

# CAN

## CAN Demo

- Clock Setup
  - HSE clock (missing in screenshots)
  - HCLK = 72 MHz
  - APB1 PCLK = 36 MHz
- CAN1 Basic config
  - Activate
  - Select RX & TX pins: PB8, PB9
  - Prescaler = 18
  - CAN time quanta = PCLK / Prescaler
    - = 18 / 36 M = 500 nsec
  - Time Quanta
    - Bit Seg 1 -- 2 Quanta
    - Bit Seg 2 -- 1 Quanta
    - SJW Seg -- 1 Quanta
  - Bit timing = 4 Quanta \* Time Quanta = 2000 ns.
  - Baud Rate = 1 / Bit timing = 1 / 2000 ns = 500000 (bits per sec)
  - Mode = Loopback mode
  - Interrupt Enable = RX0 interrupt -- RX0 FIFO Pending message
- CAN Initialization (In main())
  - MX\_CAN1\_Init(...);
  - HAL\_CAN\_Start(...);
- CAN Receiving:
  - Acceptance Filter Config (In MX\_CAN1\_Init --> After CAN init)
  - HAL\_CAN\_ActivateNotification(...); (After HAL\_CAN\_Start());
  - Callback function: HAL\_CAN\_RxFifo0MsgPendingCallback(...);
- CAN Transmit (In main())
  - Put Msg metadata into TxHeader.

- Put Msg data in TxData -- array.
- Send message (into mailbox using HAL\_CAN\_AddTxMessage()).

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