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

• **Amplifier Data**
  - Operating Frequency: 3400-3600 MHz
  - Frequency tested: 3500 MHz
  - Gain = ~14dB; $P_{\text{sat}} = P_{3\text{dB}} = ~46\text{dBm}$
  - $V_{\text{dd}} = 30\text{V}$
  - 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

<table>
<thead>
<tr>
<th></th>
<th>Output Power (dBm) @ -50dBc ACLR</th>
<th>PAE (%)</th>
<th>PAR (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x20 MHz LTE</td>
<td>36</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>LTE 20MHz</td>
<td>38.5</td>
<td>37.5</td>
<td>7</td>
</tr>
<tr>
<td>LTE 20MHz</td>
<td>36.5</td>
<td>31</td>
<td>9.7</td>
</tr>
<tr>
<td>LTE 10MHz</td>
<td>38.5</td>
<td>37.5</td>
<td>7</td>
</tr>
<tr>
<td>WCDMA4</td>
<td>38</td>
<td>35</td>
<td>7.75</td>
</tr>
</tbody>
</table>

- **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