

SC1894 Wideband Performance results with Ampleon 2xBLF6G38-10G Doherty at 3.5GHz

Ampleon 2xBLF6G38-10G Doherty Power Amplifier Data

- **Amplifier Data**

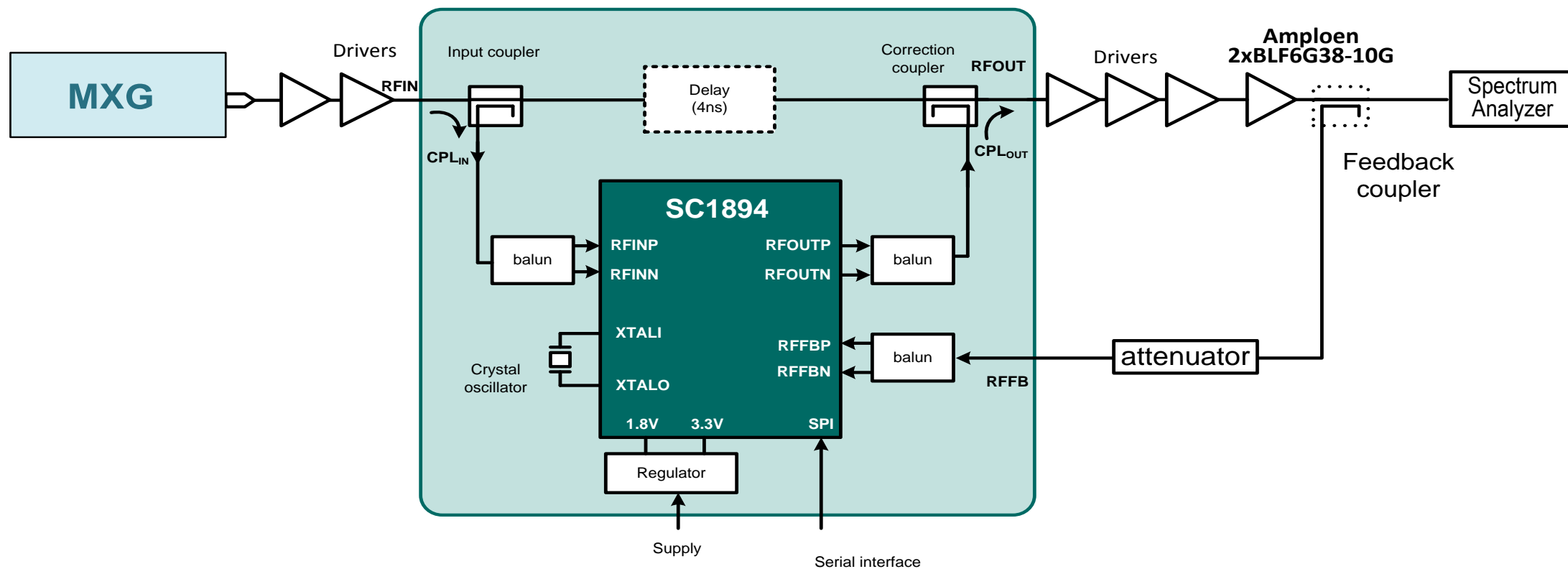
- Ampleon 2xBLF6G38-10G, Doherty, LDMOS. Design modified for wideband performance.
- Operating Frequency: 3400-3600 MHz
- Frequency tested: 3500 MHz
- Gain = ~14dB; Psat = P3dB= ~ 46dBm
- Vdd=30V
- Drivers used:
 - > NXP MMG20241H (~14.7dB gain) and Avago ALM-31322 (~13dB gain) between MXG and SC1894-EVK3400
 - > 2 Avago ALM-31322 (~13dB gain) and 1 Avago ALM-32320 (~12.5dB gain) between SC1894-EVK3400 and Ampleon 2xBLF6G38-10G PA.
 - > **Very good linearity's of the drivers are critical for wideband performance (-55dBc was achieved with 2x20MHz)**
- SC1894-EVK3400 with FW 4.1.03.08

