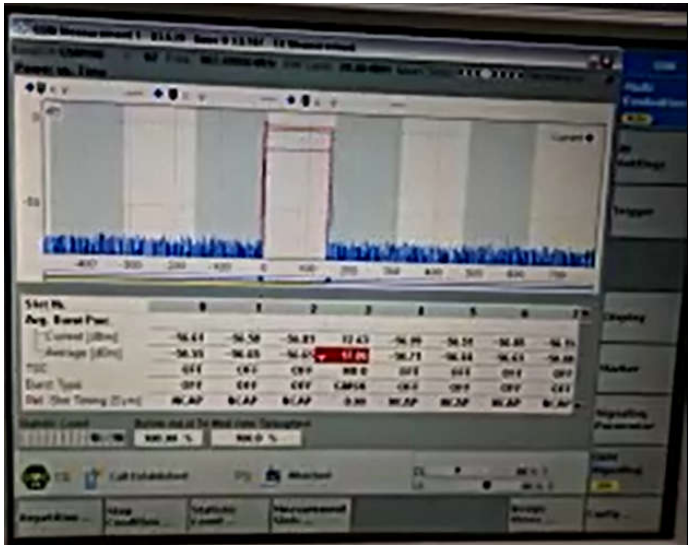
GSM Tx power jumping issue

- **KBA number**：KBA-170428013933
- **Platform**: ALL
- **适用平台**：ALL

- **Symptom**: Customer use MSM8937+WTR2965 to design a project. The GSM RF cal is OK. But during signaling call, GSM call is not easy to be established. When GSM call is connected, the Tx power will jump occasionally no matter what PCL it is set for Tx.

- **问题现象**：客户使用MSM8937+WTR2965设计了一个项目. GSM RF校准是通过的。但是GSM信令call与仪表很难建立起来，在与仪表建立GSM call之后，实际测得的GSM Tx power在上下抖动，表现为PVT曲线中间那条直线上下抖动。



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- **Analysis：**1. check qxdm log, the GSM Tx power is stable from the start to the end.
- **问题分析：**1. 检查qxdm log，发现log中GSM Tx功率始终保持稳定。

00:42:07.014 [0x5A88] GSM DSDS L1 Transmit Burst Metrics
Sub ID = 1
Channel = TCH FS
Training Sequence Number = 0
Timing Advance = 0
Burst Metric[0] {
Frame Number = 542425
ARFCN = 62
Band = GSM 900
TX Power Level = 10
}
Burst Metric[1] {
Frame Number = 542426
ARFCN = 62
Band = GSM 900
TX Power Level = 10
}
Burst Metric[2] {
Frame Number = 542427
ARFCN = 62
Band = GSM 900
TX Power Level = 10
}
Burst Metric[3] {
Frame Number = 542428
ARFCN = 62
Band = GSM 900
TX Power Level = 10
}

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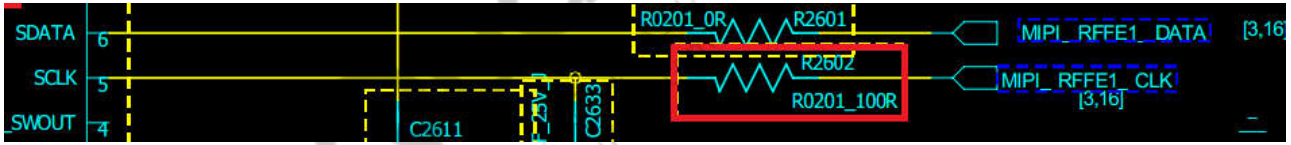
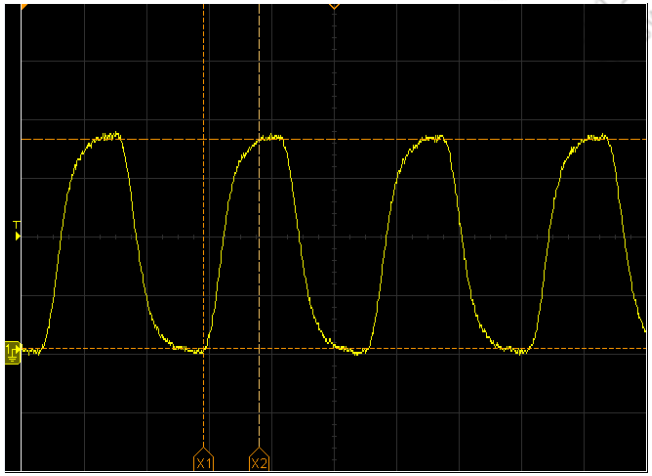
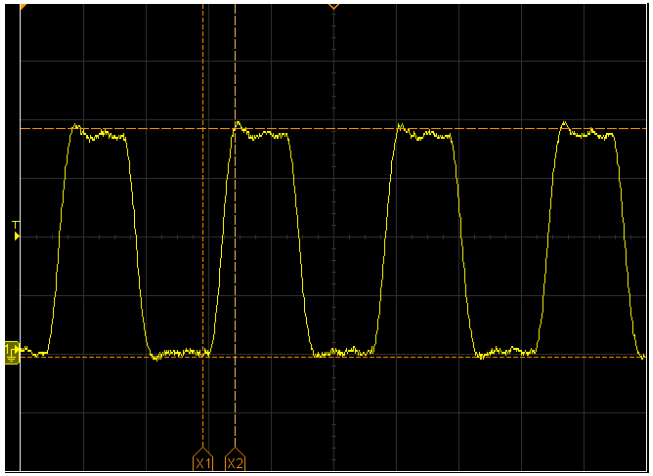
- **Root cause:** After checking the schematic, we found that customer add a 100 ohm + 22 pF RC filters for Phase II PAM's RFFE1_CLK. And the waveform of RFFE1_CLK between with this RC filters and without this RC filters disclose the root cause.
- **问题根源:** 检查原理图,发现客户在前端Phase II PAM的RFFE1_CLK上面串了100 欧姆 和22pF的RC滤波电路。拿示波器测量带这个RC滤波和不带RC滤波的RFFE1_CLK波形。波形的差异揭示了问题根源.





带RC滤波的RFFE1_CLK波形



不带RC滤波的RFFE1_CLK波形

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- **Solution:** .
  - RC filter distort RFFE1_CLK waveform and integrity. It will lead to MIPI command decode error sometimes and lead to such kind of issue.
  - Replace serial 100 ohm with 0 ohm and issue is resolved.
- **解决方案**：
  - RC滤波器使得RFFE1_CLK波形失真，破坏了信号完整性，导致MIPI指令解码错误带来这种问题。
  - 把串接在RFFE1_CLK上的100欧姆 用 0欧姆替换掉，问题解决。