



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# XMC1300 Boot Kit

Getting Started



# Agenda (1/2)

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- Example – Blinky based on DAVE™ APPs

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– Example – Blinky based on XMC Lib

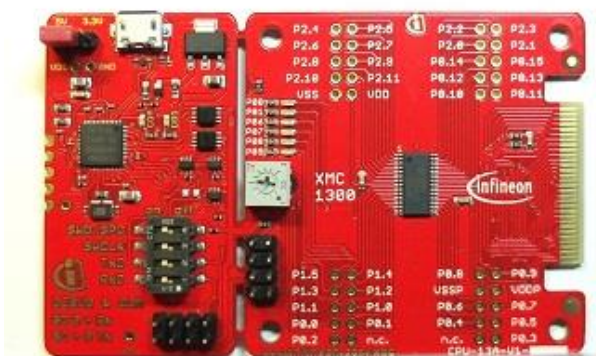
8

– Example – Blinky based on DAVE™ APPs

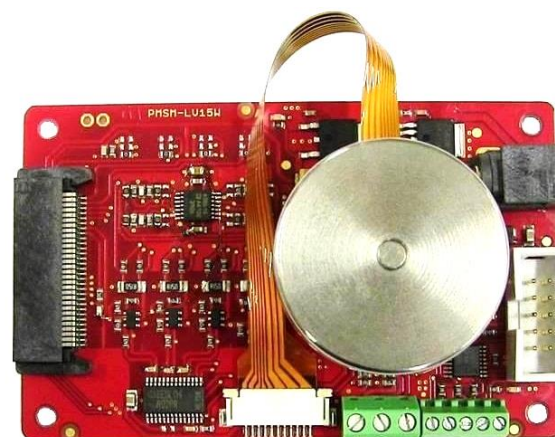
# Kit Overview (1/2)

## › XMC1300 Boot Kit

- Consists of an XMC1300 CPU Card
  - Supported Application Card examples: PMSM\_LV15W Card
- (Application Card is orderable separately or as part of another Application Kit)



