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

Ampleon 2xBLF6G38-10G Doherty Power Amplifier Data

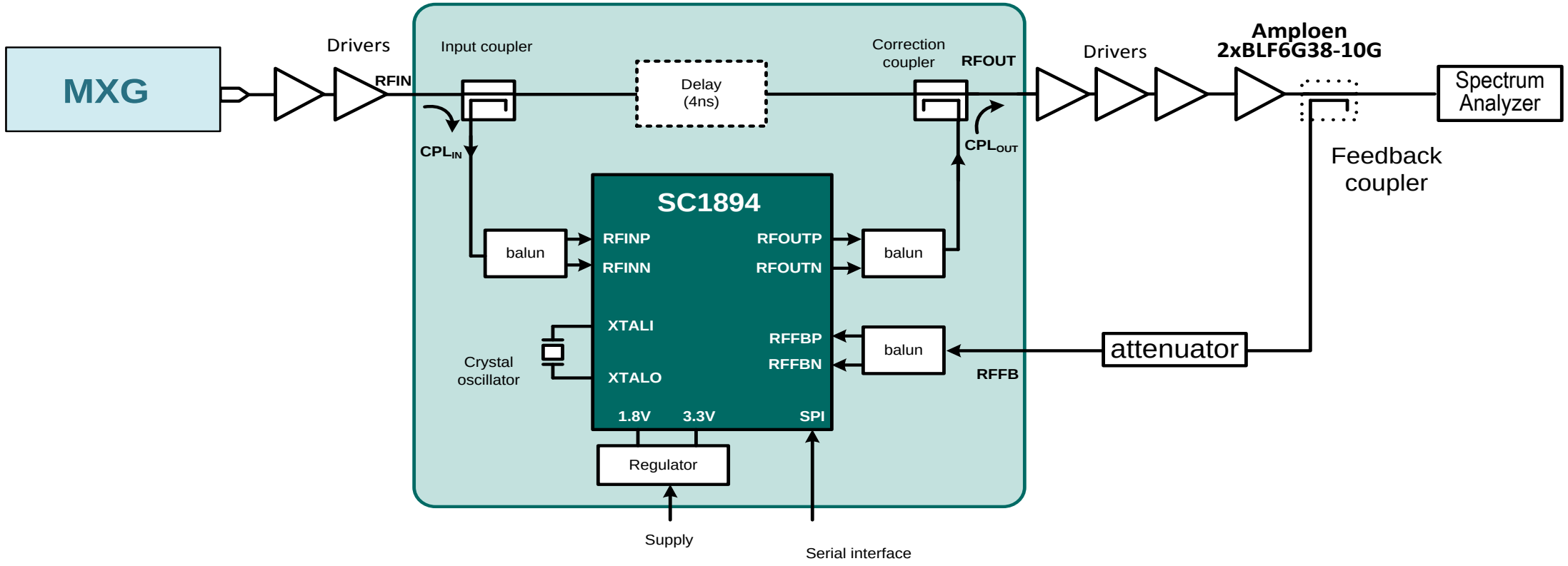
- **Amplifier Data**
  - Ampleon 2xBLF6G38-10G, Doherty, LDMOS. Design modified for wideband performance.
