

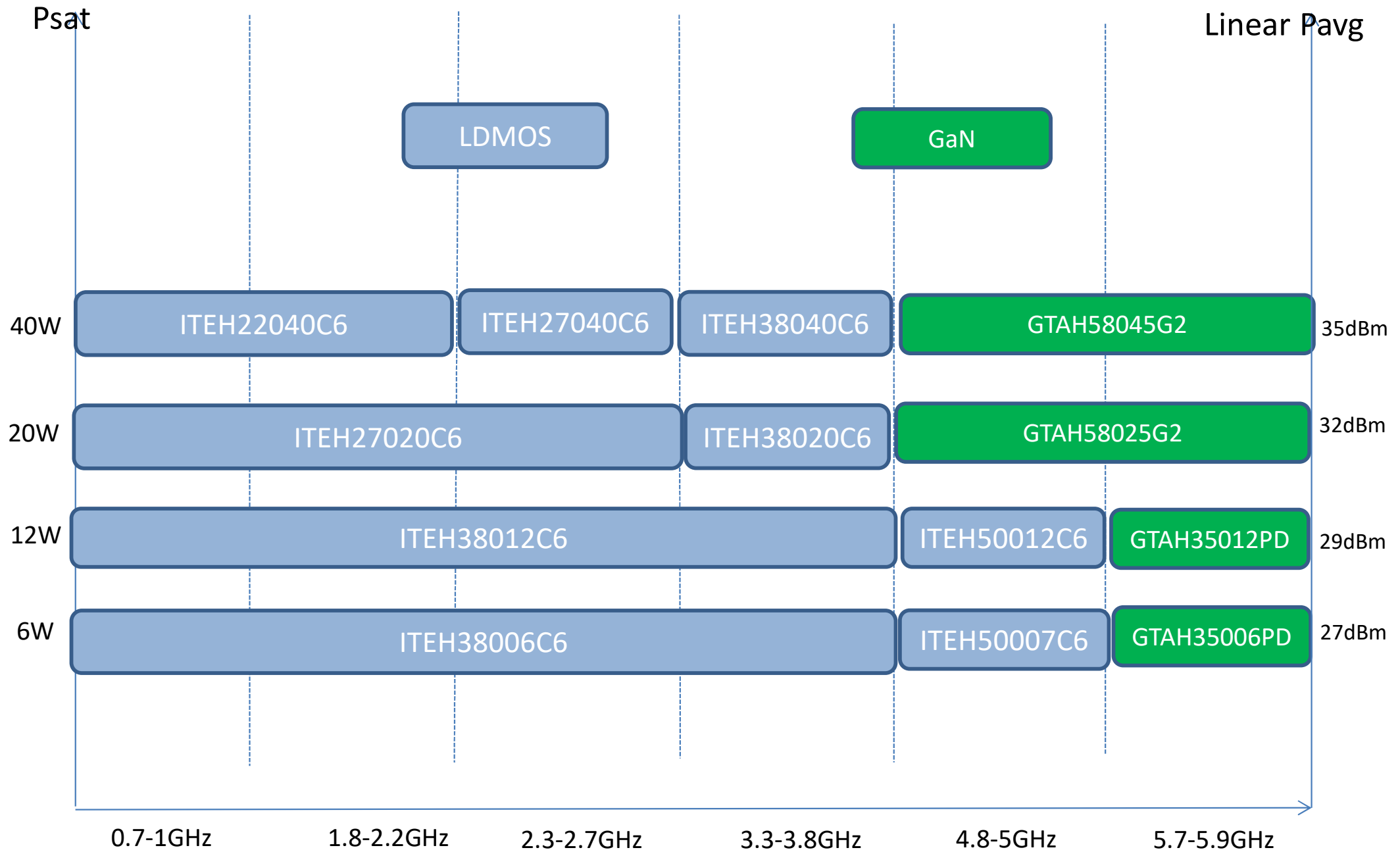
针对皮基站的高线性,通用型, 低成本LDMOS/GaN High linear, general purpose and low cost LDMOS/GaN for Picocell



