

# SC2200 MIMO Performance Results with NXP A2I20D040N at 1800-2200MHz

# NXP A2I20D040N Power Amplifier Data

- Amplifier Data

- > NXP A2I20D040N, Doherty, LDMOS
- > Operating Frequency: 1800-2200MHz
- > Frequency tested: band 1 (2110-2170MHz), band 2 (1930-1990MHz) and band 3 (1805-1880MHz)
- > Gain =  $\sim 33\text{dB}$ ;  $P_{\text{sat}} = P_{3\text{dB}} = \sim 46.5\text{dBm}$
- > NXP Driver used for testing: MMG20241H
- >  $V_{\text{dd}}=28\text{V}$

- SC2200-EVK1900 3ns with FW 5.0.09.04 with

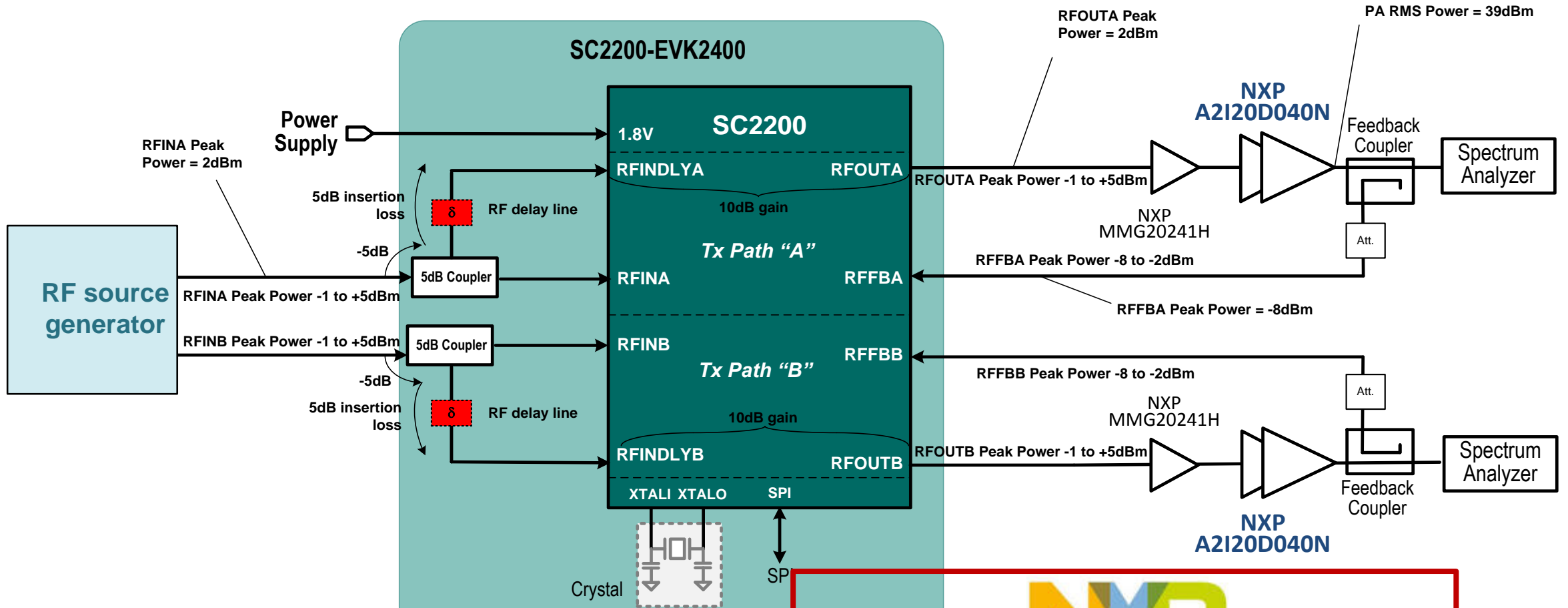
- > `FwConfigPathA.Linearizer_Gain = 3`
- > `AdvConfig.PDET_AGC_Thresh = 100`
- > Only MIMO applications with Path A and Path B at the same LO frequency.


