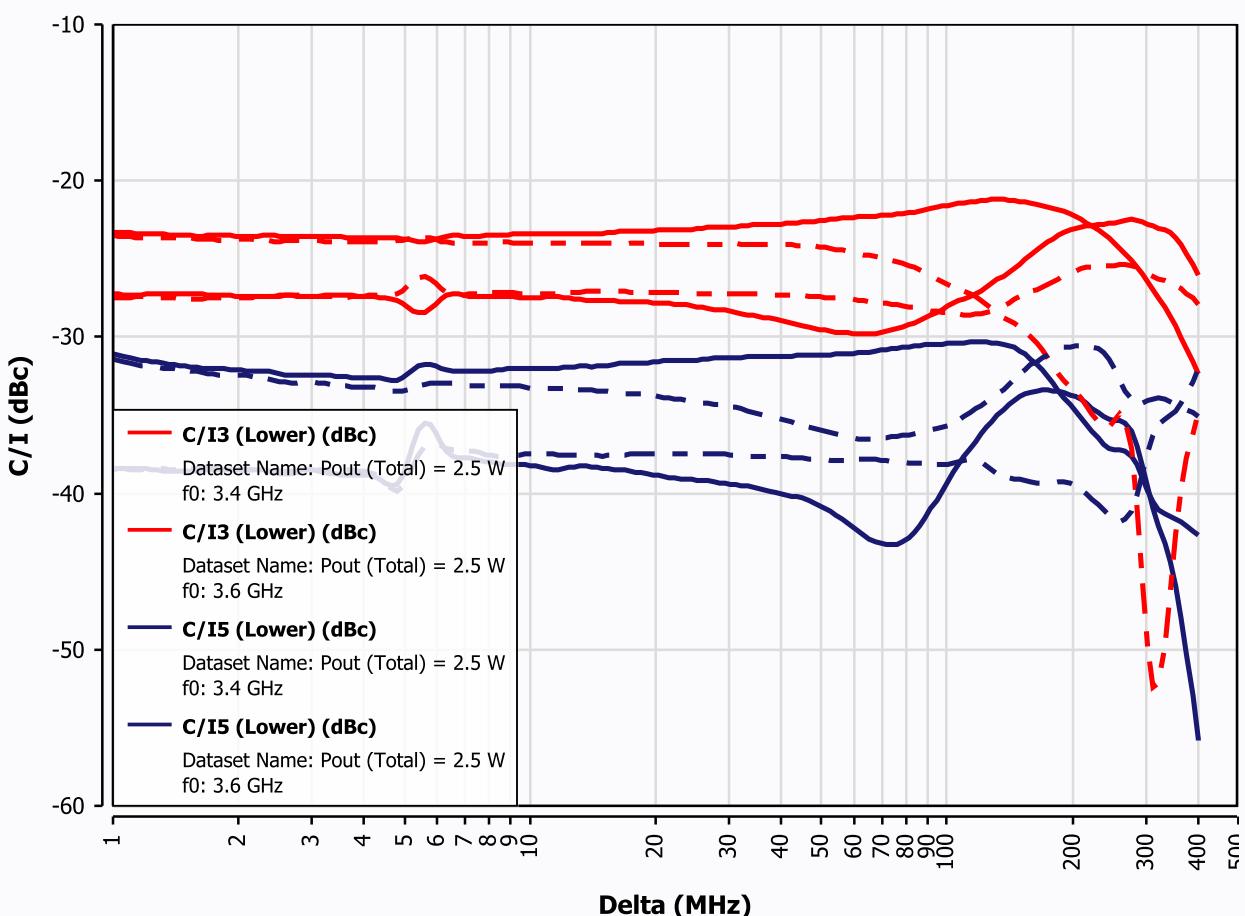
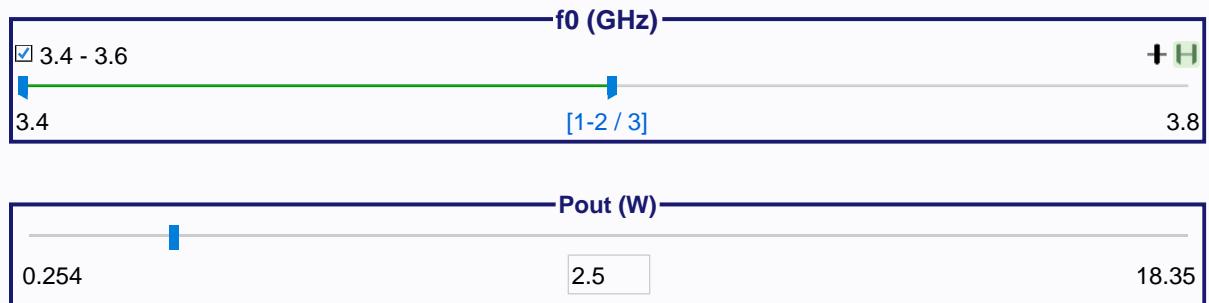
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;
Test signal: Pulsed CW power sweep (duty-cycle=10%, $T=100\text{usec}$)