  - Operating Frequency: 3400-3600 MHz
  - Frequency tested: 3500 MHz
  - Gain = ~14dB; Psat = P3dB= ~ 46dBm
  - Vdd=30V
  - Drivers used:
    - > NXP MMG20241H (~14.7dB gain) and Avago ALM-31322 (~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

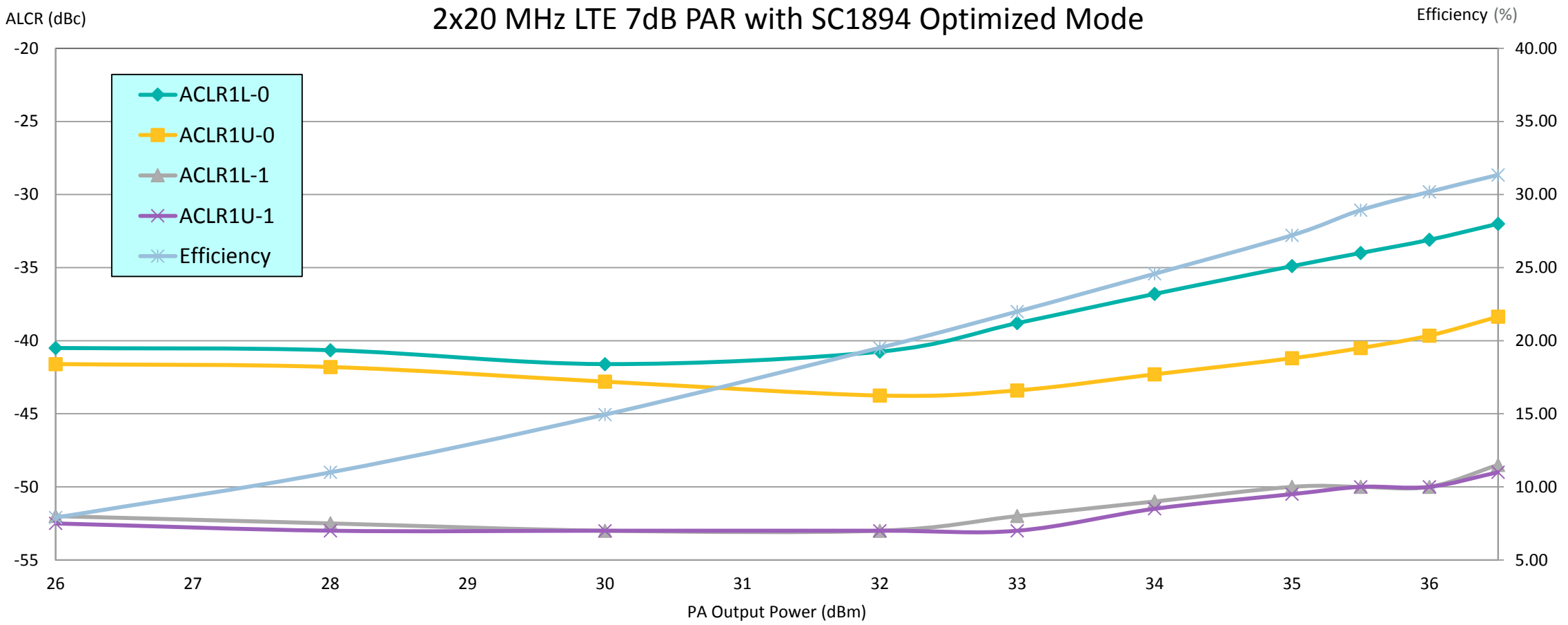
	Output Power (dBm) @-50dBc ACLR	PAE (%)	PAR (dB)
2x20 MHz LTE	36	30	7
LTE 20MHz	38.5	37.5	7
LTE 20MHz	36.5	31	9.7
LTE 10MHz	38.5	37.5	7
WCDMA4	38	35	7.75

- RFIN Level needs to be higher at 3.5GHz than at other frequencies of operation.
