

The World Leader in High Performance Signal Processing Solutions



# **L7201A HMC7950LS6 production die update**

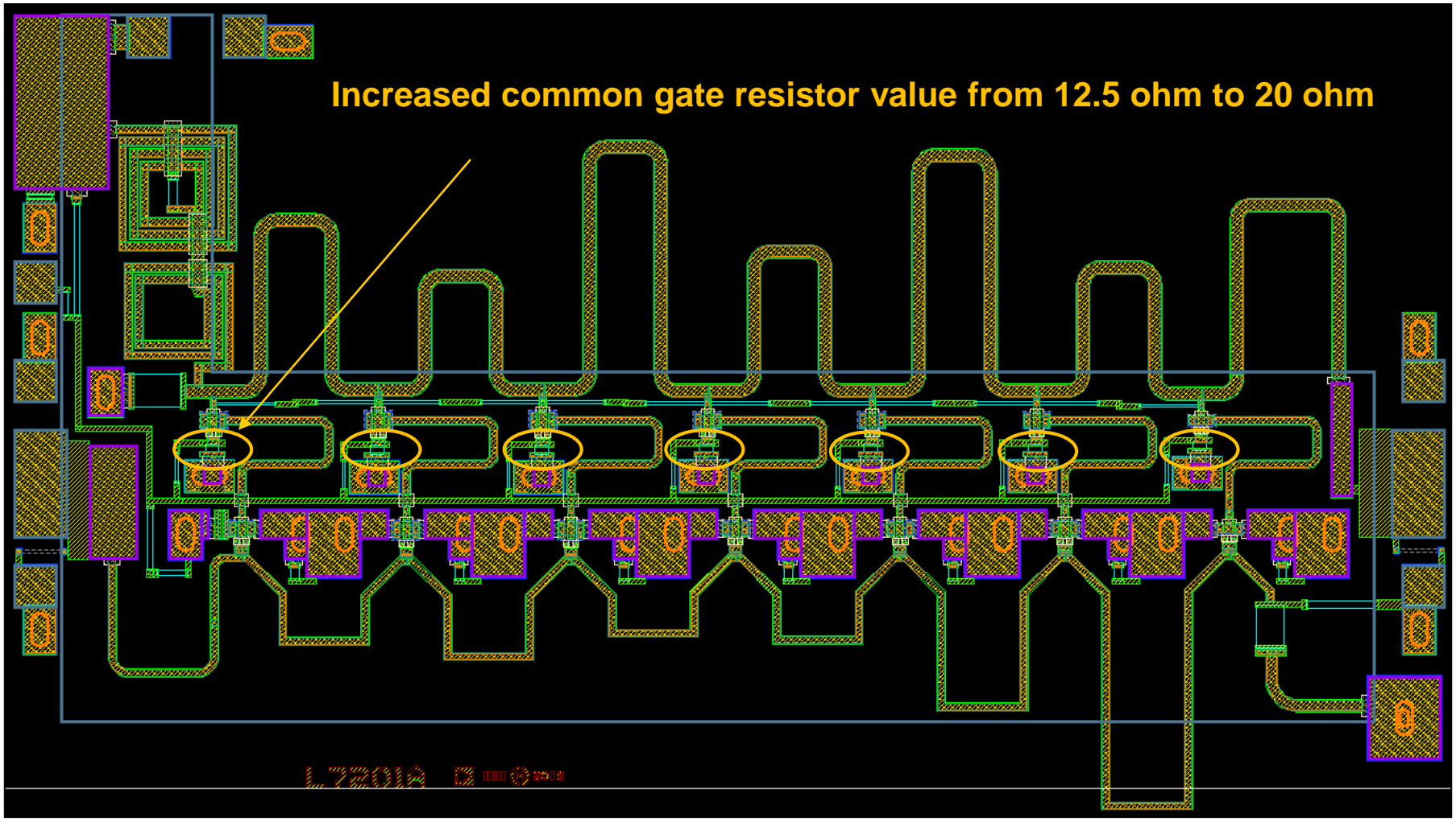
**Oct 27, 2017**

# Summary

- ◆ L7201A, the HMC7950LS6 production update, fixed two issues:
  - Oscillations above 80GHz
  - K-factor smaller than 1 at -40C (an issue caused by fixing the oscillation)
- ◆ Two layers, metal 1 and TFR, were updated.
- ◆ The following slides show where the updates were applied and the expected performance
  - In summary, after the metal fix, the gain at 28GHz will drop about 1dB. The part is expected to be unconditional stable over temperature when biased at  $V_{dd} = 4-7V$ .