2.3 VBW Characteristics

Graph 6. VBW Characteristics

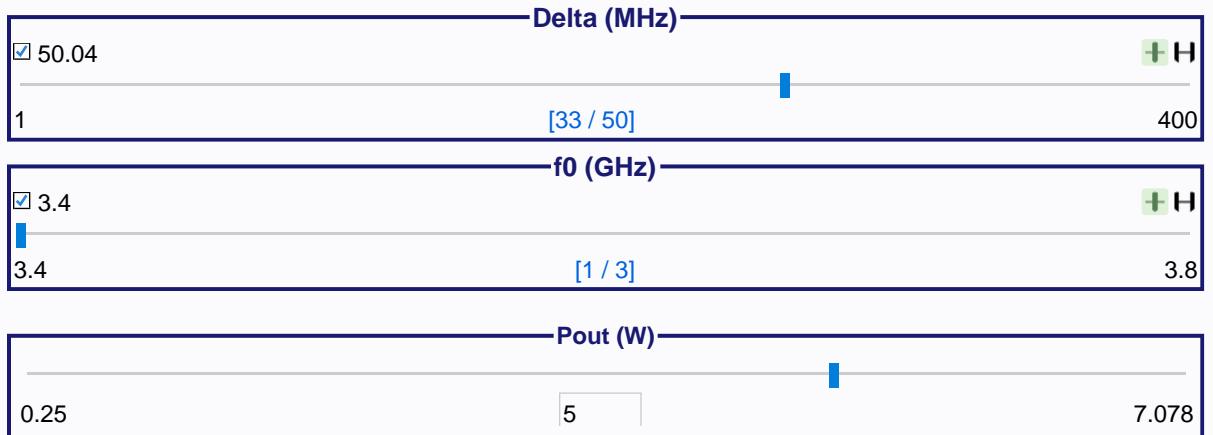
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $ID_q = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$; Test signal: 2-tones ($1\text{MHz} < F_{\text{spacing}} < 400\text{MHz}$)