RF Power **Innovative Integration**
www.innogration.net

- 设计目标：3W以下功率不用预失真
No DPD When below 3W
- 5GHz以下主要依靠LDMOS,5.8G依靠GaN
<5GHz by LDMOS,5.8G by GaN
- 特别优化的28V LDMOS或者GaN工艺，结合侧重于线性的调试方法，直接满足低功率纯回退的高线性要求，3G WCDMA/4G LTE/5G NR（见后续测试数据-）
Specialized 28V LDMOS or GaN process and transistor design to meet lower power and high linear application of 3G WCDMA/4G LTE/5G NR (See test data later)
- 重点针对分布式或拓展式皮基站24-30dBm站型，对应28-35dBm的放大器输出
Target at 24-30dBm antenna power picocell, responding to 28-35dBm PA output
- 参考设计均具备2-3dB的线性余量，适应批次以及温度变化等因素对于线性要求的挑战。
With 2-3dB ACPR margin, to fit variation of device and temperature etc
- 通用型器件，同一器件可以支持多频段，简化器件数量
General device ,multiple band supported with unique device

28V High linear general purpose Class AB Transistor



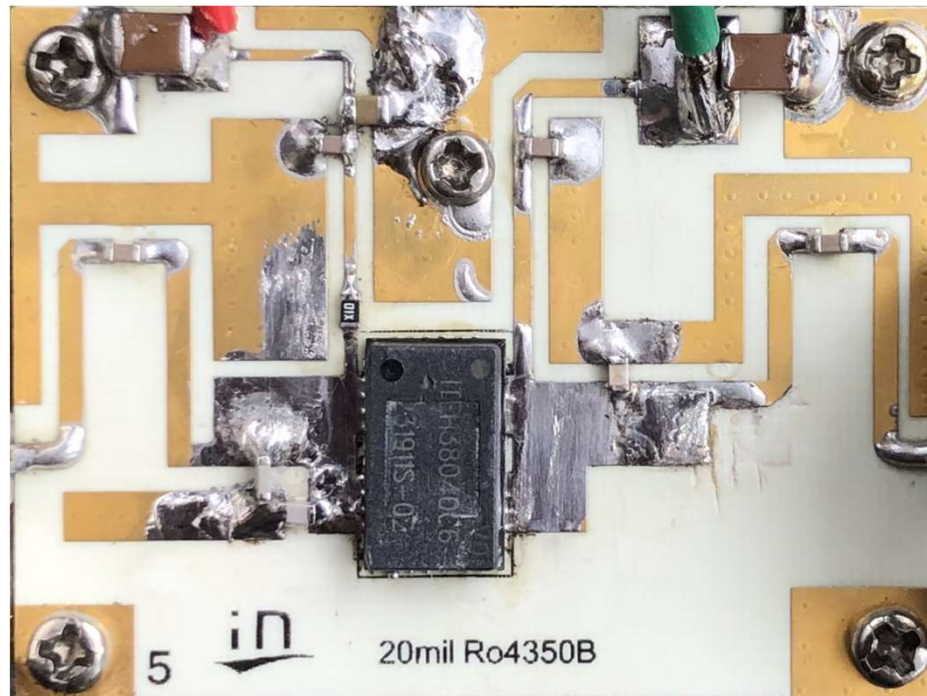
	ITEH38040C6
3300-3600MHz	35dBm LTE/-50dBc, 33dBm NR/-47dBc

Application report index:

ZBB-23-10: ITEH38040C6 for LTE

ZYX-24-26: ITEH38040C6 for NR

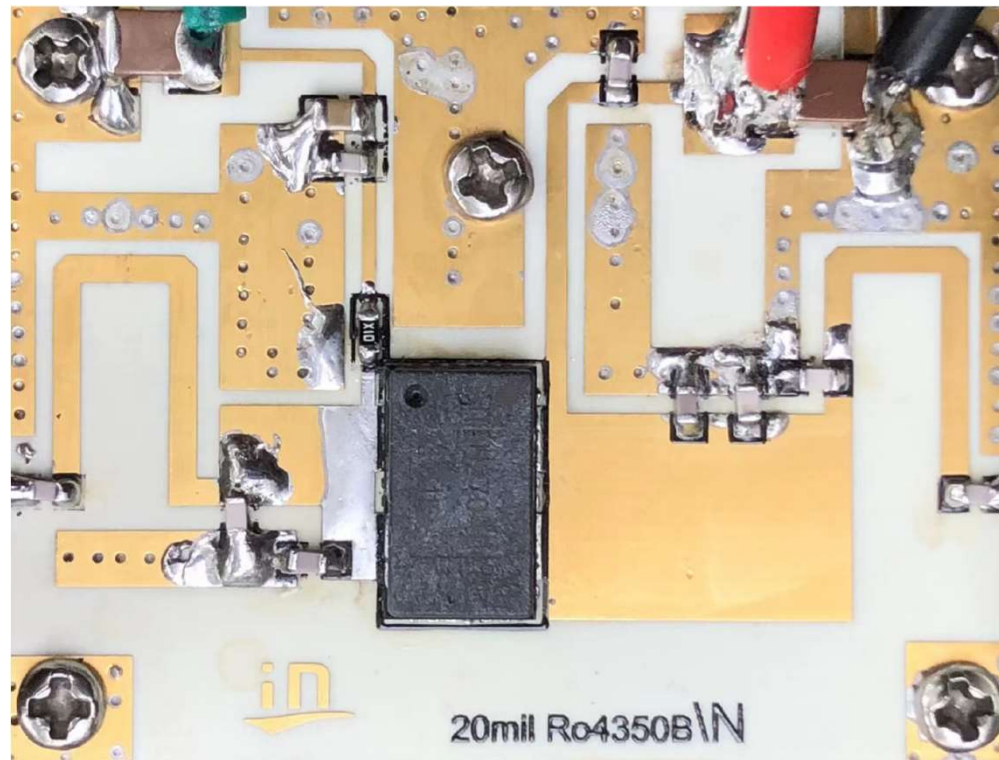
No DPD needed, purely backoff



	ITEH27040C6
2500-2700MHz	35dBm/-49dBc

Application report index:
ZBB-23-16: ITEH27040C6