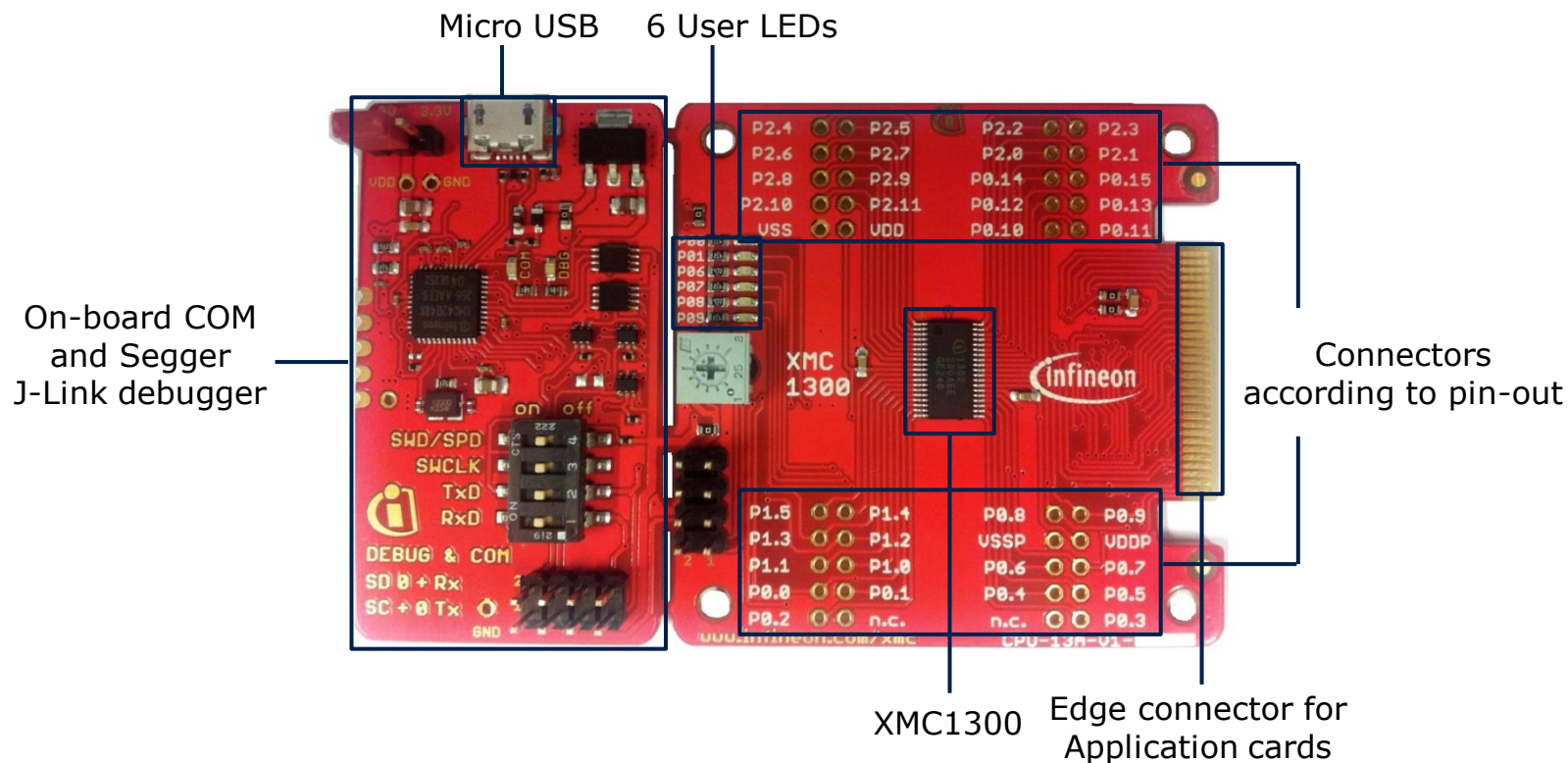
XMC1300 CPU Card



PMSM\_LV15W Card

# Kit Overview (2/2)

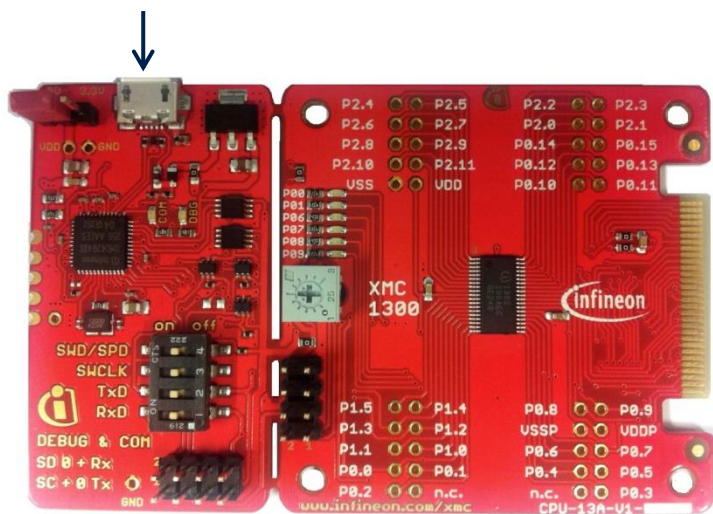
## > XMC1300 CPU Card



# Hardware Overview

- › Connect XMC1300 CPU Card to PC via USB cable
- › CPU Card is powered up (as indicated by LED on the card)

CPU Card powered via USB cable



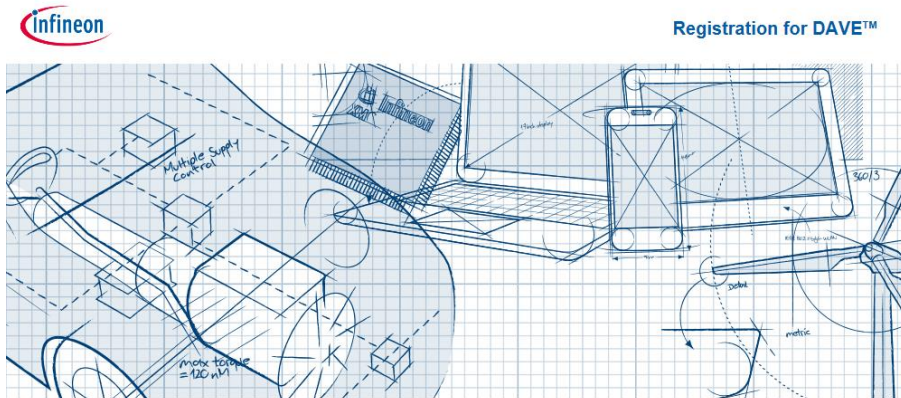
- › Note: Supported Application Card must be connected to the CPU card

connected to

- › Boot Modes available
  - UART Bootstrap-Loader Mode
  - User Mode (Halt After Reset)
  - User Mode (Debug) **Default Mode of device on Boot Kit**
  - User Mode (Productive)
  
- › Boot Modes can be configured via:
  - DAVE™
    - Download DAVE™  
[DAVE™ v4.1.2 download](#)
  - MemTool
    - Download MemTool  
[MemTool v4.65.exe download](#)
  
- › For more information on how to configure the BMI value, please refer to the XMC1000 Tooling Guide.