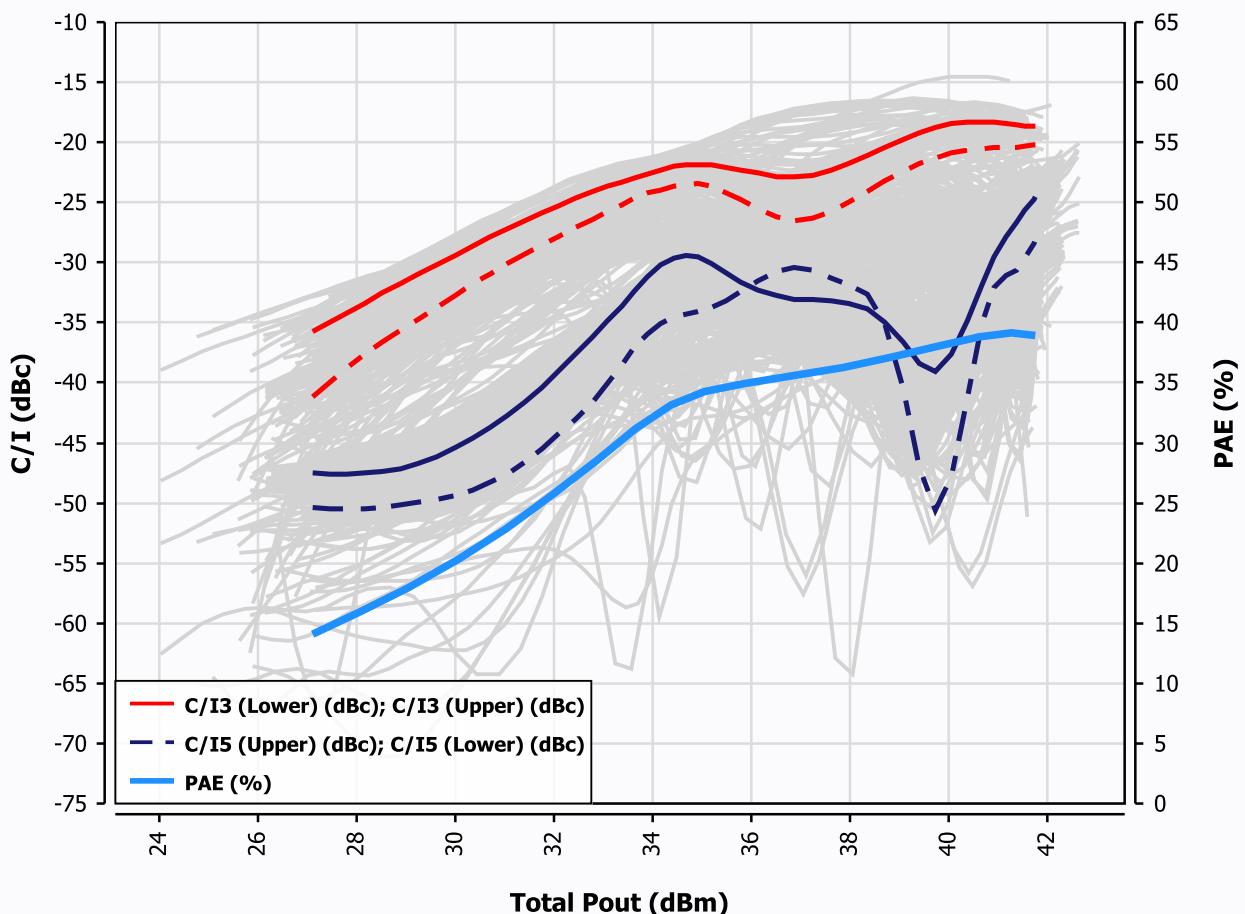
2.4 2-tones Characteristics

Graph 7. 2-tones Characteristics

Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $ID_q = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$; Test signal: 2-tones ($1\text{MHz} < F_{\text{spacing}} < 400\text{MHz}$)