Ampleon 2xBLF6G38-10G Performance Data Summary

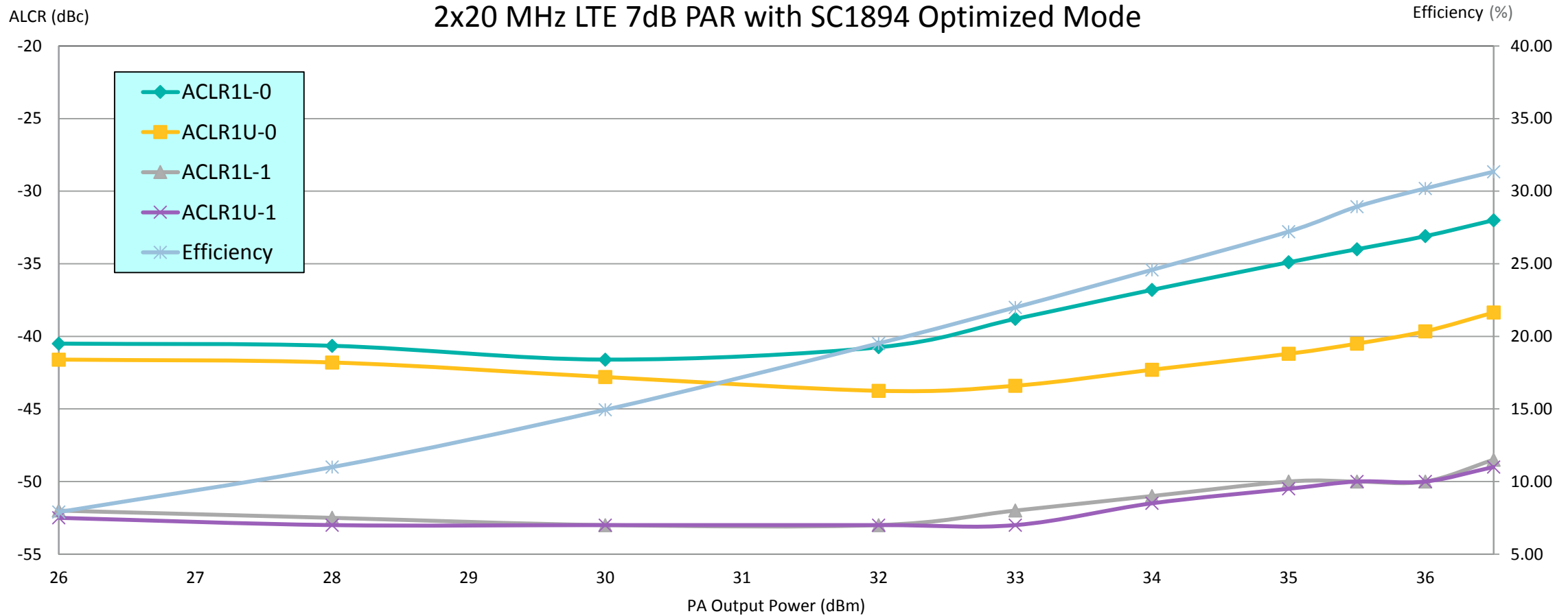
	Output Power (dBm) @-50dBc ACLR	PAE (%)	PAR (dB)
2x20 MHz LTE	36	30	7
LTE 20MHz	38.5	37.5	7
LTE 20MHz	36.5	31	9.7
LTE 10MHz	38.5	37.5	7
WCDMA4	38	35	7.75

- RFIN Level needs to be higher at 3.5GHz than at other frequencies of operation.
 - Recommendation for all bands (except 3400-3800MHz) is $1 < \text{RFIN AGC (PDET)} < 8$
 - For 3400-3800MHz, recommend using $7 < \text{RFIN AGC (PDET)} < 14$
- How to read the results
 - ACLR1L-X: ACLR 1 Lower. ACLR1U-X: ACLR 1 Upper
 - X=0 means SC1894 is disabled. X=1 means SC1894 is enabled.