# NXP A2I20D040N (33dB Gain) Performance Data Summary

- Performance with -50dBc

	Output Power (dBm) @-50dBc ACLR	PAE (%)	PAR (dB)
20 MHz LTE 1860 MHz (Band 3)	39	41	7
2x20 MHz LTE 1860 MHz (Band 3)	39	41	7
2x20 MHz LTE 1960 MHz (Band 2)	39	39.5	7
2x20 MHz LTE 2110 MHz (Band 1)	39	39.5	7

# SC2200 Test Set-up with RF Delay Line



  
**A2120D040N**  
 40 Watt Peak, Doherty PA  
 With NXP MMG20241H driver

# GUI Captures at Maximum Power level for path A

RF Power Amplifier Linearizer GUI 3.0.10.0

File Device Tools Options Help

### Status A

Operation Mode: Smooth Mode | Channel Status: FROZEN

Center Freq(MHz): 1960 | 24dBc BW(MHz): 37.5 | Cal Back-off: 0.02 | Cal Param #: 1

Information Code: 0 | Information Message: No information

Error Code: 0 | Error Message: No error

RFIN AGC(PDET)	Offset	Power
3	00.00	-14.58
RFFB AGC		
21	00.00	-15.06

### Configuration A

Adaptation State: Running | Correction Enable: FW Control | Min Frequency: 1900 | Max Frequency: 2000