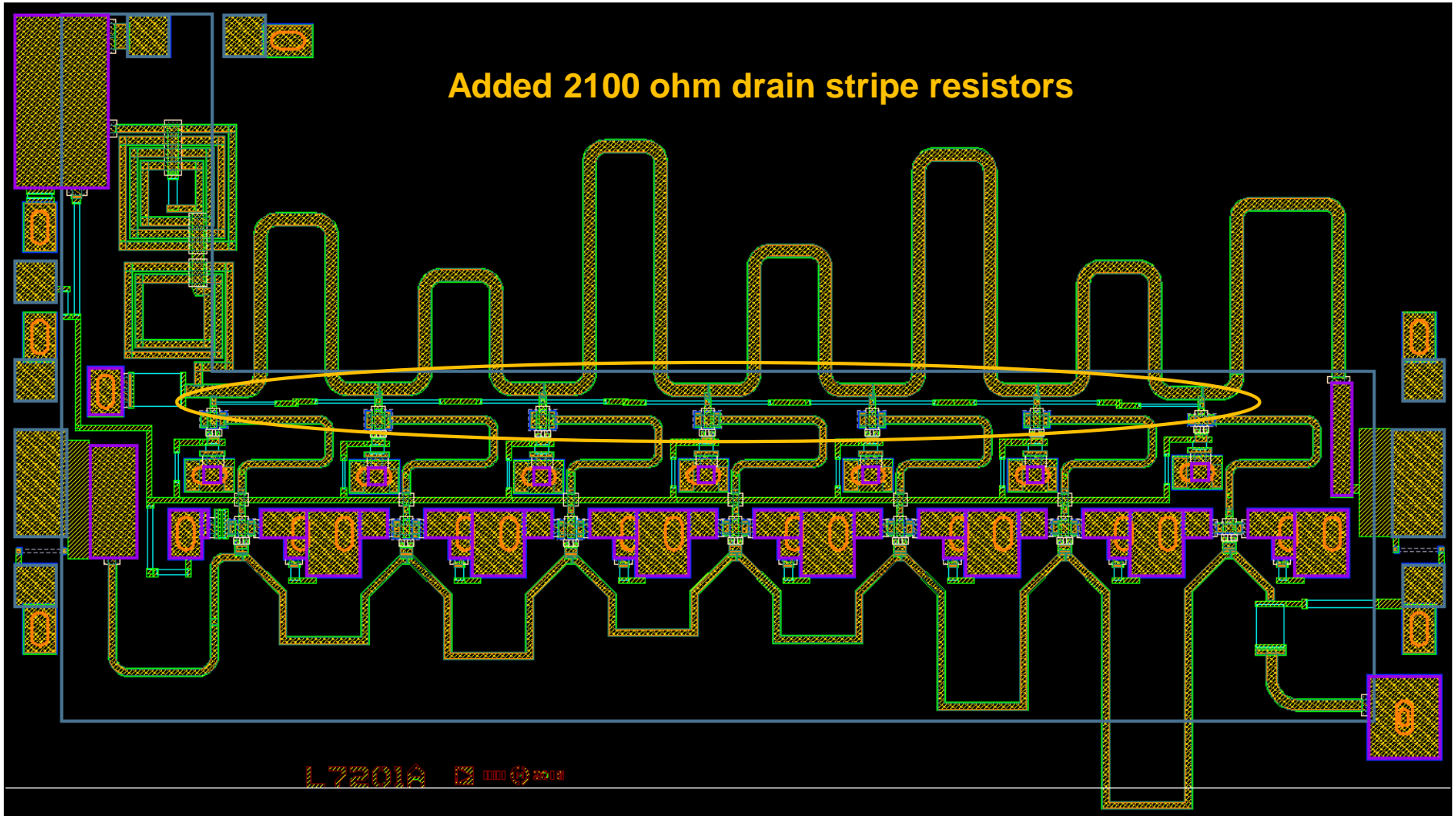
# Layout change #1 – fix the oscillations above 80GHz