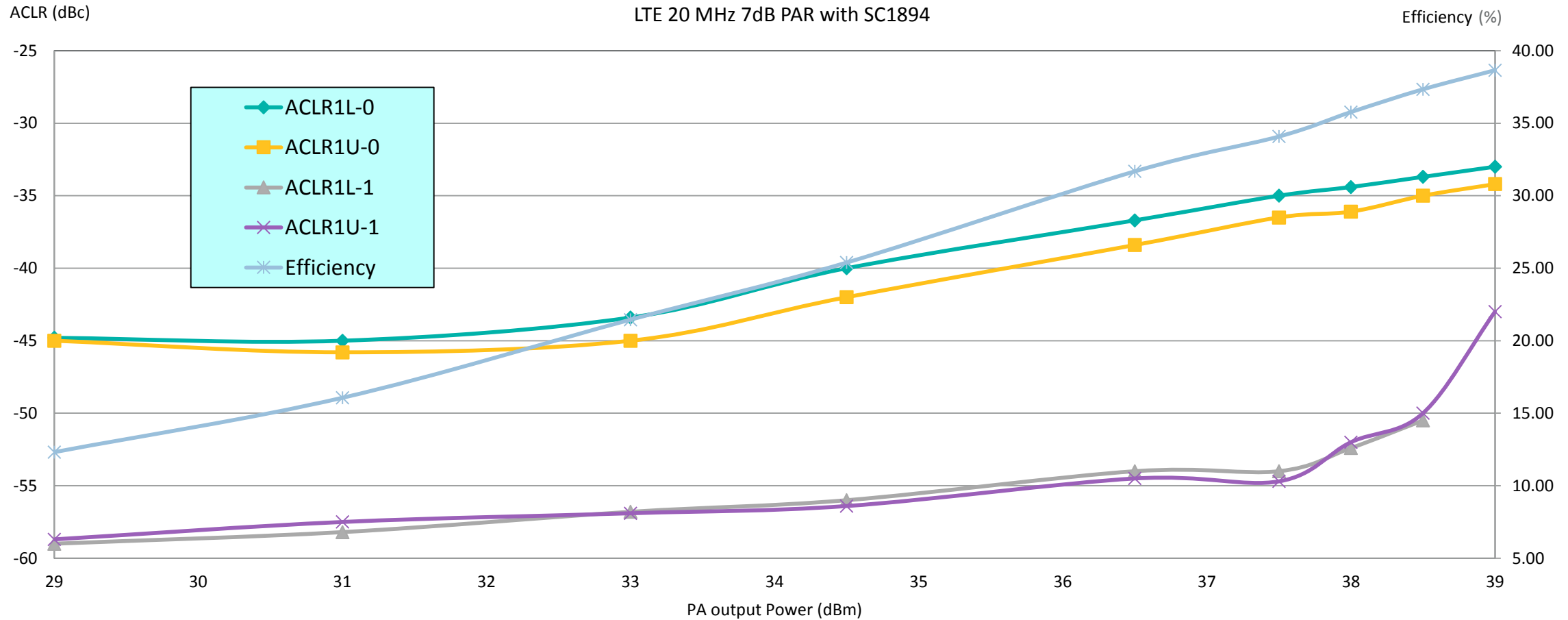
Test Set-up with SC1894 and Ampleon 2xBLF6G38-10G



