CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/main.c - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
  - Binaries
  - Includes
  - Release
  - targetConfigs
  - canfd_external_read_write.c
  - canfd_transceiver.c
  - main.c
  - canfd_external_read_write_am263px
  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

canfd_extern... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```c
#include <stdlib.h>
#include "ti_drivers_config.h"
#include "ti_board_config.h"
#include <string.h>
#include <kernel/dpl/SemaphoreP.h>
#include "ti_drivers_open_close.h"
#include "ti_board_open_close.h"


CANFD_MsgObjHandle          txMsgObjHandle;
CANFD_MsgObjHandle          rxMsgObjHandle;
CANFD_MessageObject         txMsgObject;
CANFD_MessageObject         rxMsgObject;

int32_t                     status = SystemP_SUCCESS;
SemaphoreP_Object    gMcanTxDoneSem, gMcanRxDoneSem;

int rx = 0;
int32_t                     status1;
int32_t x,y;

void Can_Init();
void mcanEnableTransceiver(void);
void Can_Tx();

uint8_t                     rxData[128] = {0};
uint8_t                     txData[128U] = {0xA1, 0x1A, 0xFF, 0xFF, 0xC1, 0x1C, 0xB1, 0x1B,
                                            0xA2, 0x2A, 0xFF, 0xFF, 0xC2, 0x2C, 0xB2, 0x2B,
                                            0xA3, 0x3A, 0xFF, 0xFF, 0xC3, 0x3C, 0xB3, 0x3B,
                                            0xA4, 0x4A, 0xFF, 0xFF, 0xC4, 0x4C, 0xB4, 0x4B,
                                            0xA5, 0x5A, 0xFF, 0xFF, 0xC5, 0x5C, 0xB5, 0x5B,
                                            0xA6, 0x6A, 0xFF, 0xFF, 0xC6, 0x6C, 0xB6, 0x6B,
                                            0xA7, 0x7A, 0xFF, 0xFF, 0xC7, 0x7C, 0xB7, 0x7B,
                                            0xA8, 0x8A, 0xFF, 0xFF, 0xC8, 0x8C, 0xB8, 0x8B,
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

```
tx completed
```

Writable | Smart Insert | 142 : 1 : 5331

Type here to search

CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/main.c - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
  - Binaries
  - Includes
  - Release
  - targetConfigs
  - canfd_external_read_write.c
  - canfd_transceiver.c
  - main.c
  - canfd_external_read_write_am263px
  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

canfd_extem... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
71
72
73
74
75
76
77 int done;
78 int rcvd = 0;
79 int flag = 0;
80 int sum;
81
82
83 int main(void)
84 {
85     System_init();
86     Board_init();
87     Drivers_open();
88     Board_driversOpen();
89     mcanEnableTransceiver();
90
91     Can_Init();
92     TimerP_start(gTimerBaseAddr[CONFIG_TIMER0]);
93
94      while(1)
95     {
96
97     }
98
99
100
101     Board_deinit();
102     System_deinit();
103
104     return 0;
105 }
```

```
0xA5, 0x5A, 0xFF, 0xFF, 0xC5, 0x5C, 0xB5, 0x5B,
0xA6, 0x6A, 0xFF, 0xFF, 0xC6, 0x6C, 0xB6, 0x6B,
0xA7, 0x7A, 0xFF, 0xFF, 0xC7, 0x7C, 0xB7, 0x7B,
0xA8, 0x8A, 0xFF, 0xFF, 0xC8, 0x8C, 0xB8, 0x8B
};
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

```
tx completed
```

Writable | Smart Insert | 142 : 1 : 5331

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/main.c - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
  - Binaries
  - Includes
  - Release
  - targetConfigs
  - canfd_external_read_write.c
  - canfd_transceiver.c
  - main.c
  - canfd_external_read_write_am263px
  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