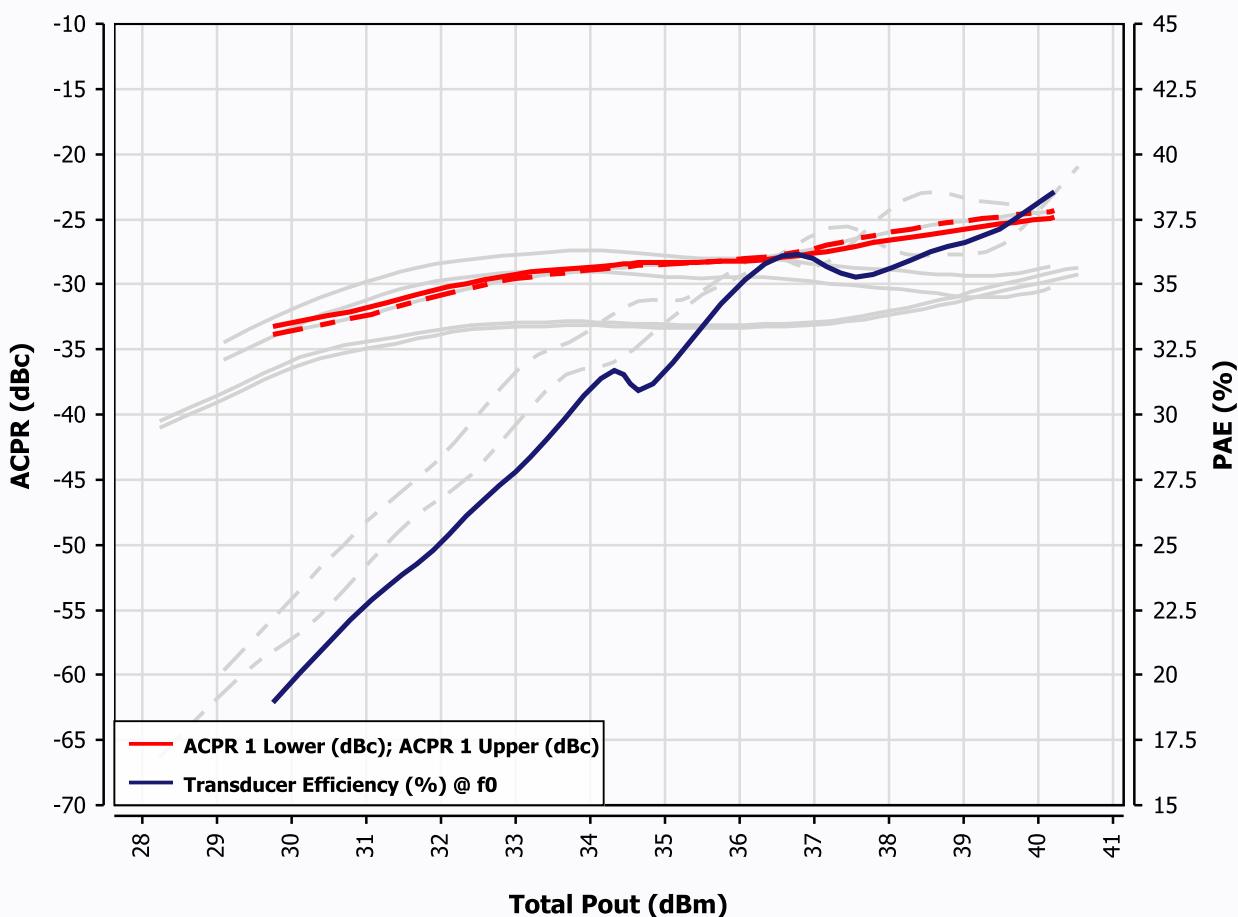
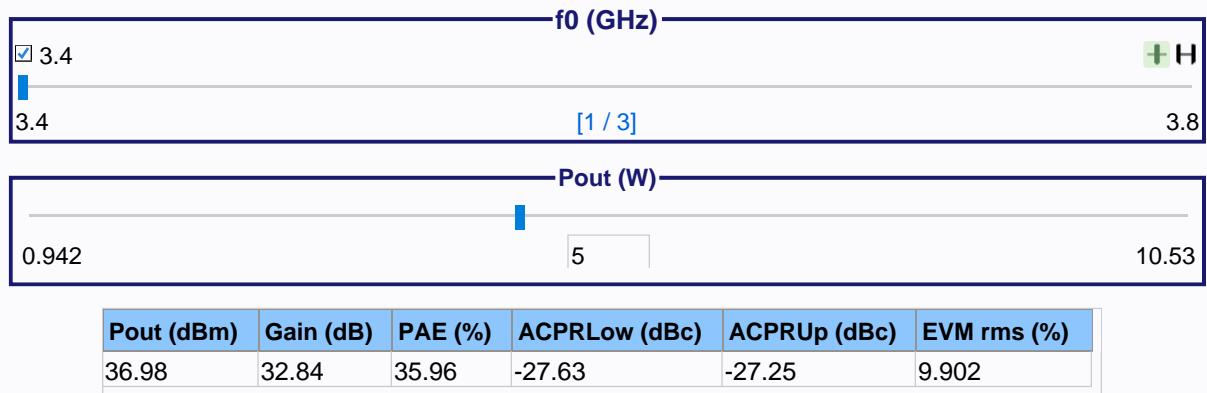
f0 (MHz)	Delta (MHz)	Pout (dBm)	Gain (dB)	PAE (%)	C/I3Low (dBc)	C/I3Up (dBc)	C/I5Low (dBc)	C/I5Up (dBc)
3400	50.04	36.97	32.49	38.44	-18.47	-20.84	-35.49	-42.91



