puneethj (/s/profile/0050X000007vn9WQAQ) (Community Member) to ST Community (/s/profile/0050X000007vh8GQAQ) (ST Employee): asked a question.
Edited by STM Community October 10, 2018 at 4:00 PM (/s/question/0D50X00009XkfSlSAJ/can-filters)

CAN FILTERS

Posted on November 11, 2015 at 17:50

Hi every one, especially Mr.Clive, today i have problem with CAN FILTERS i want to allow all IDS from 100 to 1FF in other words block all messages after 0x0200 here is my code, Please help me, Thanks in advance

```
1  void CAN_FilterConfiguration(void) {
2  CAN_FilterInitTypeDef CAN_FilterInitStructure;
3  /* CAN filter configuration */
4  // CAN_FilterInitStructure.CAN_FilterNumber = 0; // CAN 1
5  CAN_FilterInitStructure.CAN_FilterNumber = 14; // CAN 2
6  CAN_FilterInitStructure.CAN_FilterFIFOAssignment = CAN_FIFO0; // FIFO = 0
7  CAN_FilterInitStructure.CAN_FilterMode = CAN_FilterMode_IdMask; // Filter mode = identifier mask based filtering
8  CAN_FilterInitStructure.CAN_FilterScale = CAN_FilterScale_16bit;
9  CAN_FilterInitStructure.CAN_FilterIdHigh = 0x0100 << 5;
10 CAN_FilterInitStructure.CAN_FilterIdLow = 0;
11 CAN_FilterInitStructure.CAN_FilterMaskIdHigh = 0x01ff << 5;
12 CAN_FilterInitStructure.CAN_FilterMaskIdLow = 0;
13 CAN_FilterInitStructure.CAN_FilterActivation = ENABLE;
14 //Interrrupts
15 CAN_ITConfig(CAN2,CAN_IT_FMP0,ENABLE);
16 CAN_FilterInit(&CAN_FilterInitStructure);
17 }
```

#!stm32f4-disco #can-filter

STM32 MCUs (/s/topic/0TO0X000000BSqSWAW/) CAN (/s/topic/0TO0X000000BThxWAG/)

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Tesla DeLorean (/s/profile/0050X000007vuogQAA) (Community Member)
Edited by STM Community October 12, 2018 at 12:45 PM

Posted on November 11, 2015 at 18:28

I suspect this will do the job

```
1  void CAN_FilterConfiguration(void)
2  {
3  CAN_FilterInitTypeDef CAN_FilterInitStructure;
4  /* CAN filter configuration */
5  //CAN_FilterInitStructure.CAN_FilterNumber = 0; // CAN 1 [0..13]
6  CAN_FilterInitStructure.CAN_FilterNumber = 14; // CAN 2 [.27]
7  CAN_FilterInitStructure.CAN_FilterFIFOAssignment = CAN_FIFO0; // FIFO = 0
8  CAN_FilterInitStructure.CAN_FilterMode = CAN_FilterMode_IdMask; // Filter mode = identifier mask based filtering
9  CAN_FilterInitStructure.CAN_FilterScale = CAN_FilterScale_32bit;
10 CAN_FilterInitStructure.CAN_FilterActivation = ENABLE;
11 /* Filter 0x.0x1FF */
12 CAN_FilterInitStructure.CAN_FilterIdHigh = 0x100 << 5; //11-bit ID in top bits
13 CAN_FilterInitStructure.CAN_FilterIdLow = 0;
14 CAN_FilterInitStructure.CAN_FilterMaskIdHigh = 0x700 << 5;
15 CAN_FilterInitStructure.CAN_FilterMaskIdLow = 0;
16 /* Interrupts */
17
18 CAN_ITConfig(CAN2,CAN_IT_FMP0,ENABLE);
19 CAN_FilterInit(&CAN_FilterInitStructure);
20 }
```

Like Reply

puneethj (/s/profile/0050X000007vn9WQAQ) (Community Member)
Edited by STM Community October 12, 2018 at 12:45 PM

Posted on November 12, 2015 at 10:51

Wow!!! it works it works 😀 thank you very much clive, but can u please explain this command

```
1  CAN_FilterInitStructure.CAN_FilterMaskIdHigh = 0x700 << 5;
```

please it would help me understand CAn filters and i need not trouble you whenver i need to change something.. Thank you once again....

