

# CAN FD bit-time setting recommendations

**CAN in Automation (CiA) has released the CiA 601-3 document including a spreadsheet.**

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Possible dataphase bit-rates and sample-point positions (Photo: CiA)

[Zoom](#)

The released document provides rules and background information about the setting of bit-times in CAN FD networks. CAN FD is the successor of Classical CAN. Most of the OEMs are migrating to CAN FD in the next couple of years. The CiA 601-3 document comes with a spreadsheet to check, whether your selected bit-rates are possible.

CAN FD frames are transmitted with two speeds. The rules for the arbitration bit-rate are the same as for Classical CAN. In the dataphase additional rules have to be considered for a robust communication, e.g. the phase margin for received and transmitted frames. The released document contains all the necessary formulas to calculate the limits. In addition, it proposes, how to measure them. CiA members can download the documents free-of-charge and non-members can purchase them from CiA Office in Nuremberg (Germany).

The CiA Interest Group (IG) for CAN FD has already released the CiA 601-1 document, which provides general CAN FD physical layer design rules and explanations. The CiA 601-2 document recommends some CAN FD features for the protocol controller, such as the sizes of the bit-timing registers. Additionally, the IG develops some recommendations for cables (CiA 601-6) and common-mode chokes (CiA 110). Under review is the CiA 601-4 document, which specifies signal improvement behavior. It is planned to release it within this year.

The content of the CiA 601 series is also topic of the [CAN FD Tech Days](#) organized by CiA. The next are scheduled in Irvine (US), Prague (CZ), and Milan (IT). Additionally, CiA plans a second CAN FD road show in China. The first one was attended by more than 500 engineers.

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