2.4 Application Characteristics

Graph 8. Single carrier 16-QAM Characteristics

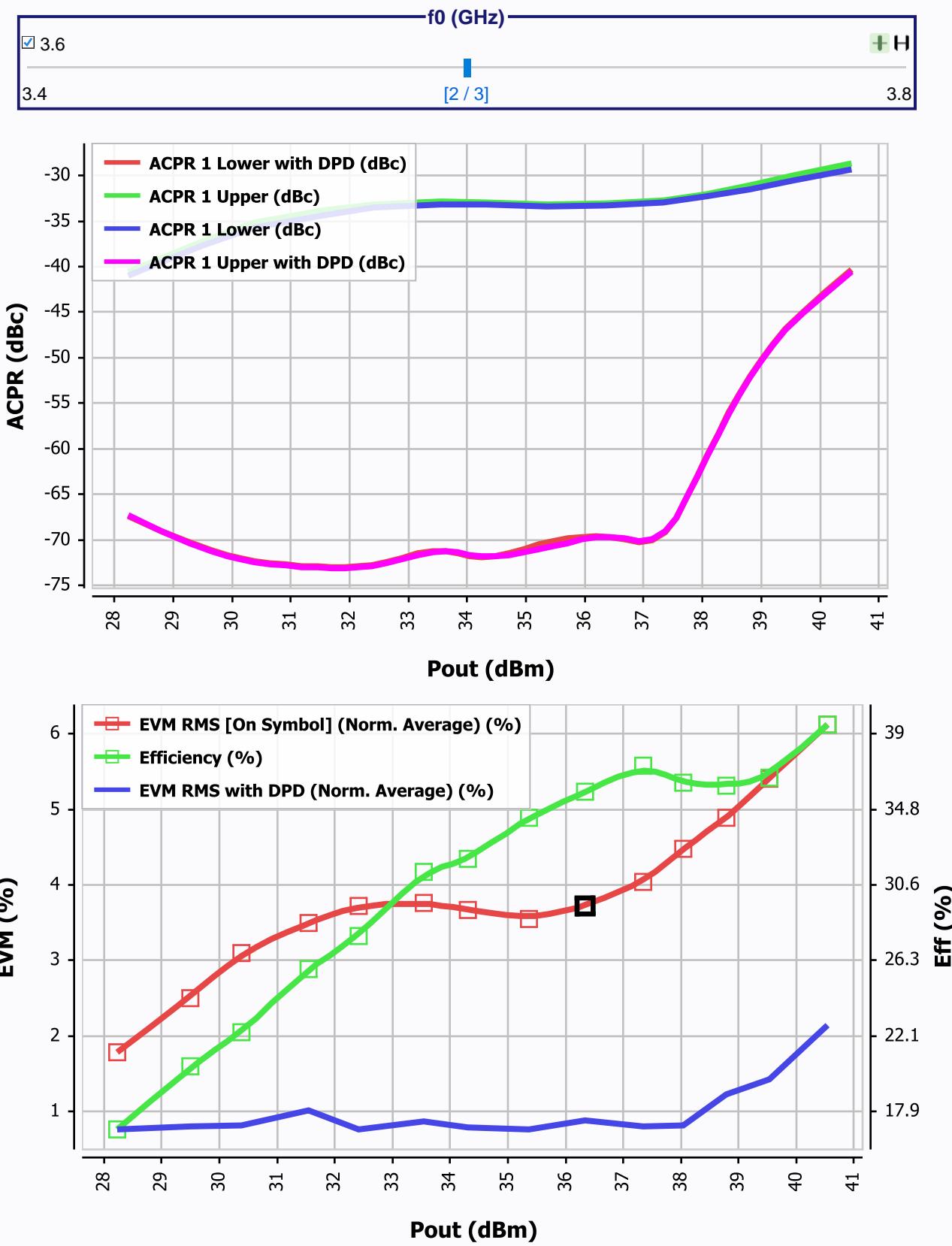
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$; Test signal: 1-carrier 16-QAM 15MHz; PAR=7.6dB