canfd_extem... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
101     Board_deinit();
102     System_deinit();
103
104     return 0;
105 }
106
107 void Can_Init()
108 {
109     status = SemaphoreP_constructBinary(&gMcanTxDoneSem, 0);
110     DebugP_assert(SystemP_SUCCESS == status);
111
112     DebugP_log("\r\n[MCAN] CANFD External read - write test, application started ...\r\n");
113
114
115     txMsgObject.startMsgId = 0;
116     txMsgObject.endMsgId = 0x11;
117     txMsgObject.direction = CANFD_Direction_TX;
118     txMsgObject.msgIdType = CANFD_MCANXidType_29_BIT;
119     txMsgObject.dataLength = 64;
120     txMsgObject.args       = NULL;
121     status = CANFD_createMsgObject (gCanfdHandle[CONFIG_MCAN0], &txMsgObject);
122     if (status != SystemP_SUCCESS)
123     {
124         DebugP_log ("Error: CANFD create Tx message object failed\r\n");
125         return;
126     }
127     txMsgObjHandle = &txMsgObject;
128
129     rxMsgObject.startMsgId =0x1;
130     rxMsgObject.endMsgId = 0x2;
131     rxMsgObject.direction = CANFD_Direction_RX;
132     rxMsgObject.msgIdType = CANFD_MCANXidType_29_BIT;
133     rxMsgObject.args       = (uint8_t*) rxData;
134     rxMsgObject.dataLength = 64;
135     status = CANFD_createMsgObject (gCanfdHandle[CONFIG_MCAN0], &rxMsgObject);
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

```
tx completed
```

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/main.c - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
  - Binaries
  - Includes
  - Release
  - targetConfigs
  - canfd_external_read_write.c
  - canfd_transceiver.c
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  - canfd_external_read_write_am263px
  - example.syscfg
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- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

canfd_extern... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb... | 2

```
116     txMsgObject.endMsgId = 0x11;
117     txMsgObject.direction = CANFD_Direction_TX;
118     txMsgObject.msgIdType = CANFD_MCANXidType_29_BIT;
119     txMsgObject.dataLength = 64;
120     txMsgObject.args        = NULL;
121     status = CANFD_createMsgObject (gCanfdHandle[CONFIG_MCAN0], &txMsgObject);
122     if (status != SystemP_SUCCESS)
123     {
124         DebugP_log ("Error: CANFD create Tx message object failed\r\n");
125         return;
126     }
127     txMsgObjHandle = &txMsgObject;
128
129     rxMsgObject.startMsgId =0x1;
130     rxMsgObject.endMsgId = 0x2;
131     rxMsgObject.direction = CANFD_Direction_RX;
132     rxMsgObject.msgIdType = CANFD_MCANXidType_29_BIT;
133     rxMsgObject.args        = (uint8_t*) rxData;
134     rxMsgObject.dataLength = 64;
135     status = CANFD_createMsgObject (gCanfdHandle[CONFIG_MCAN0], &rxMsgObject);
136     if (status != SystemP_SUCCESS)
137     {
138         DebugP_log ("Error: CANFD create Rx message object failed\r\n");
139         return;
140     }
141     rxMsgObjHandle = &rxMsgObject;
142
143     CANFD_createRxRangeMsgObject(gCanfdHandle[CONFIG_MCAN0], &rxMsgObject);
144
145
146
147
148
149 }
150
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

tx completed

Writable | Smart Insert | 142 : 1 : 5331

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/canfd_external_read_write.c - Code Composer Studio

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Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- canfd_external_read_write_am263px
  - Generated Source
  - Binaries
  - Includes
  - Release
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  - main.c
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  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

*canfd_exte... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
47 */
48