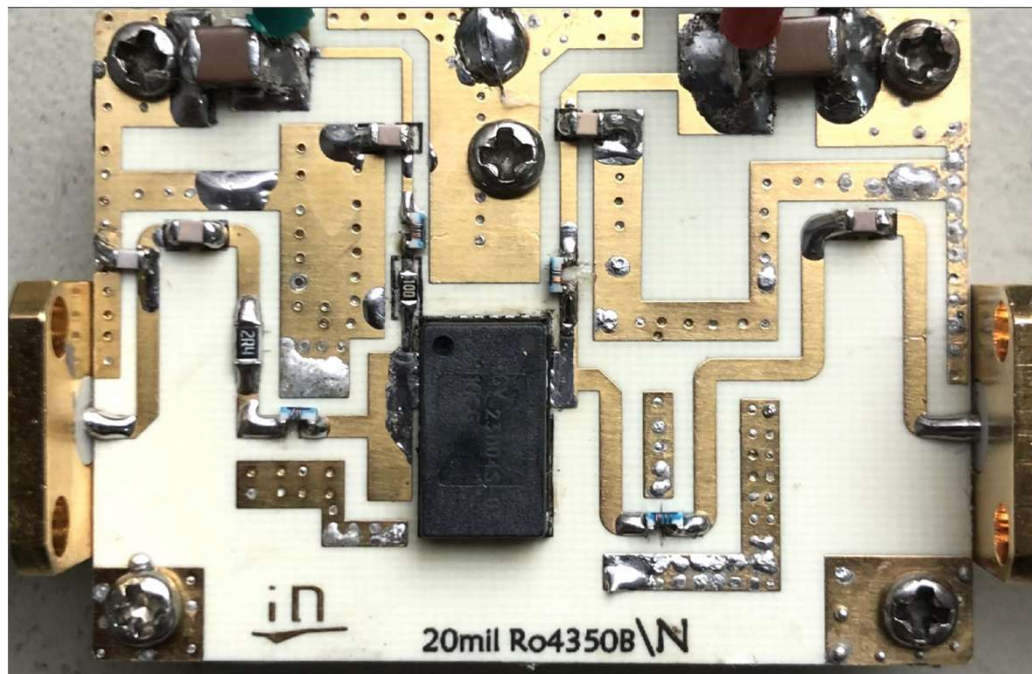
No DPD needed, purely backoff



	ITEH22040C6
2110-2170MHz	35dBm/-47dBc
1805-1880MHz	35dBm/-47dBc

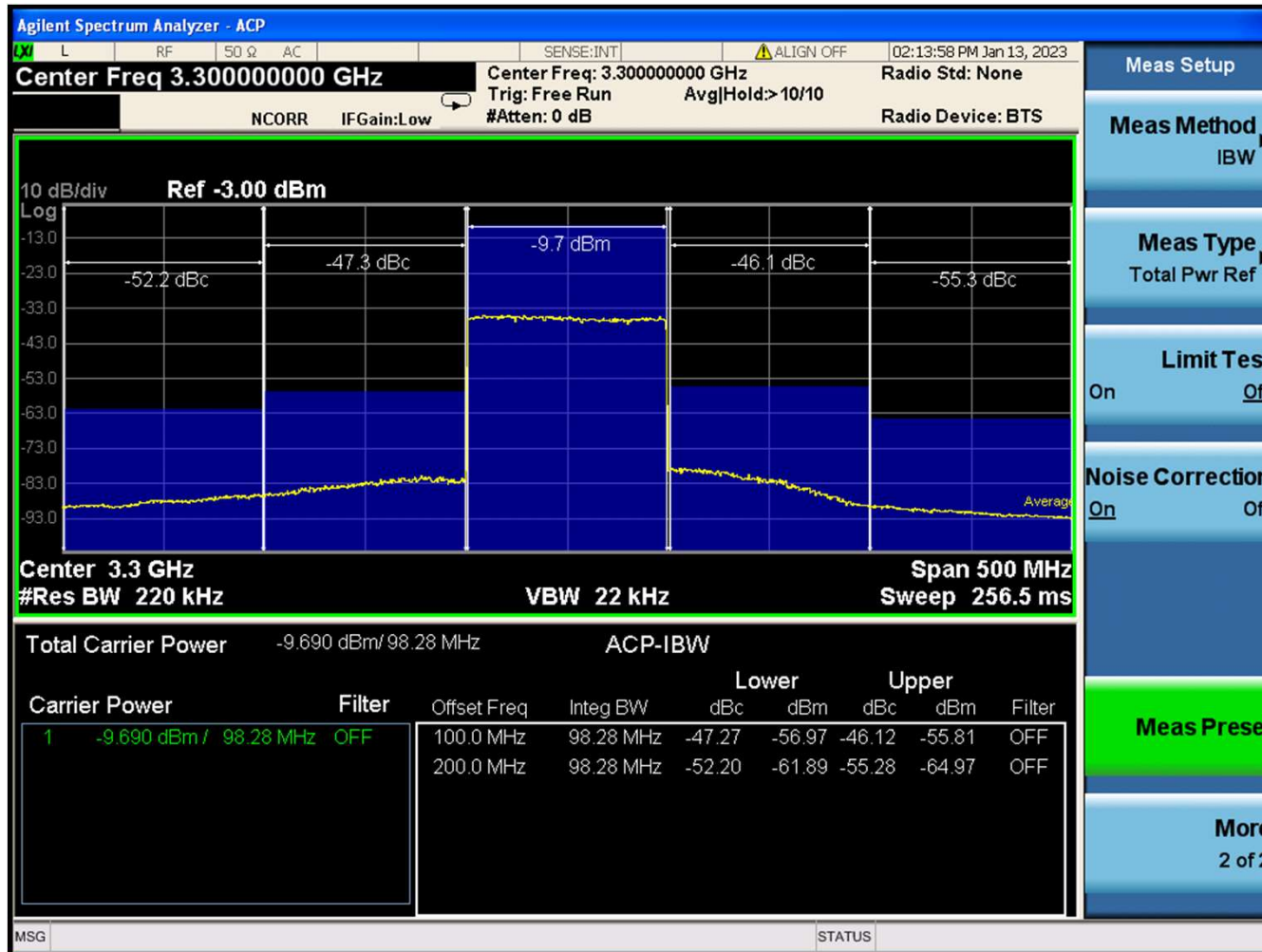
Application report index:
ZXY-22-38&39: ITEH22040C6