Buttons: Set Cal Param 1, Clear Cal, CAL RFIN PMU, CAL RFFB PMU

Expected RFIN: | Expected RFFB: | Get Cost | Clear Info

### ACCP Config

EEPROM | APP\_EEPROM

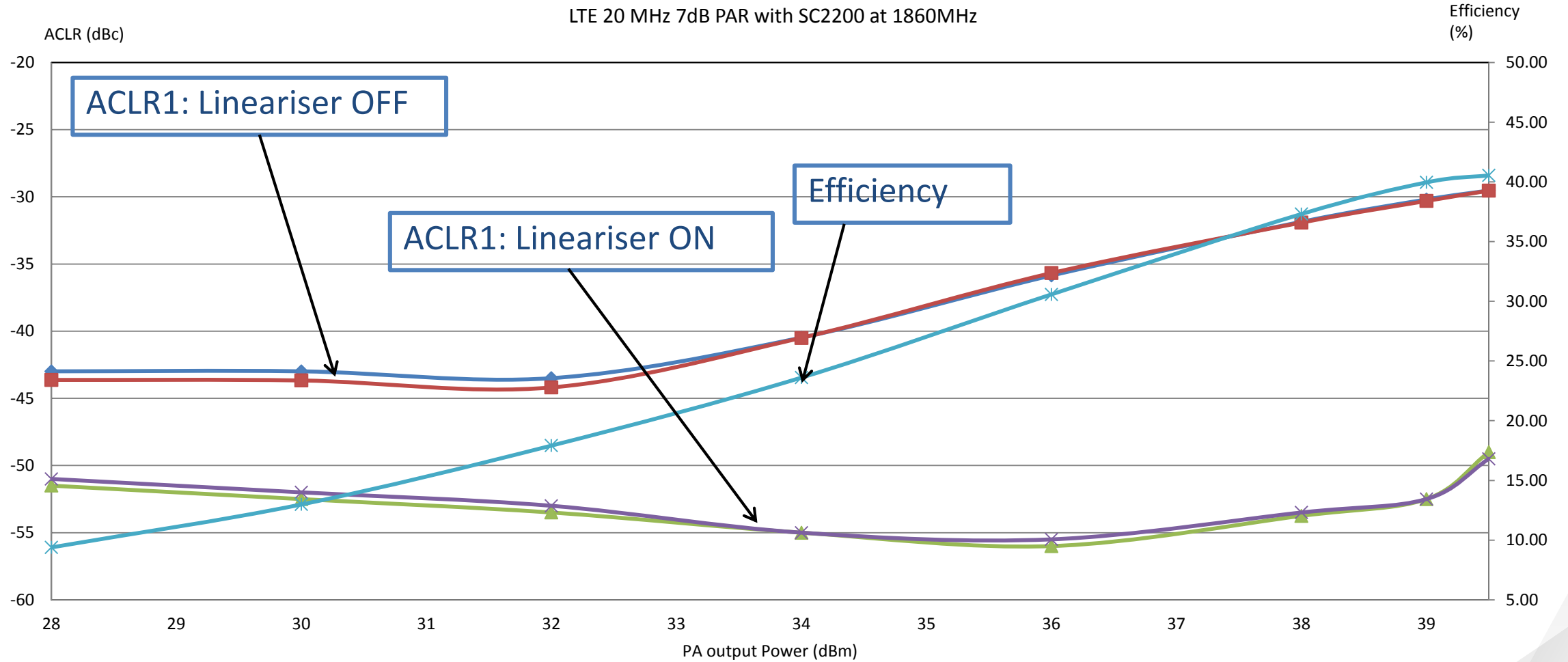
EEPROM Access

Variable Type: UINT8 | Write access | Read access (selected) | Address(hex): 0 | Value: 0