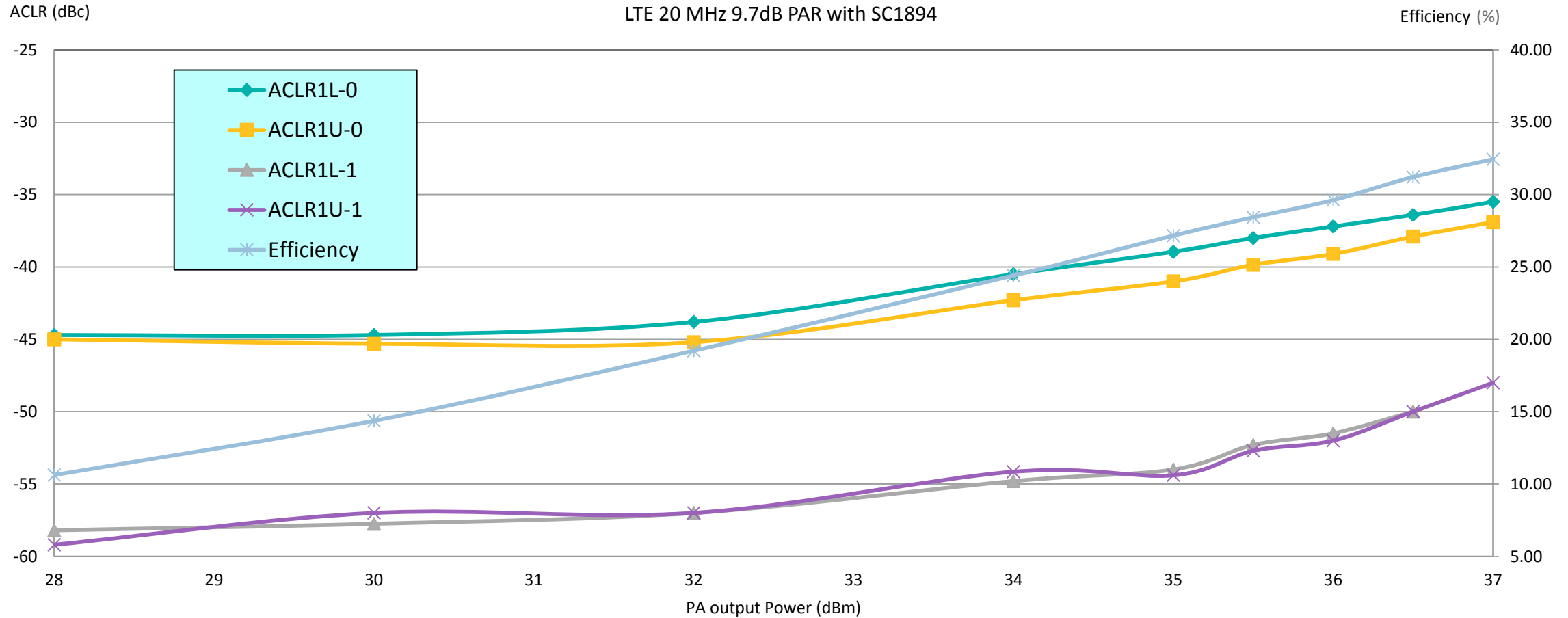
LTE2x20MHz 7dB PAR: 36dBm out; 30% efficiency



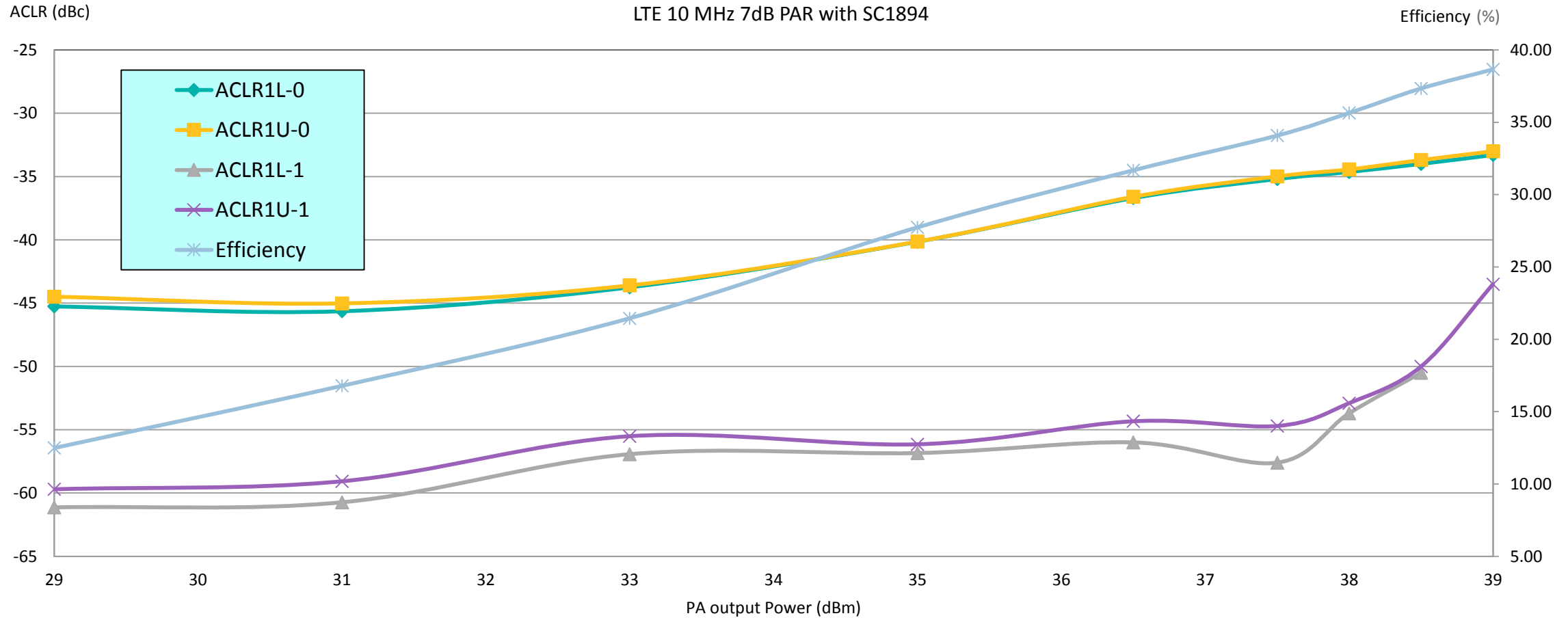
LTE20MHz 7dB PAR: 38.5dBm out; 37.5% efficiency