No DPD needed, purely backoff



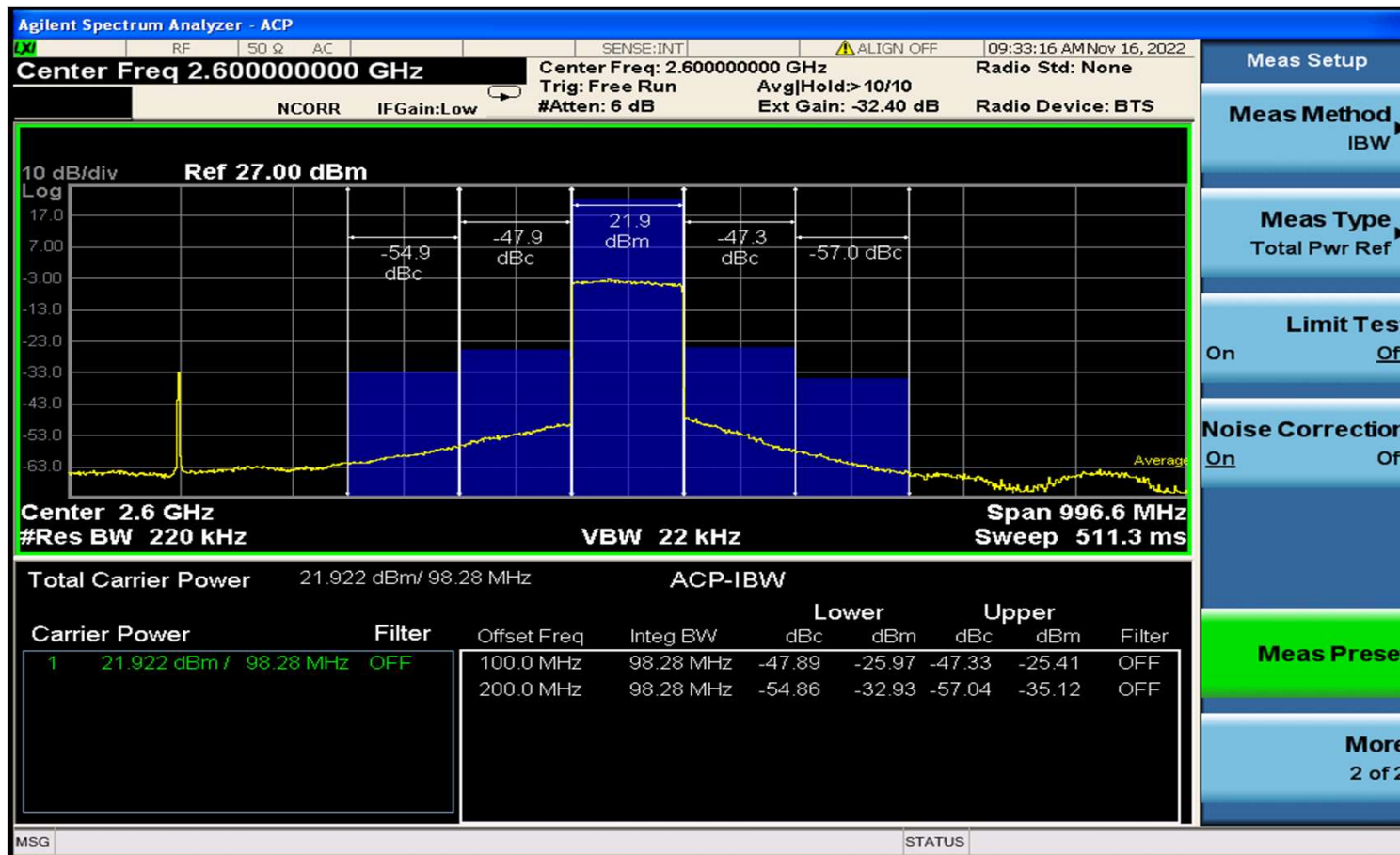
	ITEH38020C6
3300-3600MHz	32dBm/-47dBc (NR)