49 #include <string.h>
50 #include <kernel/dpl/SemaphoreP.h>
51 #include "ti_drivers_config.h"
52 #include "ti_drivers_open_close.h"
53 #include "ti_board_open_close.h"
54
55 extern CANFD_MsgObjHandle           txMsgObjHandle;
56 extern CANFD_MsgObjHandle           rxMsgObjHandle;
57 extern SemaphoreP_Object            gMcanTxDoneSem, gMcanRxDoneSem;
58 extern CANFD_MessageObject          txMsgObject;
59 extern CANFD_MessageObject          rxMsgObject;
60 extern int rx;
61 int count = 0;
62 extern int rcvd ;
63 extern int flag;
64 int status1,status2;
65 extern uint8_t                      rxData[128];
66 extern uint8_t                      txData[128U];
67 int tx;
68
69 void Can_tx();
70 void Can_Rx();
71
72
73 void Can_Tx()
74 {
75
76         if(tx == 0)
77         {       tx = 1;
78               status2 += CANFD_write (txMsgObjHandle,
79                                       txMsgObject.startMsgId,
80                                       CANFD_MCANFrameType_FD,
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

tx completed

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/canfd_external_read_write.c - Code Composer Studio

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Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- canfd_external_read_write_am263px
  - Generated Source
  - Binaries
  - Includes
  - Release
  - targetConfigs
  - canfd_external_read_write.c
  - canfd_transceiver.c
  - main.c
  - canfd_external_read_write_am263px
  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

*canfd_exte... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
73 void Can_Tx()
74 {
75
76         if(tx == 0)
77         {       tx = 1;
78             status2 += CANFD_write (txMsgObjHandle,
79                                     txMsgObject.startMsgId,
80                                     CANFD_MCANFrameType_FD,
81                                     0,
82                                     &txData[count]); // 23062025 changed
83             count = count+ 64;
84             if(count == 128)
85                 {
86                     count = 0;
87                 }
88             txMsgObject.startMsgId = txMsgObject.startMsgId +1;
89
90
91         }
92
93
94
95
96
97 void App_CANFDTransferCallback(void *args, CANFD_Reason reason)
98 {
99
100
101     if (reason == CANFD_Reason_TX_COMPLETION)
102     {
103         Can_tx();
104     }
105
106     if (reason == CANFD_Reason_RX)
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

tx completed

Writable | Smart Insert | 76 : 11 : 3109

Type here to search

CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/canfd_external_read_write.c - Code Composer Studio

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Project Explorer

- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
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  - canfd_external_read_write.c
  - canfd_transceiver.c
  - main.c
  - canfd_external_read_write_am263px
  - example.syscfg
  - makefile_ccs_bootimage_gen
  - makefile.defs
  - README.html
  - syscfg_c.rov.xs
- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

*canfd_exte... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
 98 {
 99
100
101     if (reason == CANFD_Reason_TX_COMPLETION)
102     {
103         Can_tx();
104     }
105
106     if (reason == CANFD_Reason_RX)
107     {
108         if(rcvd == 0)
109         { flag = 1;
110           Can_Rx();
111         }
112     }
113
114
115 }
116
117 void App_CANFDErrorCallback(void *args, CANFD_Reason reason)
118 {
119     /* Do nothing. */
120 }
121
122
123 void Can_tx()
124 {
125
126     printf("tx completed\n");
127     tx = 0;
128
129 }
130
131 void Can_Rx()
132 {
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