Increased common gate resistor value from 12.5 ohm to 20 ohm



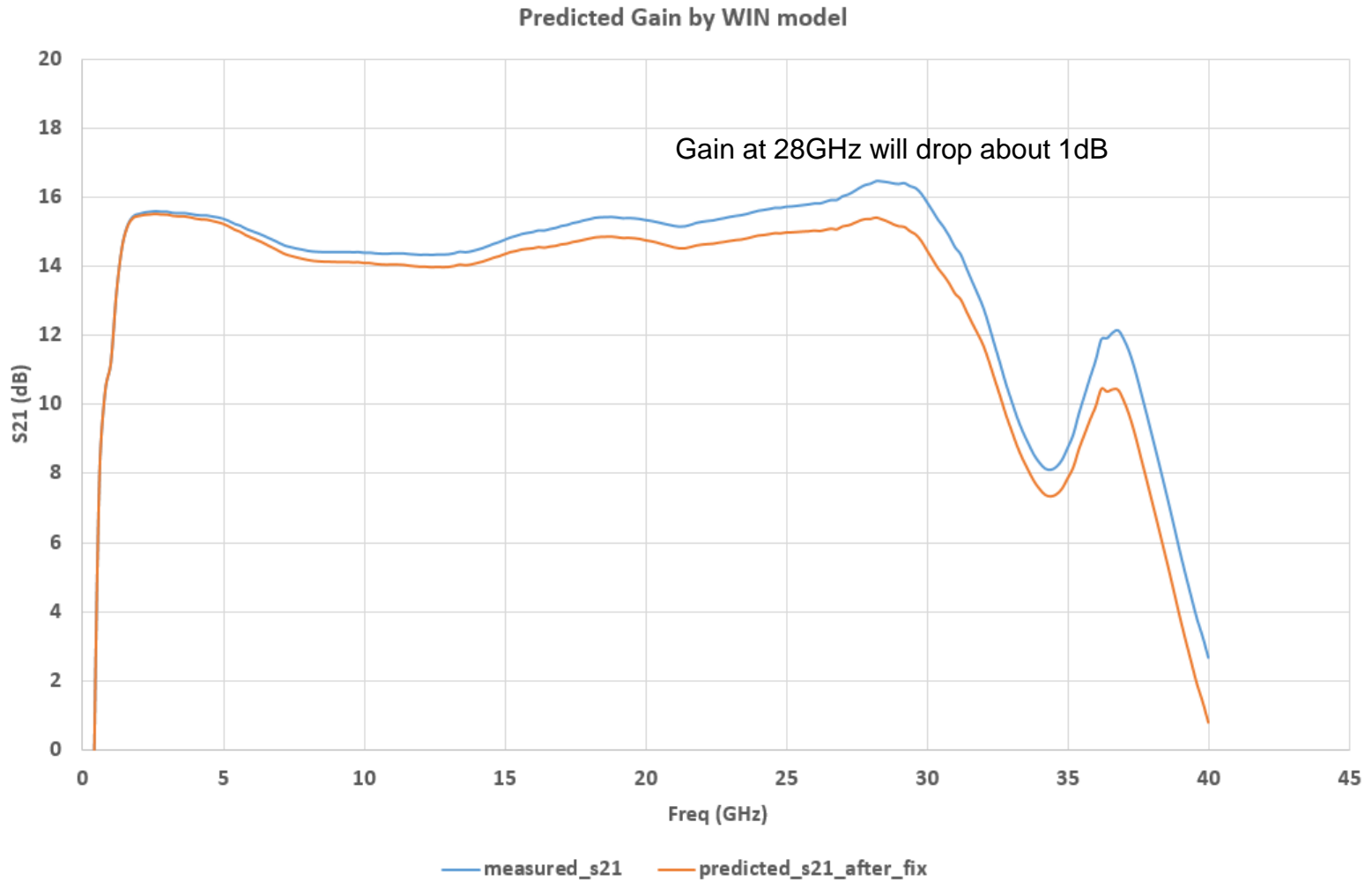
# Layout change #2 – improve the k-factor at -40C