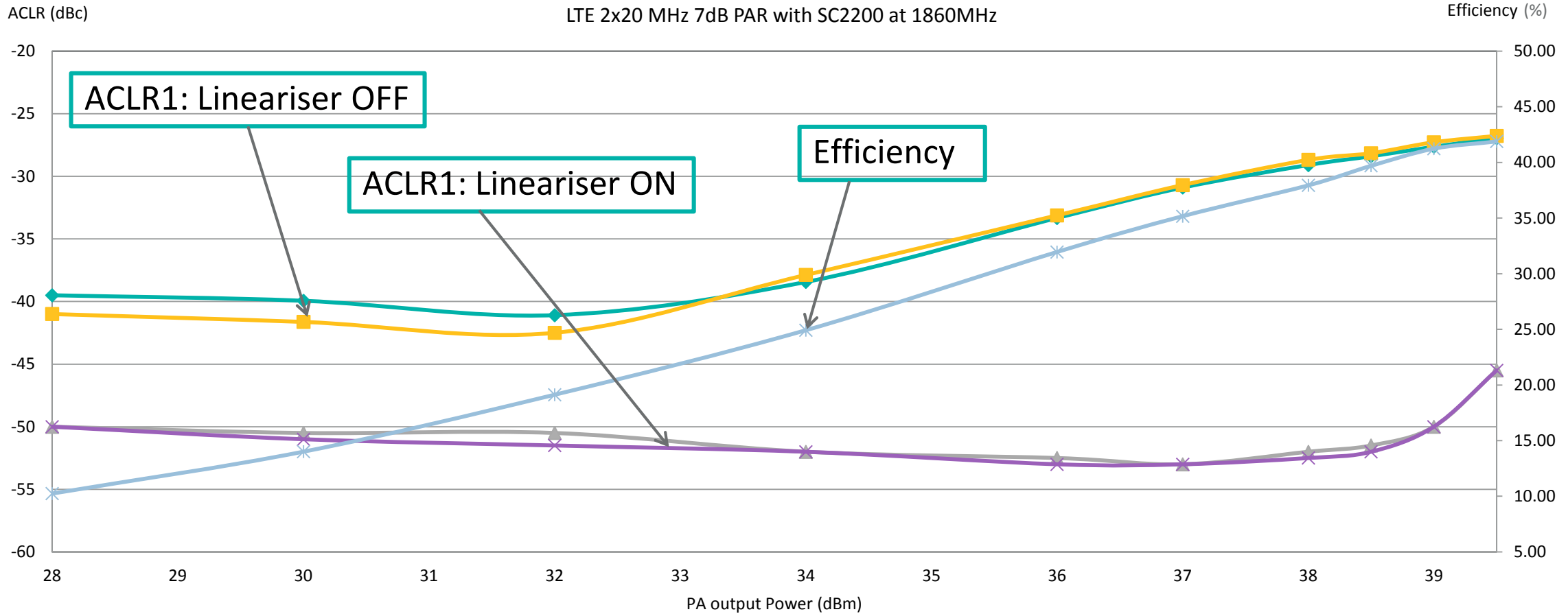
Load Parameters

Group	Variable Name	Address	Value
App	Checksum	0xFFFF	234
Device/AdvConfig	Back Off Freeze Threshold	0xFEFE	0
Device/AdvConfig	Corr VGA Idx	0xFF01	0
Device/AdvConfig	PDET AGC Threshold	0xFF02	100
Device/Config	RefFreqInkHz	0xFDC0	0
Device/Config	ShutDownTime_10ms	0xFDC2	0
Path A/CalFreq1	MaxPWRCALParam1_RFIN_MAX_PWR	0xFCF4	-4956
Path A/CalFreq1	MaxPWRCALParam10_Freq	0xFD00	3920
Path A/CalFreq1	MaxPWRCALParam11	0xFD02	211
Path A/CalFreq1	MaxPWRCALParam12	0xFD03	18
Path A/CalFreq1	MaxPWRCALParam13	0xFD04	Edit
Path A/CalFreq1	MaxPWRCALParam14	0xFD4E	Edit
Path A/CalFreq1	MaxPWRCALParam15	0xFD59	209
Path A/CalFreq1	MaxPWRCALParam2_RFFB_MAX_PWR	0xFCF6	-5118
Path A/CalFreq1	MaxPWRCALParam3_PDET	0xFCF8	3
Path A/CalFreq1	MaxPWRCALParam4	0xFCF9	3
Path A/CalFreq1	MaxPWRCALParam5_IC_temp	0xFCFA	167
Path A/CalFreq1	MaxPWRCALParam6	0xFCFC	5
Path A/CalFreq1	MaxPWRCALParam7	0xFCFD	17
Path A/CalFreq1	MaxPWRCALParam8	0xFCFE	119
Path A/CalFreq1	MaxPWRCALParam9	0xFCFF	123
Path A/CalFreq1	MaxPWRDCALCoefficients	0xFD1C	Edit
Path A/FW Config	Adaptation State	0xFC1F	0
Path A/FW Config	AdaptOnTime_10ms	0xFC18	0
Path A/FW Config	Correction Enable	0xFC22	0
Path A/FW Config	Linearizer Gain	0xFC26	3

