

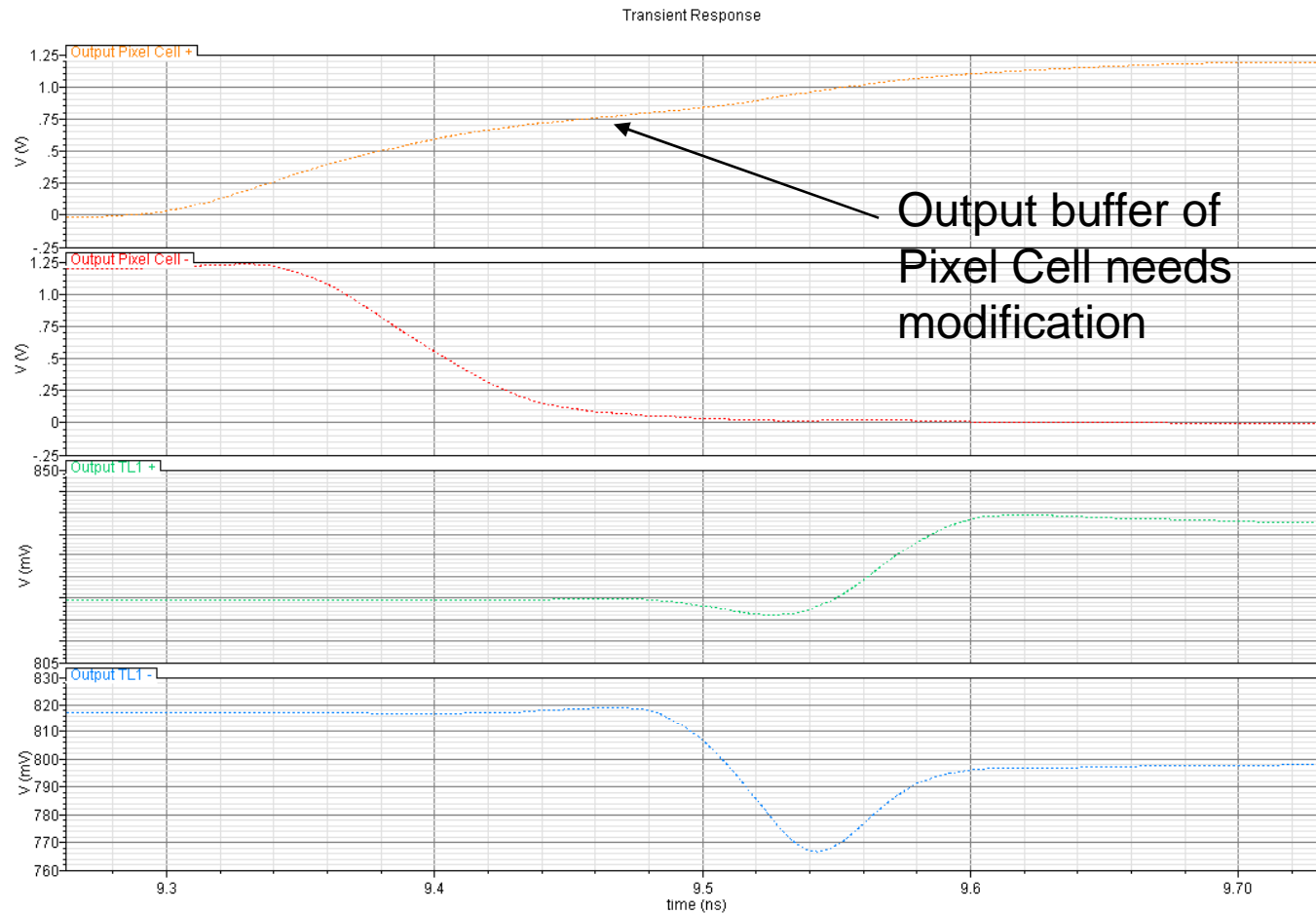
45 pixel simulation

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Full spectre full column simulation

- Signal is emitted from pixel 1, the far remote from the receiver
- Results are worse than 27 pixel column
 - The far end signal is 10 mV,
 - but still with a fast rise time

Signal at the Transmission Line



Signal generated at the 1st pixel of a column of 5 and the 1st of a line of 9 pixels.