Added 2100 ohm drain stripe resistors

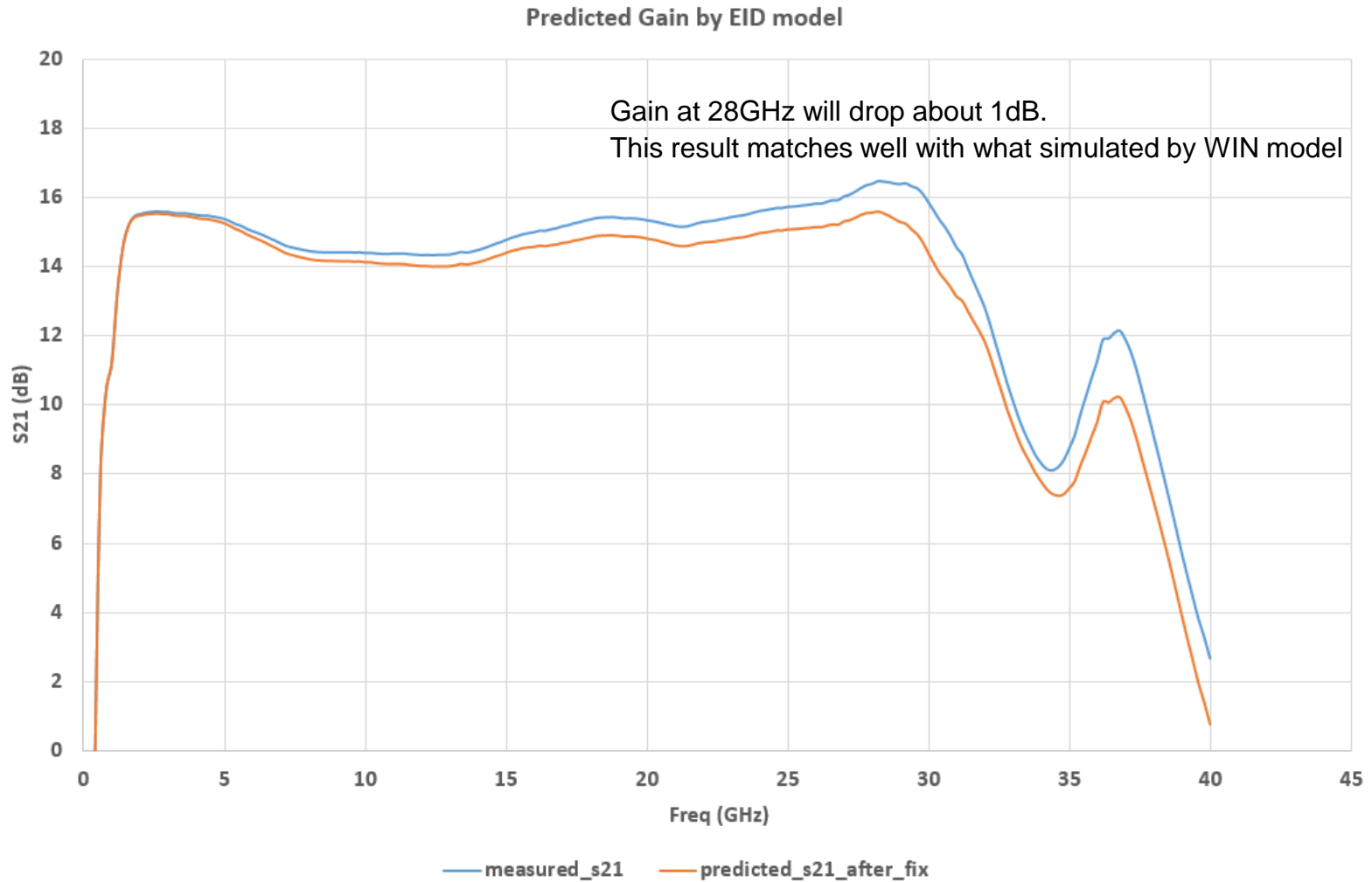


LT2201A

# Expected gain changes – simulated with WIN PP1010 model



# Expected gain changes – simulated with PP1011 EID model





# Expected k-factor improvement at -40C – simulated with PP1011 EID model Vdd=4V