  - Recommendation for all bands (except 3400-3800MHz)is 1<RFIN AGC (PDET)<8
  - For 3400-3800MHz, recommend using **7<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



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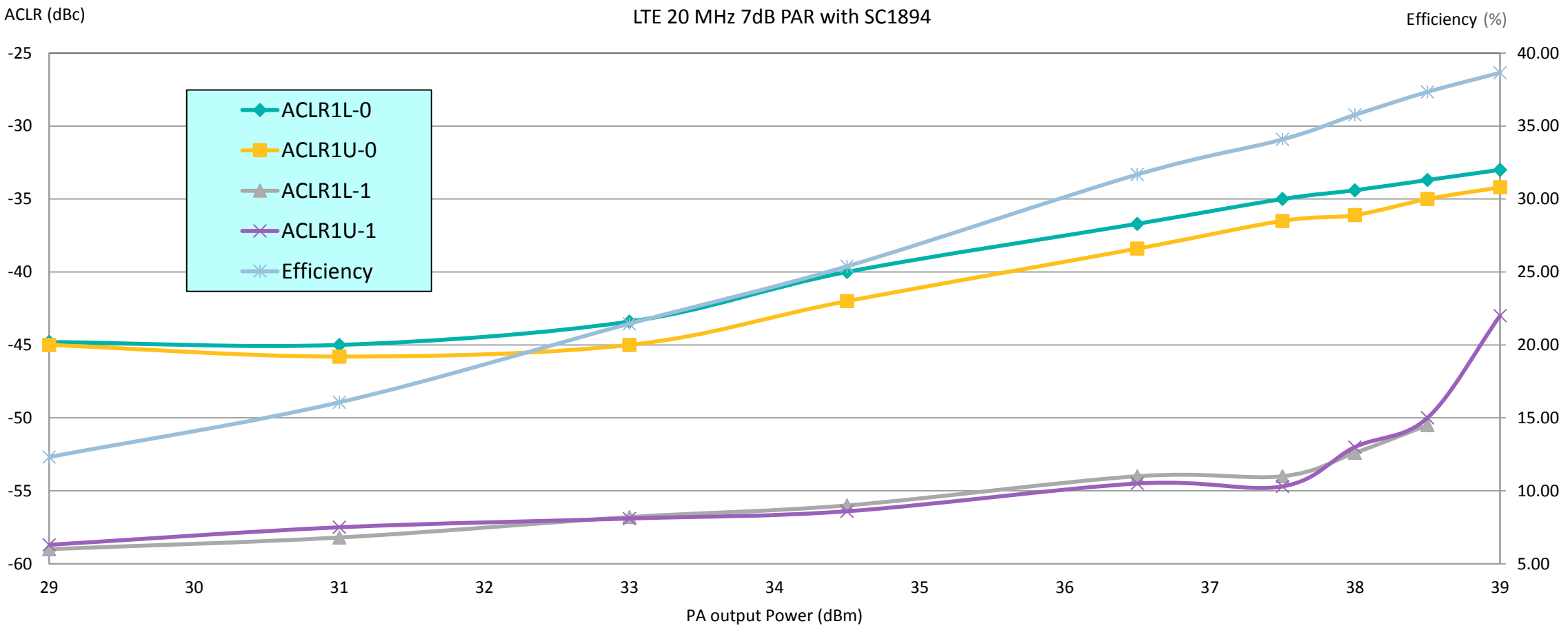
LTE20MHz 7dB PAR: 38.5dBm out; 37.5% efficiency



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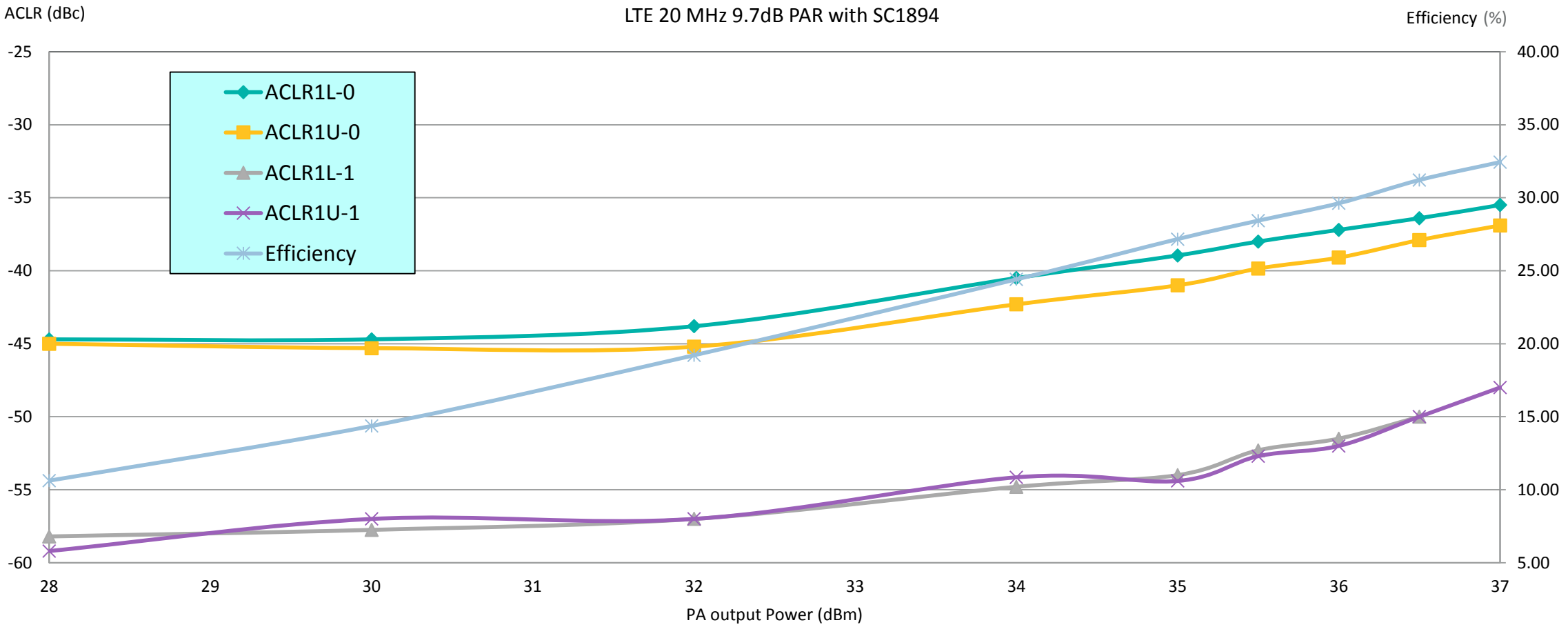