Application report index:
ZYX-24-25



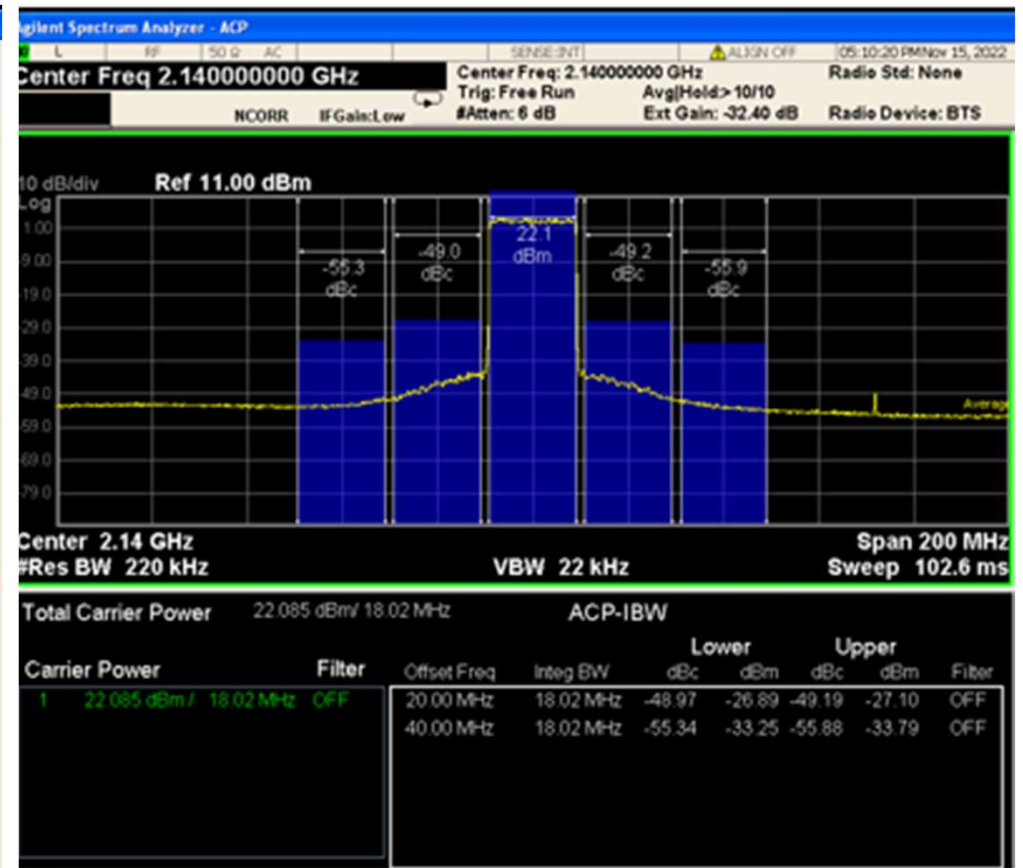
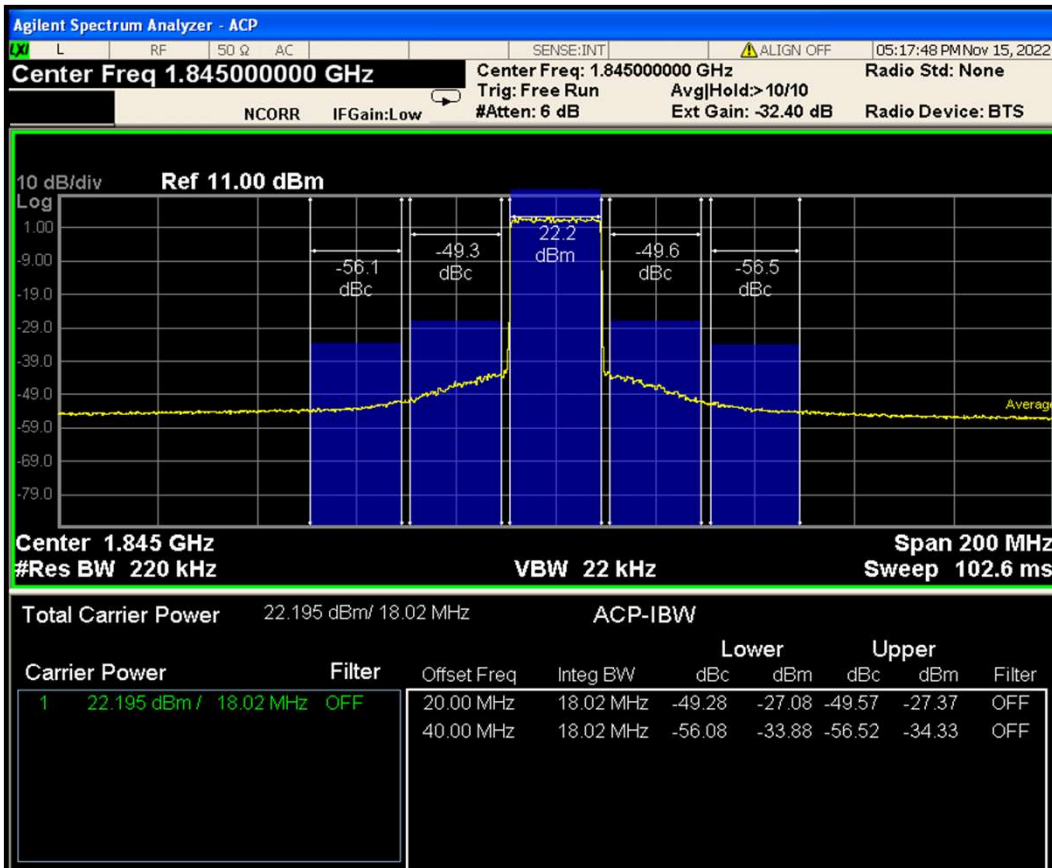
	ITEH27020C6
1805-1880MHz	31dBm/-49dBc (LTE)
2110-2170MHz	31dBm/-49dBc (LTE)
2500-2700MHz	31dBm/-47.5dBc (NR)