Rising time of the signal generated at the pixel ~35ns

Signal rising time increased by using differential driver that speeds up the signal up to ~50ps, but degraded

Degradation of the Transmission Line Signal

Degradation of the Signal through the Transmission Line

If the 1st pixel generates a signal, the Output Signal evolution after the 5 columns,

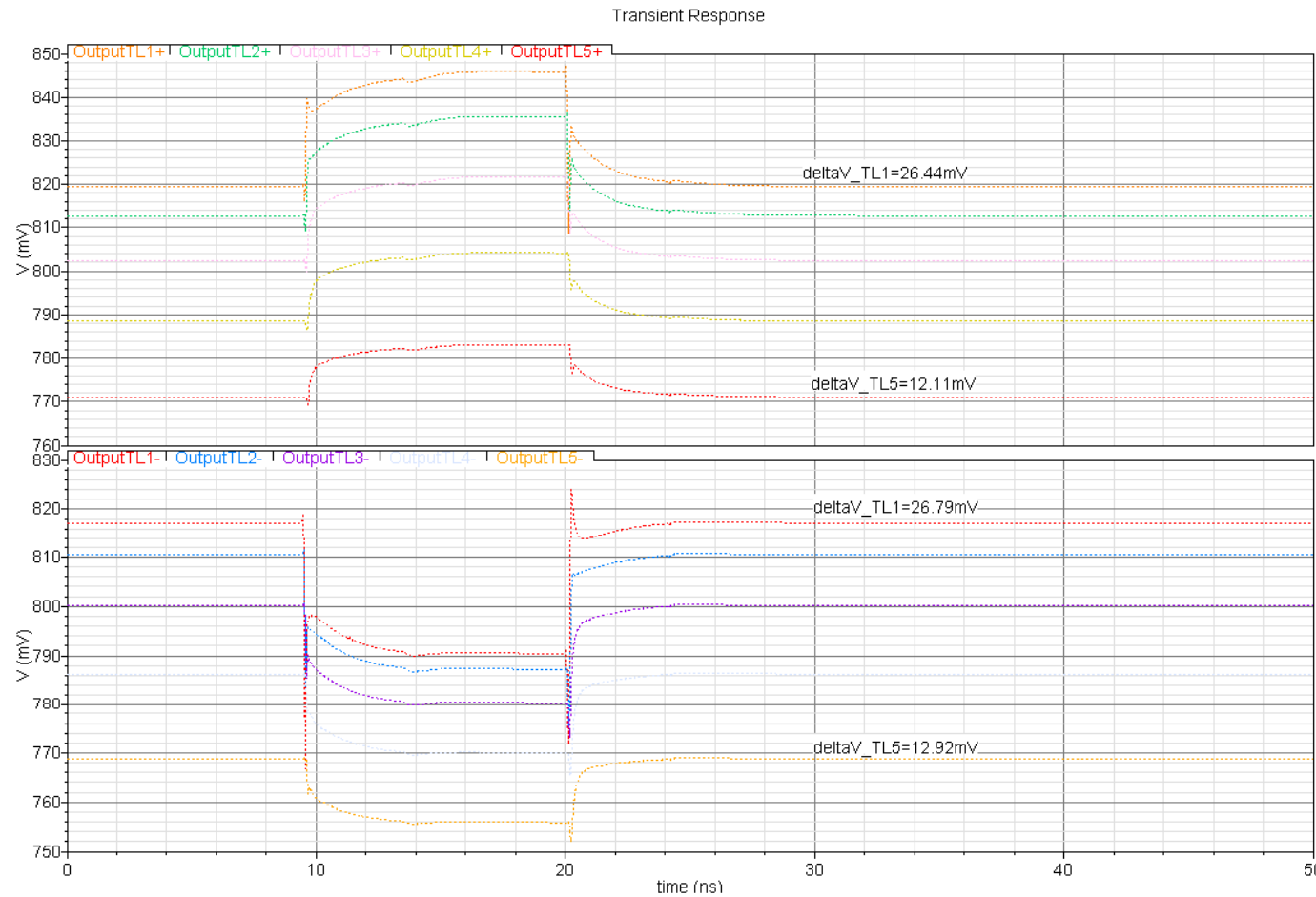
$$\Delta V_{TL1} \sim 26.5 \text{ mV}$$

$$\Delta V_{TL5} \sim 12.5 \text{ mV}$$

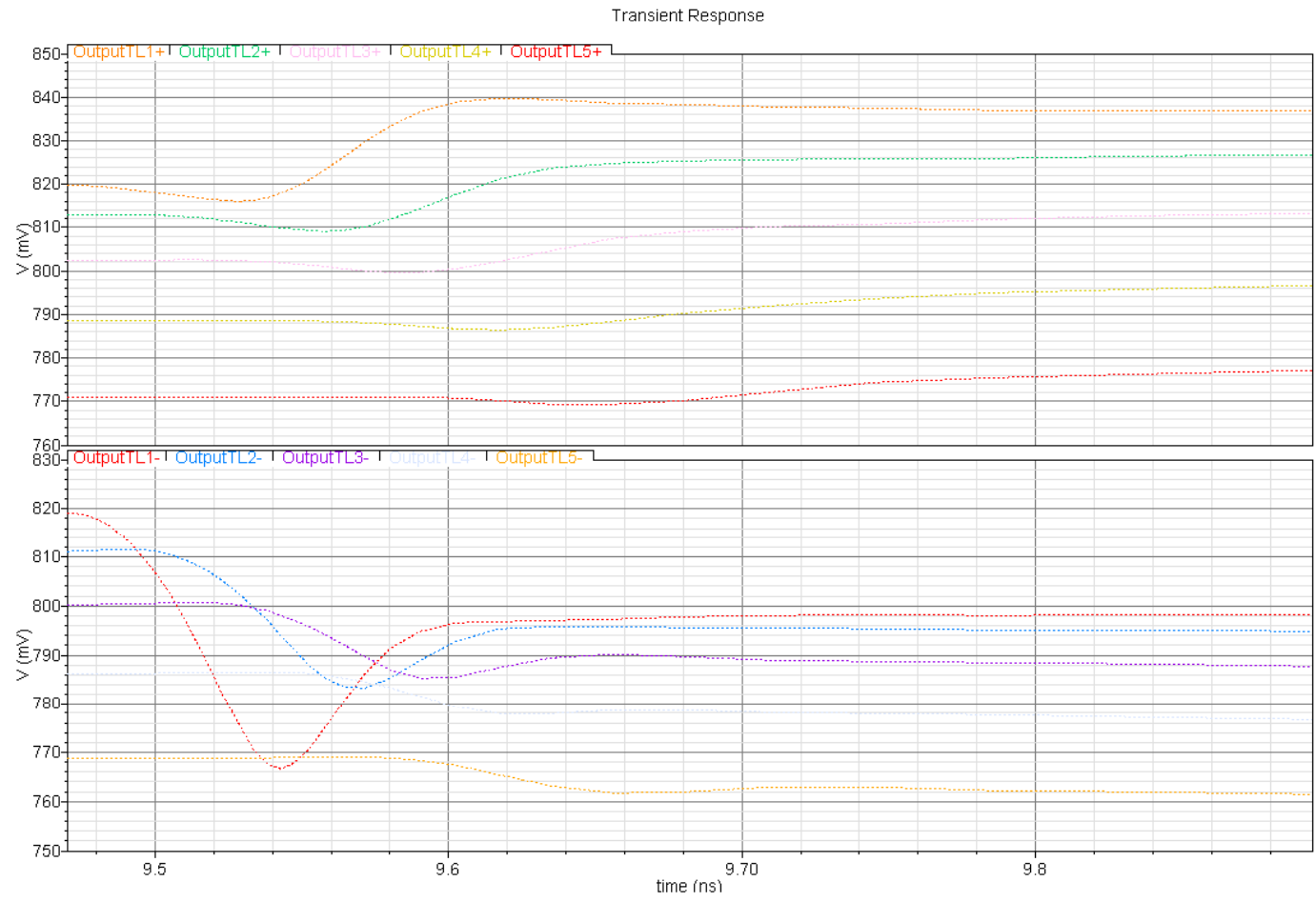
$$V_{CMTL1} \sim 833 \text{ mV}$$

$$V_{CMTL5} \sim 776 \text{ mV}$$

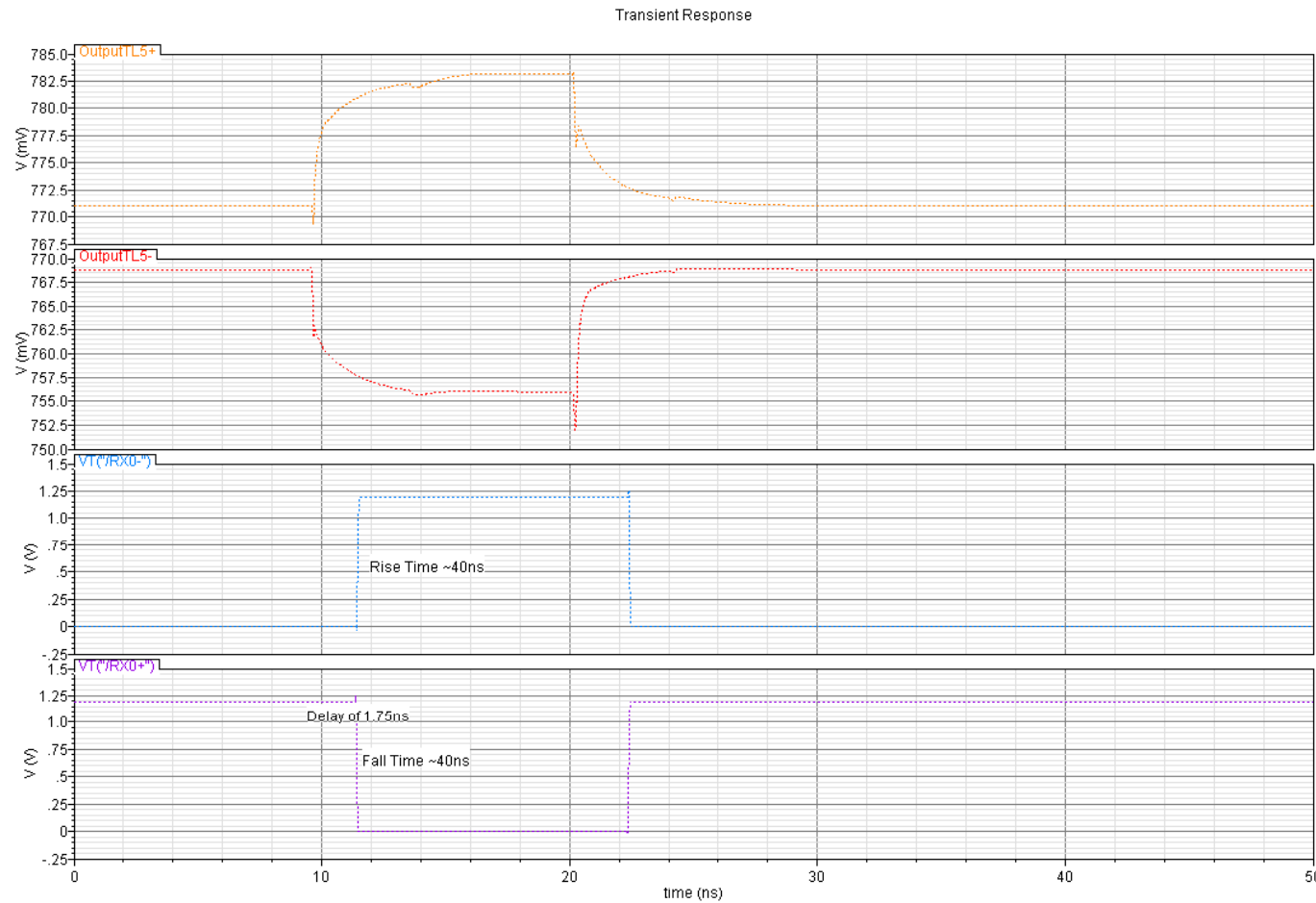
This problem can affect the performance of receiver cell



Detail of the Transmission Line Signal



Signal at the Receiver-cell from the Transmission Line



Signal obtained after 5 columns are connected to the transmission line

$$\Delta V \sim 12\text{mV}$$

$$V_{CM} \sim 776\text{mV}$$

Output Signal obtained from the receiver, to be transmitted and produced by Transmission Line Input