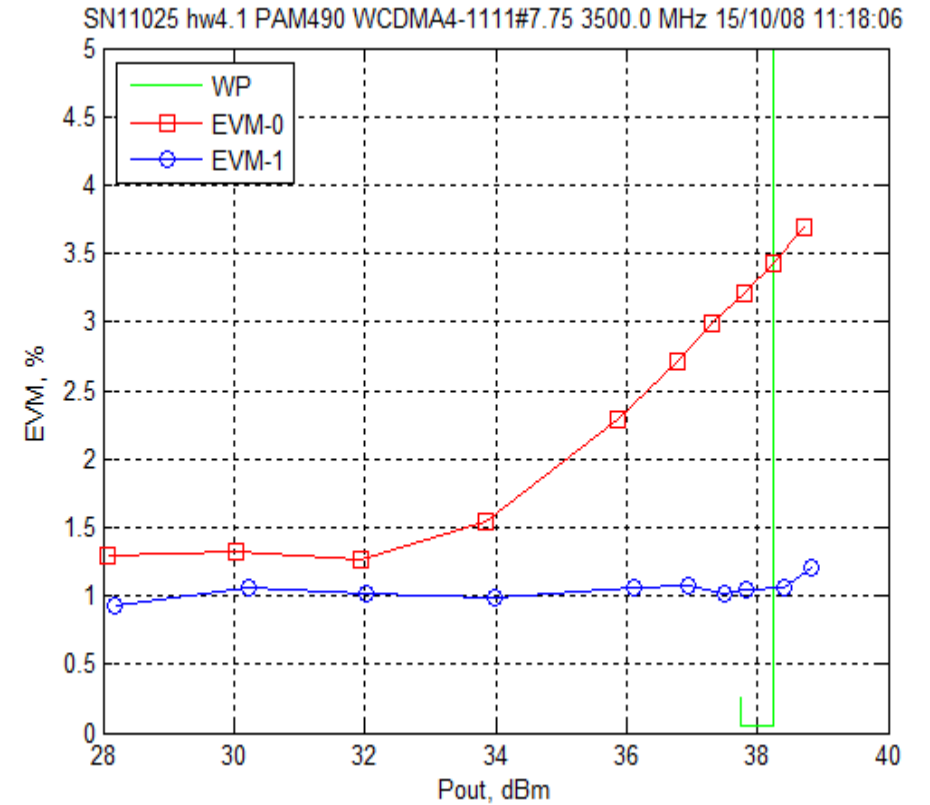
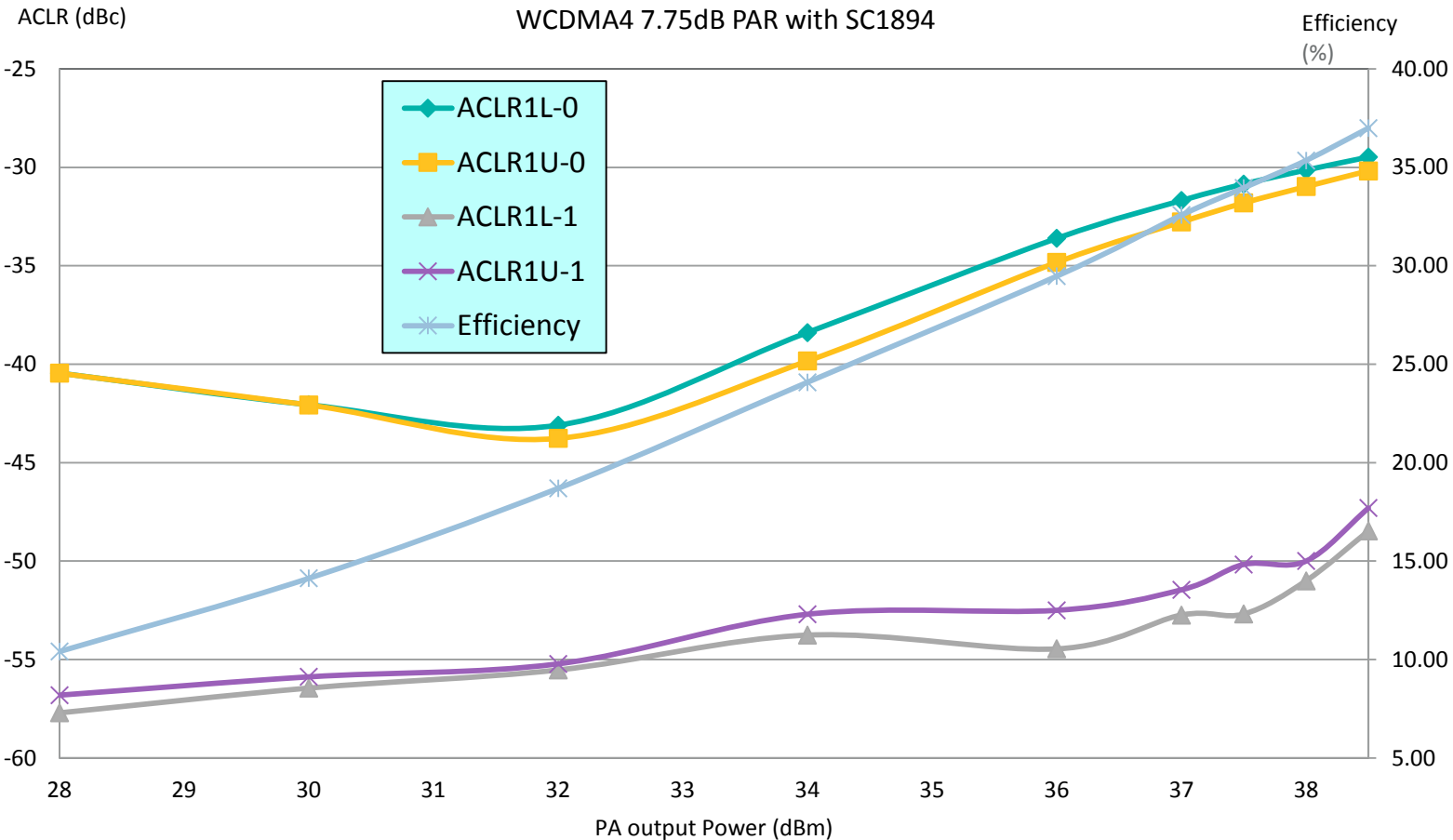
LTE20MHz 9.7dB PAR: 36.5dBm out; 31% efficiency



LTE10MHz 7dB PAR: 38.5dBm out; 37.5% efficiency



WCDMA4 (7.75dB PAR): 38dBm PAE 35% with EVM Improvement





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