2.4 Application Characteristics with DPD

Graph 9. Single carrier 16-QAM Characteristics with DPD

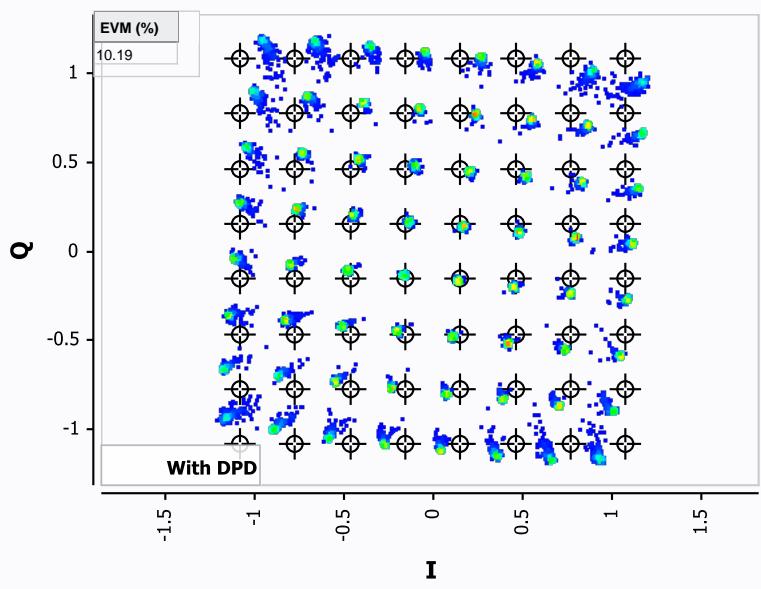
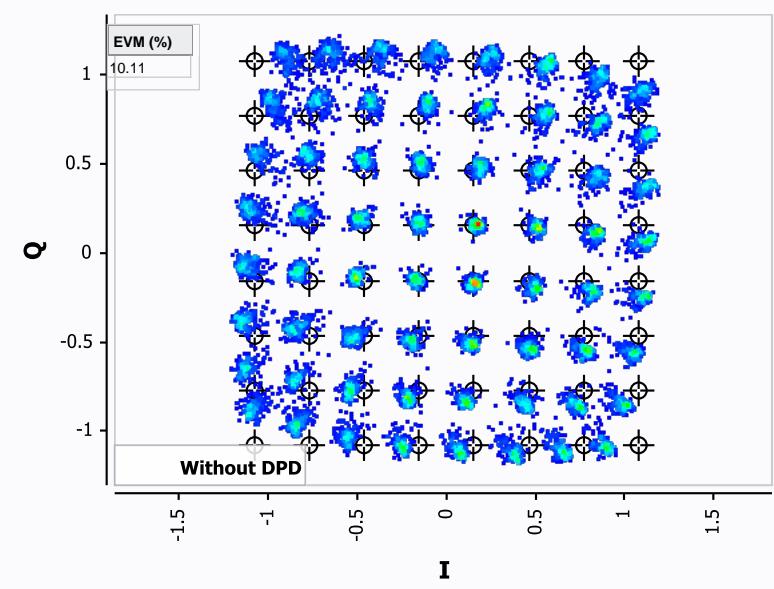
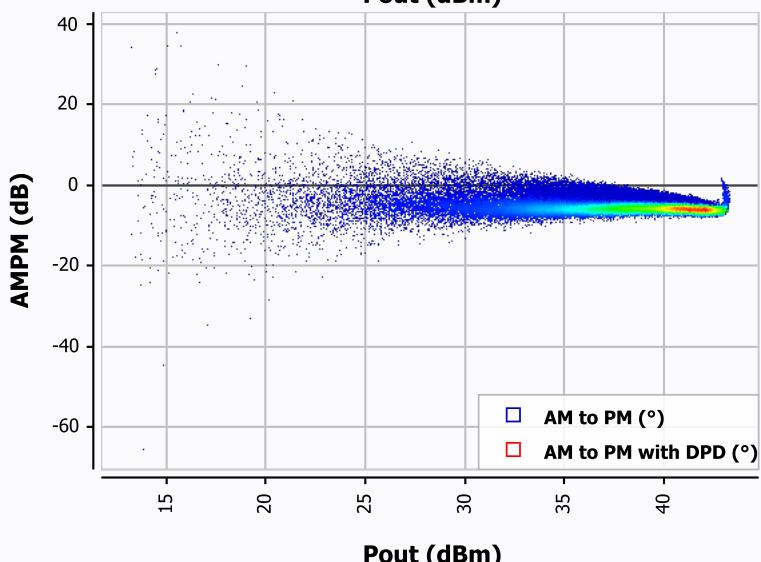
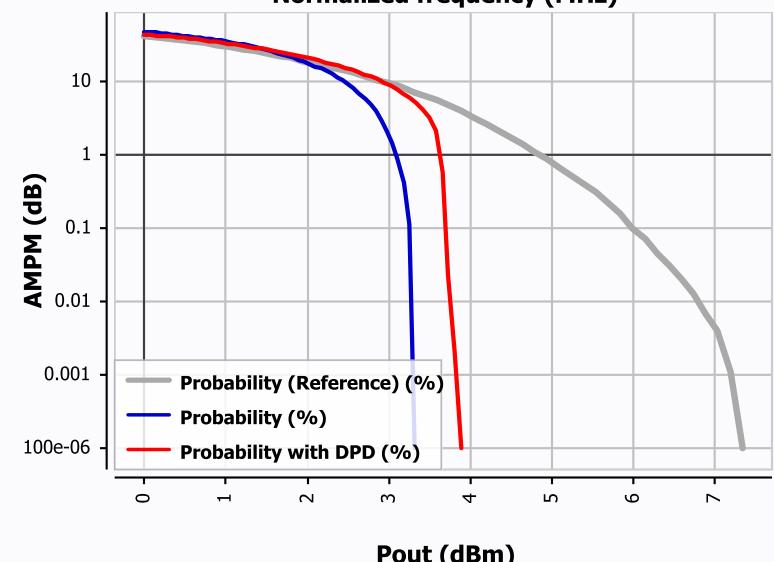
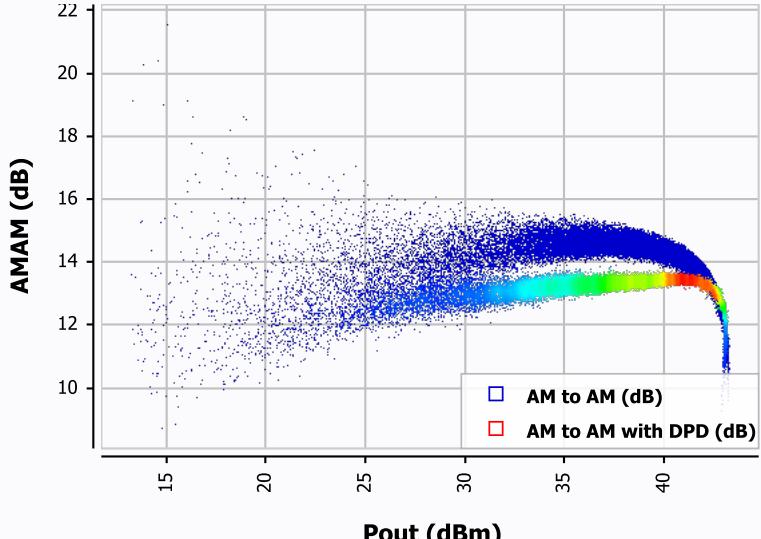
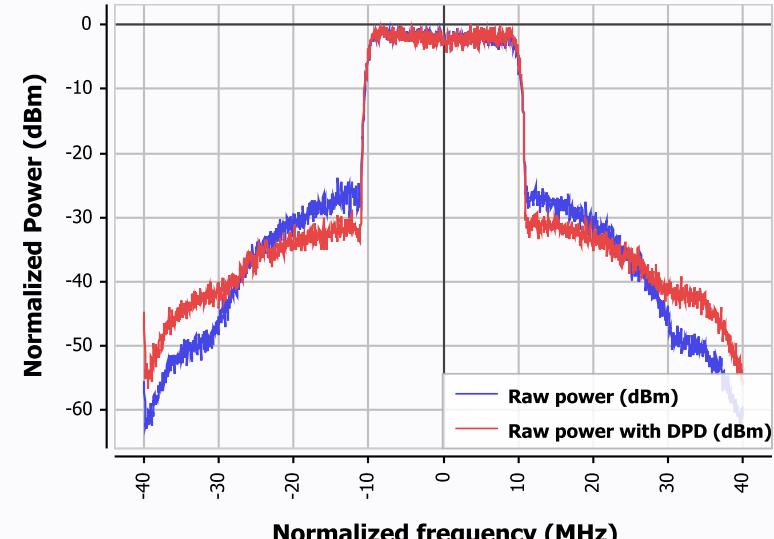
Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$; Test signal: 1-carrier 16-QAM 15MHz; PAR=7.6dB



2.4 Application Characteristics with DPD

Graph 9. Single carrier 16-QAM Characteristics with DPD

Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $ID_q = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;
Test signal: 1-carrier 16-QAM 15MHz; PAR=7.6dB



Graph 9. Load-Pull Pulse Duty-cycle 10%, Period = 100...

Typical RF performance at $T_{case}=25^{\circ}\text{C}$; $IDq = 45\text{mA}$ (carrier); $VGSq(\text{peaking})=VGSq(\text{carrier})-0.5\text{V}$;