LTE20MHz 9.7dB PAR: 36.5dBm out; 31% efficiency



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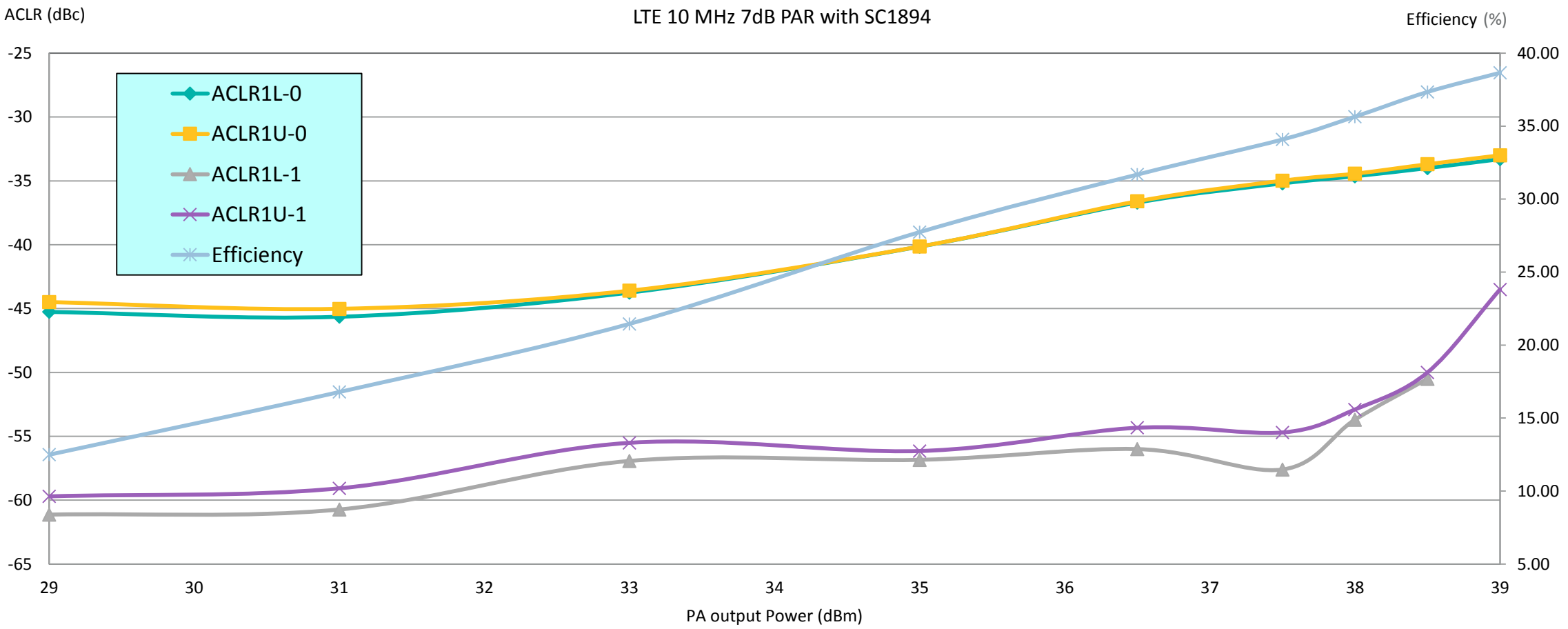
LTE10MHz 7dB PAR: 38.5dBm out; 37.5% efficiency



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