Like Reply

Tesla DeLorean (/s/profile/0050X000007vuogQAA) (Community Member)
Edited by STM Community July 21, 2018 at 5:42 PM

Posted on November 12, 2015 at 11:25

It's doing a Bitwise AND and COMPARE, the ID is in the top 11-bits of the High 16-bit registers.

ie if ((ID & MASK) == COMP) then AddToFifo

so ((ID & 0x700) == 0x100)

and the equivalent to ((ID >= 0x100) && (ID <= 0x1FF))

Like Reply

CJami (/s/profile/0050X000008w82XQAQ) (Community Member)
a year ago

Hi Clive,

i am facing a problem, i want to accept all messages to CAN except with the ID 0x17F00010 that uses a EXT ID. all my other messages are StdID. i am able to create filter that wastes the messages with IDs 0x10 but that also filters messages with ID like 0x710. need your help. Thanks in advance.

Like Reply

T J (/s/profile/0050X000007vvBqQAI) (Community Member)
Edited by ST Community July 24, 2018 at 4:32 PM

Posted on January 28, 2017 at 01:41

My processor is the '091, the reference manual shows we are using a bxCAN peripheral,
I have found the same declarations, but with the bxCAN flavor, spelled slightly differently.
For the most concise understanding of the CAN functionality
In my ref manual for the '091 processor, RM0091
chapter 29.7 bxCAN functional description is excellent.

Like Reply

Tesla DeLorean (/s/profile/0050X000007vuogQAA) (Community Member)
Edited by ST Community July 26, 2018 at 1:13 PM

Posted on January 28, 2017 at 01:49

Not sure if the MDK is using it's own middleware. This code example is for the SPL, but similar structures exist within the HAL
http://www.st.com/en/embedded-software/stsw-stm32048.html (http://www.st.com/en/embedded-software/stsw-stm32048.html)

Like Reply

Eugenia Suarez (/s/profile/0050X000007vsAHQAY) (Community Member)
Edited by ST Community July 24, 2018 at 4:32 PM

Posted on March 22, 2017 at 12:51

Well, Clive I would like to know how to calculate the mask value and the ID filter field I need if for filtering from 0x0 to 0x14 i e. I can't get how do you get 0x700, I will be grateful if you explain me some of the steps that you have follow.
Thanks in advance.

Like Reply

Tesla DeLorean (/s/profile/0050X000007vuogQAA) (Community Member)
Edited by ST Community July 26, 2018 at 1:14 PM

Posted on March 22, 2017 at 14:26

The questioner wants to select messages in the range 0x100..0x1FF, and the filter is doing a Masking AND operation followed by a comparison.
ie (0x123 & 0x700) = 0x100
To get messages in the 0x000..0x01F range, I'd use a mask of 0x7E0 and match of 0x000
ie (0x012 & 0x7E0) = 0x000 and (0x123 & 0x7E0) != 0x000

Like Reply

Tesla DeLorean (/s/profile/0050X000007vuogQAA) (Community Member)
Edited November 28, 2018 at 2:49 PM

Posted on March 22, 2017 at 14:31

```
1  // CAN Filtering Simulation - sourcer32@gmail.com
2  #include <windows.h>
3  #include <stdio.h>
4  #define COMP 0x100
```

```
#define MASK 0x700
int main(int argc, char **argv)
{
  int id;
  for(id=0; id<0x800; id++)
    if ((id & MASK) == COMP) printf("%03X\n", id);
  return(1);
}

```

Edit: Fixed formatting errors introduced by sloppy forum transition.

Like Reply

Eugenia Suarez (/s/profile/0050X000007vsAHQAY) (Community Member)
Edited by STM Community July 27, 2018 at 9:11 AM

Posted on March 22, 2017 at 15:28

Lot of thanks, Clive!

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