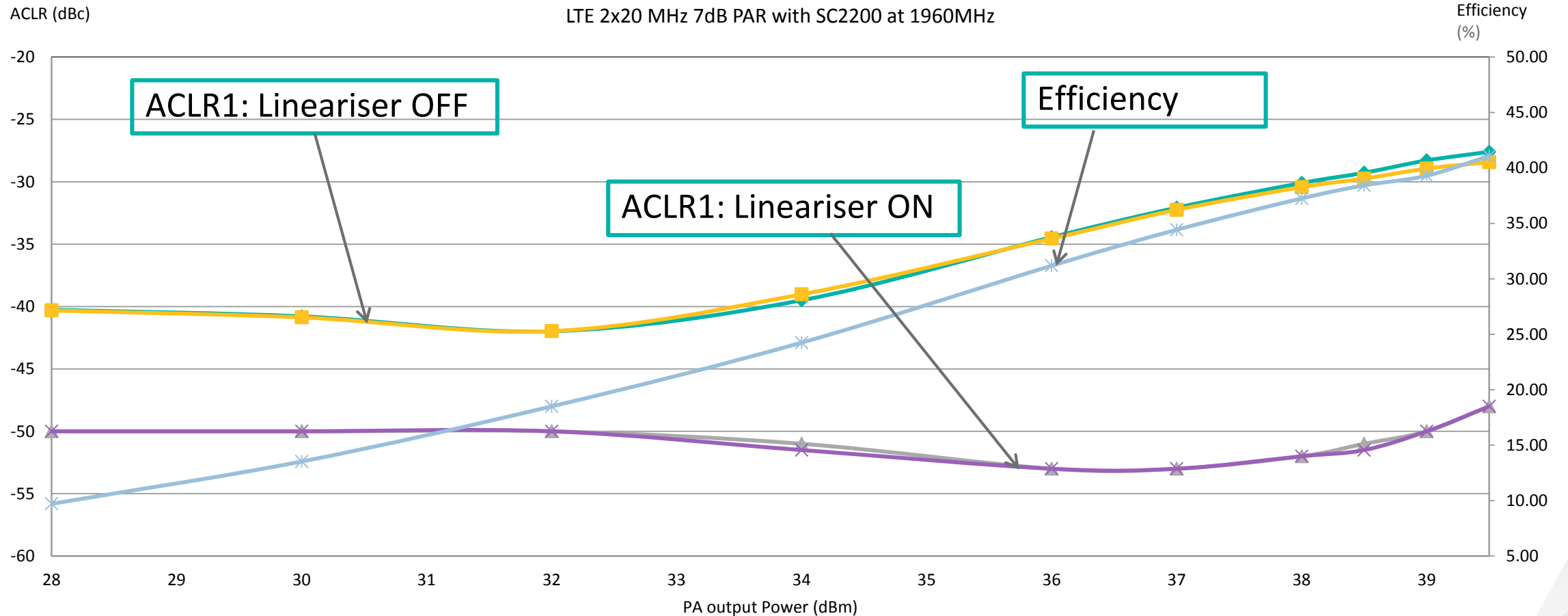
# LTE20MHz: 39dBm out; 41% efficiency



# LTE2x20MHz at 1860MHz: 39dBm out; 41% efficiency

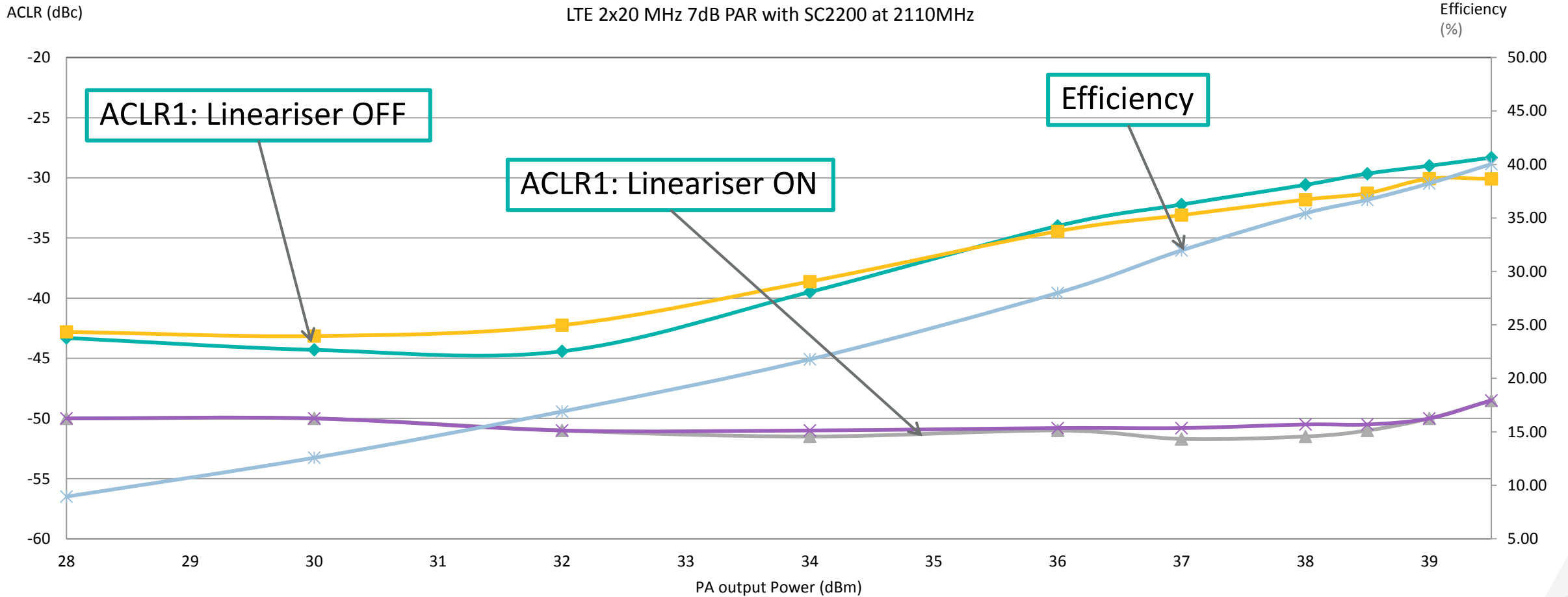


# LTE2x20MHz at 1960MHz: 39dBm out; 39.5% efficiency





# LTE2x20MHz at 2110MHz: 39dBm out; 39.5% efficiency





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