[MPC5xxx] The external bus interface (EBI) fails when the debugger is connected

2026-08-11 - Comments (0) - MPC5xxx / SPC5xx

The cause of this problem is that there are two signals which are multiplexed between debugger and EBI usage: **EVTI** and **EVTO**.

For the MPC5510 series, the function of these signals is controlled by the **EVT_EN** bit in the **NPC_PCR** register, which again is controlled by the debugger. The debugger will per default set the pin function to **EVTI/EVTO**. In order to use the signals for EBI (R/!W and !TA), use the **EVTEN** setting in the `TrOnchip` window:

```
TrOnchip.EVTEN ON ; signals have EVTI/EVTO function. EBI functions disabled (default)
TrOnchip.EVTEN OFF ; signals free for use by EBI or GPIO
```

Important Notes

- If the NEXUS adapter LA-7610 is used, EVTI must be physically disconnected from the debug/trace connector, because the LA-7610 will permanently drive EVTI.
- If the NEXUS adapter LA-7630 is used, the EVTI pin will be tristated if TrOnchip.EVTEN is set to OFF. It is recommended to disconnect EVTI/EVTO from the debug connector anyway (see below).
- If the signals are used for EBI, it is strongly recommended disconnecting EVTI/EVTO from the debug connector. Unterminated signals can cause EBI problems, especially if the debugger is not connected.

- Tags
- MPC55XX