



Nexperia Webinar Series

Selecting the right
translator - Q&A

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Selecting the right translator

Session 1

Regarding the LSF family: Is this family only suitable for open drain lines?

LSF is very convenient for open drain lines but can also be used for push-pull participants if the communication direction is fixed.

Are there any risks of generating a spike when the autosense translator is activated/enabled?

There is no risk for LSF. NXS and NXB have one-shot circuits so if they are triggered by unwanted input voltage spikes, the output could be driven accidentally.

Are these translators unique to Nexperia?

Most of these devices are multi-sourced.

Why not use dual supply translators in all applications?

It definitely would be easier, but these devices require at least one (or more) additional pins for the second voltage. This may boost the package size and add additional costs.

How much current can an LSF device drive?

LSF is a passive device: all the output power must come from either the input side or from the external pull-up resistors.

Can HDMI signals be translated?

Our devices are best suited for the HDMI control signals only. The digital video signals are too fast for these translators.



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Session 2

Of the two Industrial Controller solutions shown, which is better?

Neither is better: just different. One uses open drain outputs which may have slower output. The second option adds the ability of bidirectional control but adds extra pins and cost.

Which logic families can tolerate over voltage inputs?

Most of our logic families (see page 7 of the presentation). But all of them have input losses due to either the external input resistors required for HEF/HC/LV or embedded diodes used in the other families.

Are low threshold input devices more efficient then?

Low threshold devices need no external components but still have power dissipation due to delta Icc. Overall dual supply translators are most efficient in terms of power losses in the translation.

Which of the autosense translators is best suited for high-speed communications?

NXB is the best for high speed as it has both rising and falling edge accelerators. NXS only has rising edge. LSF is the slowest due to its use of open drain outputs (although selection of external resistors can optimize this).

Where can I find a copy of the Nexperia Applications Guide?

This document is not posted on website: please contact your local Nexperia sales person or distributor for a copy.

Regarding limiting the power, is there a need to have either high power diodes or high power resistors between power and signals (based on slide 12)?

Regarding the application using the 74HC4050 with 15V to 5V domain translation - the 100Ω resistor is integrated, therefore there is no need for large resistors/diodes externally. Note however for other devices you may require external protection.

Do we have any reference documentation for IoT Gateway?

There is some application information on IoT on our website at Computing and Consumer | Nexperia. However, since IoT covers a wide range of applications, please contact your local Nexperia sales / distributor for specific technical guidance on your application.

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