Application report index:
ZYX-22-11:



	ITEH27020C6
1805-1880MHz	31dBm/-49dBc (LTE)
2110-2170MHz	31dBm/-49dBc (LTE)
2500-2700MHz	31dBm/-47.5dBc (NR)

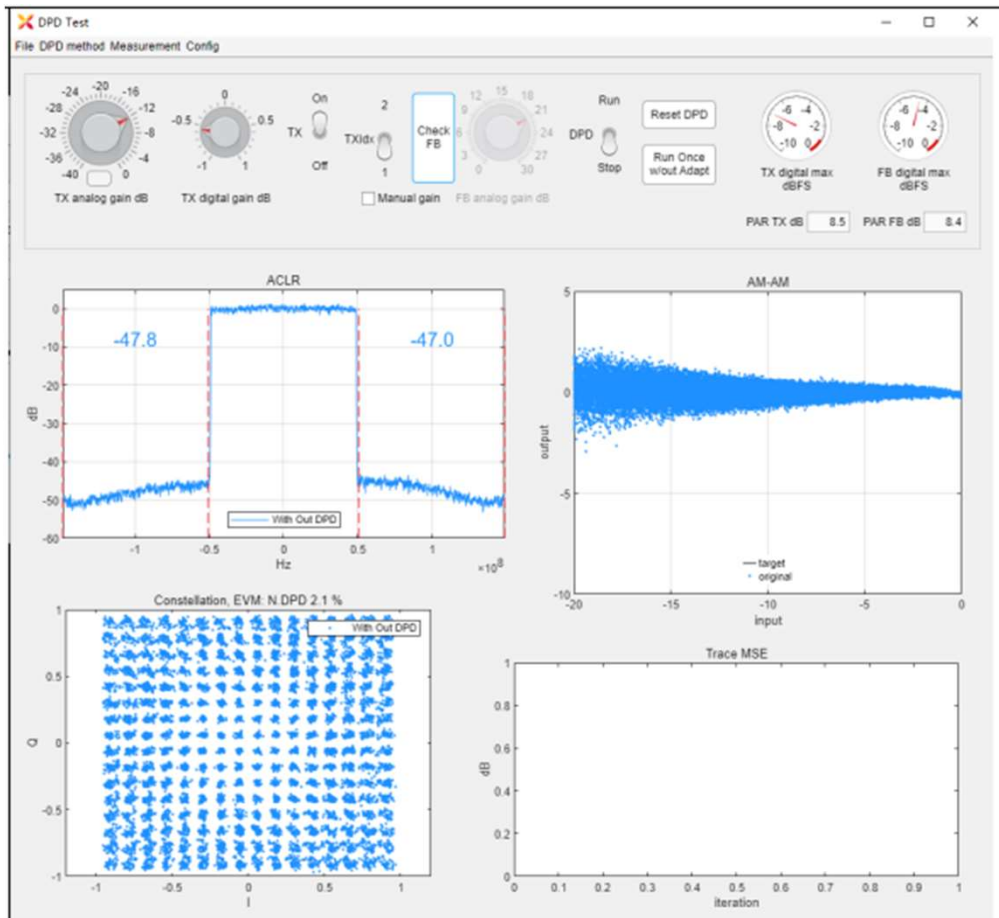
Application report index:
ZYG-22-11:



	ITEH50012C6	ITEH38006C6	ITEH38009C6	ITEH38012C6
4800-5000MHz	29dBm/-47dBc	N/A	N/A	N/A
3400-3800MHz	N/A	28dBm/-49dBc (NR)	29dBm/-47.5dBc (NR)	30dBm/-47.5dBc (NR)
2500-2700MHz	N/A	28dBm/-48.5dBc(NR)	29dBm/-48.5dBc (NR)	30dBm/-48.5dBc (NR)

Example: ITEH38006C6 @2.6GHz under 100MHz NR

Application report index:
 ZYX-22-08: ITEH38006C6
 ZYX-22-09: ITEH38012C6
 ZXY-22-35: ITEH50012C6
 ZYX-22-10: ITEH38020C6



No DPD needed, purely backoff

Highlight:

- ✓ Pavg=0.5-2W output as target where efficiency and gain etc less critical, can be trade off for linearity
- ✓ Difficult for GaAs HBT backoff , costly for GaN.
- ✓ To meet -45dBc ACPR with certain margin at 11-12dB back off from Psat, supporting 5MHz WCDMA to 20MHz LTE to 100MHz NR

	GTAH35012PD
5700-5900MHz	29dBm/-48dBc

Application report index:ZXY-23-02

Freq (MHz)	Pout (dBm)	CCDF (dB)	Ppeak (dBm)	Ppeak (W)	ACPR (dB)	Gain (dB)	Efficiency (%)
5700	30.00	9.59	39.59	9.1	-47.9	12.2	16.6
5800	30.00	9.51	39.51	8.9	-47.8	12.1	17.9
5900	30.00	9.27	39.27	8.5	-46.3	11.9	18.5
5700	29.01	9.78	38.79	7.6	-48.4	12.2	14.6
5800	29.00	9.74	38.74	7.5	-48.5	12.2	15.8
5900	29.00	9.54	38.54	7.1	-48.0	11.9	16.3