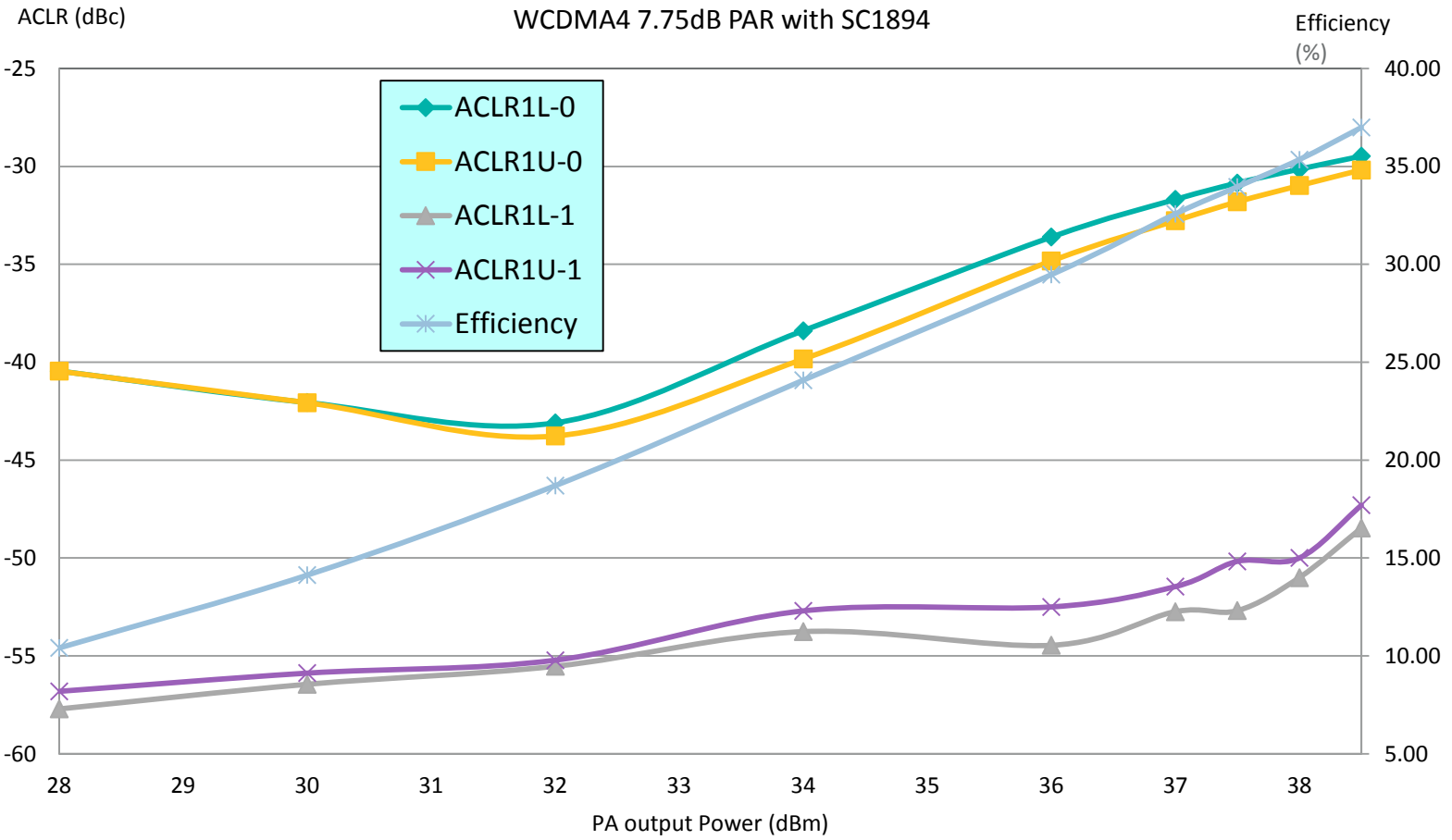
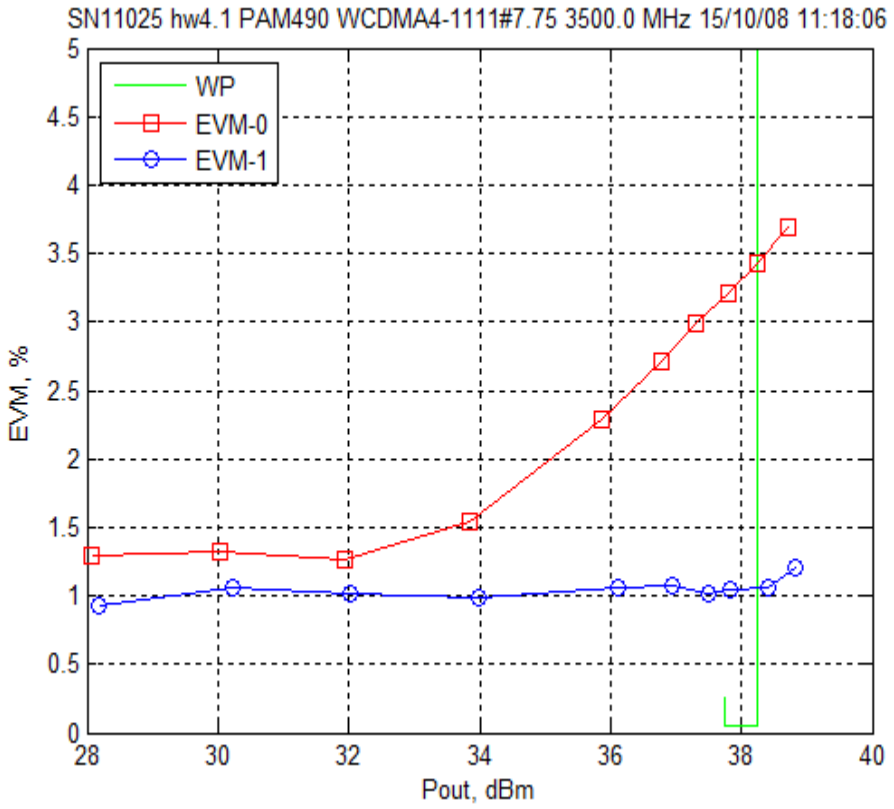
WCDMA4 (7.75dB PAR): 38dBm PAE 35% with EVM Improvement





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