```
tx completed
```

Writable | Smart Insert | 76 : 11 : 3109

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/canfd_external_read_write.c - Code Composer Studio

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- can_app_lp
- can_external_read_write_am263px-lp_r5
- **canfd_external_read_write_am263px**
  - Generated Source
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  - targetConfigs
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- canfd_loopback_polling_am263px-lp_r5
- enet_l2_cpsw_switch_am263px-lp_r5fss

*canfd_exte... | example.syscfg | *main.c | CanApp.c | example.syscfg | main.c | canfd_loopb...

```
117 void App_CANFDErrorCallback(void *args, CANFD_Reason reason)
118 {
119     /* Do nothing. */
120 }
121
122
123 void Can_tx()
124 {
125
126     printf("tx completed\n");
127     tx = 0;
128
129 }
130
131 void Can_Rx()
132 {
133
134     if(rcvd == 0)
135     {
136     rcvd = 1;
137     status1 = CANFD_read(rxMsgObjHandle, 8, &rxData[rx]);
138
139     printf("rcvd\n");
140     rx = rx+64;
141     if(rx == 128)
142     {
143         rx = 0;
144     }
145     rcvd = 0;
146     }
147
148
149 }
150
151
```

Console

canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang:CIO

```
tx completed
```

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/example.syscfg - Code Composer Studio

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*canfd_external_read_write.c | example.syscfg | canfd.h | *main.c | CanApp_Startup.c | CanApp.c | example.syscfg | main.c | canfd_loopback_polling.c

Aa

TI DRIVER PORTING LAYER (...
- Clock 1/1
- Debug Log 1/1
- DPL CFG 1/1
- MPU ARMv7 4/16
- TIMER 1

TI DRIVERS (31)
- ADC
- ADC SAFETY CHECKER
- ADC_EXTCH_XBAR
- ADC_R
- BOOTLOADER
- CMPSS
- DAC
- ECAP
- EDMA 1/1
- EPWM
- EQEP
- FSI_RX
- FSI_TX
- GPIO
- HSMCLIENT
- I2C 1/4
- IPC
- LIN
- MCAN 1
- MCSPI
- MCU_LBIST
- MCU_PBIST

AM263P4-Q1 › Software › TIMER

Type search text...

TIMER (1 Added)

CONFIG_TIMER0

Name	CONFIG_TIMER0
Input Clock Frequency (Hz)	25000000
Input Clock Source	WUCPUCLK
Tick Period (usecs)	1000
Actual Tick Period (usecs)	1000
DMA Trigger Enable	☐
Start Timer After Setup	☐
Interrupt Mode Enable	☑
Interrupt Priority	4
Timer Callback	Can_Tx
Timer Instance	RTI1

Other Dependencies

Type here to search

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CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/example.syscfg - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

*canfd_external_read_write.c | example.syscfg | canfd.h | *main.c | CanApp_Startup.c | CanApp.c | example.syscfg | main.c | canfd_loopback_polling.c

Aa .*

AM263P4-Q1 › Software › MCAN

TIMER 1

TI DRIVERS (31)

- ADC
- ADC SAFETY CHECKER
- ADC_EXTCH_XBAR
- ADC_R
- BOOTLOADER
- CMPSS
- DAC
- ECAP
- EDMA 1/1
- EPWM
- EQEP
- FSI_RX
- FSI_TX
- GPIO
- HSMCLIENT
- I2C 1/4
- IPC
- LIN
- MCAN 1
- MCSPI
- MCU_LBIST
- MCU_PBIST
- MMCSD
- OSPI
- PRU (ICSS)
- RESOLVER
- RTI

Name	CONFIG_MCAN0
SDK Infra	HLD

General Configuration

Operating Mode	Interrupt Mode
Transfer Mode	Blocking
Interrupt Priority	4
Enable CAN FD Mode	☑
Enable Bit Rate Switching	☑
Enable Loopback Mode	☐
Loopback Mode	External
Select Option for TLV Type	CANFD Option MCAN Loopback
Enable Transmit Pause	☐
Enable Edge Filtering	☐
Enable Protocol Exception Handling	☐
Disable Automatic Retransmission	☑
Enable Wakeup Request	☑
Enable Auto-Wakeup	☑
Enable Emulation/Debug Suspend	☐
Enable Emulation Suspend Fast Ack	☐
Enable Clock Stop Fast Acke	☐
Enable Transmit Pause	☐
Enable Edge Filtering	☐

Type here to search

CCS_1208_WORKSPACE - canfd_external_read_write_am263px-lp_r5fss0-0_nortos_ti-arm-clang/example.syscfg - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help

*canfd_external_read_write.c | example.syscfg | canfd.h | *main.c | CanApp_Startup.c | CanApp.c | example.syscfg | main.c | canfd_loopback_

Aa .*

AM263P4-Q1 › Software › MCAN

TIMER 1

TI DRIVERS (31)

- ADC
- ADC SAFETY CHECKER
- ADC_EXTCH_XBAR
- ADC_R
- BOOTLOADER
- CMPSS
- DAC
- ECAP
- EDMA 1/1
- EPWM
- EQEP
- FSI_RX
- FSI_TX
- GPIO
- HSMCLIENT
- I2C 1/4
- IPC
- LIN
- MCAN 1
- MCSPI
- MCU_LBIST
- MCU_PBIST
- MMCSD
- OSPI
- PRU (ICSS)
- RESOLVER
- RTI

Message RAM Configuration

Ecc Config

Configure Bit-rate For CANFD

Nominal Baud Rate Pre-scaler	3
NominalProp Segment Value	7
NominalPhase Segment1 Value	8
NominalPhase Segment2 Value	2
Nominal (Re)Sync Jump Width	0
Effective Nom Bitrate (Kbps)	1000
Sampling Point For Nom Bitrate	85
Prescalar Value for Data Bitrate	1
Prop Segment Value	4
Phase Segment1 Value	4
Phase Segment2 Value	9
Data Sync Jump Width	0
Effective Data Bitrate (Kbps)	2000
Data Bitrate Sampling Point	50

MCAN Instance: MCAN3

Signals | Pins

- MCAN RX Pin(MCAN3_RX): UART0_CTSn/B7
- MCAN TX Pin(MCAN3_TX): UART0_RTSn/C7

Type here to search