CAN Software

Spy & Echo Example

AT90CAN32/64/128

Demo. program

Spy:

All frames of the CAN bus (echo frames included) are sent on the RS232 serial links of the DVK90CAB1 board (UART_0 & UART_1). «HyperTerminal» Windows can display them.
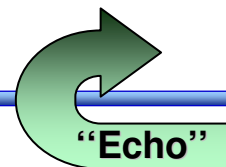
Other node(s)

"Spy"

"Echo"

Terminal

DVK90CAN1

"can_spy_echo_example"

CAN bus

Echo:

Each frame of the CAN bus (echo frames excepted) is re-sent with the following protocol:
- $ID_{echo} = ID_{received} + 1$
- 8-byte data frame
- 2 last bytes = CAN-STAMP register

CAN node simulation

Demo. environment

■ **IDE**:

AVR Studio 4.13.528 (or higher)

AVRGCC plug-in

CAN plug-in

■ **C Compiler:**

WinAVR-20070122

■ **Default target:**

DVK90CAN1 Atmel development board

■ **Configuration:**
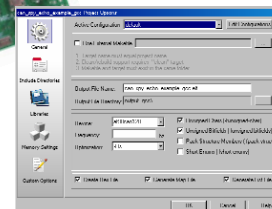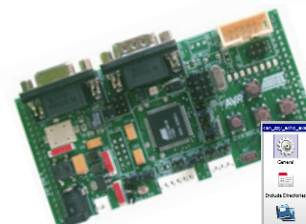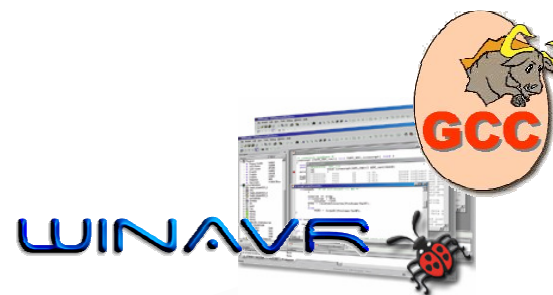
▪ **Software**:

Described in «*config.h*» in main root

▪ **Hardware**:

Described in «*..\libraries\lib_board\dvk90can_board.h*» (called by «*config.h*»)

▪ **Default setting:**

- Microcontroller: **AT90CAN128** at **8** MHz (external crystal - no internal RC)
- Both **UART_0** & **_1** available - baudrate: **38400** bds (8-bit, no parity, 1 stop-bit)
- CAN bitrate: **automatic detection** (both CAN 2.0A & 2.0B)
- Both Spy & Echo modes available

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"CAN Rx & Tx" screen shot example

❑ If **no** key is pushed during RESET ➔ **Spy & Echo** mode

❑ If **some** key is pushed during RESET ➔ **Spy-only** mode

❑ **CAN ID = 0 simulates a CAN Error**

Spy & Echo mode

Spy-only mode

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"Spy" screen shot example

Spy & Echo mode ➡
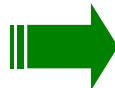
```
-O- ======= CAN SPY ECHO EXAMPLE ======= -O-


      /___|_____|
     /___| | |
    / /\| | | |\___|___|
   / /| | | | | | | | |___|
  / /_| | | | | | | | | |_|_|
 /___|_| |_| |_| |_| |___| |_/
,-------------------------------,
| AT90CANxx Library Version 3.20   / (R)
'-------------------------------'

-O ======= Echo + UART in CAN ANALYZER ======= O-

-O- RxCAN @ 0284: 0x12345678(Ext.), L=8, 00-11-22-33-44-55-66-77
-O- TxCAN @ 2678: 0x12345679(Ext.), L=8, 00-11-22-33-44-55-02-84
-O- RxCAN @ 2E55:      0x012(Std.), L=5, Remote
-O- TxCAN @ 4DAA:      0x013(Std.), L=8, 00-11-22-33-44-00-2E-55
-O- RxCAN @ C541:      0x066(Std.), L=4, DE-AD-BE-EF
-O- TxCAN @ E50B:      0x067(Std.), L=8, DE-AD-BE-EF-00-00-C5-41
-O- RxCAN @ E229: 0x00000700(Ext.), L=0, Remote
-O- TxCAN @ 00F4: 0x00000701(Ext.), L=8, 00-00-00-00-00-00-E2-29
-O- RxCAN @ 7E19: 0x00002006(Ext.), L=6, 28-03-20-06-18-33
-O- TxCAN @ AOOD: 0x00002007(Ext.), L=8, 28-03-20-06-18-33-7E-19
    _
```

```
-O- ======= CAN SPY ECHO EXAMPLE ======= -O-

      /_____|
     /___| | |
    / /\ | |____\ |___|___|
   / /| | | | | | | | |___| |
  /___|_| |_| |_| |_| |___| |_/
,-------------------------------,
| AT90CANxx Library Version 3.20   / (R)
'-------------------------------'

-O ======= UART in CAN ANALYZER ======= O-

-O- RxCAN @ 0285: 0x12345678(Ext.), L=8, 00-11-22-33-44-55-66-77
-O- RxCAN @ 97D7:      0x012(Std.), L=5, Remote
-O- RxCAN @ C88F:      0x066(Std.), L=4, DE-AD-BE-EF
-O- RxCAN @ B922: 0x00000700(Ext.), L=0, Remote
-O- RxCAN @ 4E95: 0x00002006(Ext.), L=6, 28-03-20-06-18-33
```

⬅ **Spy-only** mode

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