# Tooling Overview – DAVE™ (1/5)

- › DAVE™ download package is available at:  
<http://infineon-community.com/LP=400>



Please register to download DAVE™ version 4 and DAVE™ SDK version 4.

DAVE™ version 4 and DAVE SDK version 4 is now available as productive version.  
The current versions are: DAVE™ v4.1.2 and DAVE™ SDK v4.1.2.

After registration you will receive a confirmation email with a link to the download-page. With a click on the link you can download a zip file that contains a setup.exe-file and a PDF-file with installation instructions.  
Please check the JUNK or SPAM folder of your mail server if you don't receive a confirmation email.



First Name*	<input type="text"/>
Last Name*	<input type="text"/>
Email Address*	<input type="text"/>
Country*	<input type="text" value="-- Please select --"/>
Company*	<input type="text"/>
Business Phone	<input type="text"/>
Target Application	<input type="text" value="--please select--"/>



# Tooling Overview – DAVE™ (2/5)

› After registration, download and unzip the installer package

› Run DAVE-4.1.2-Setup.exe to install  
DAVE™ IDE and SEGGER J-Link drivers

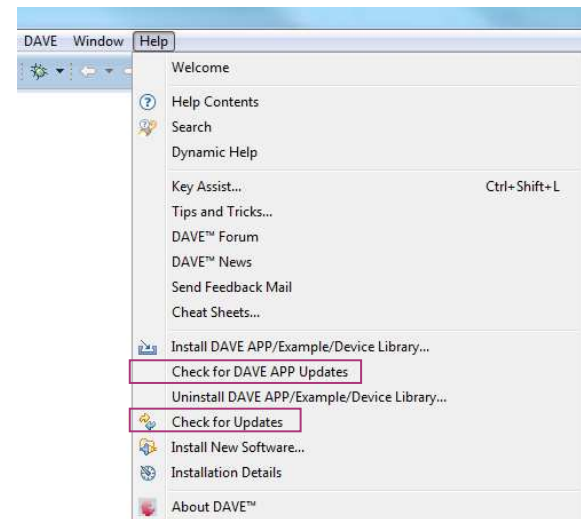
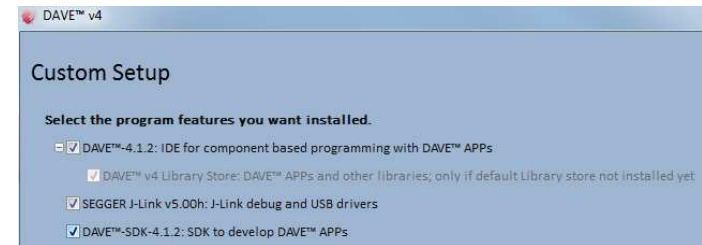
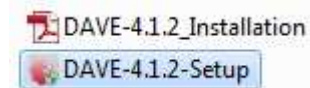
› Open DAVE™



› Update DAVE™ and DAVE™ libraries

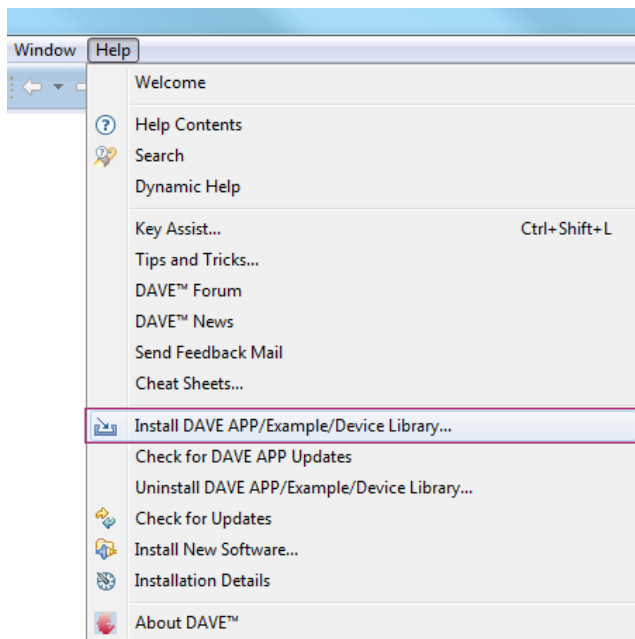
– Help → Check for Updates

– Help → Check for DAVE APP Updates



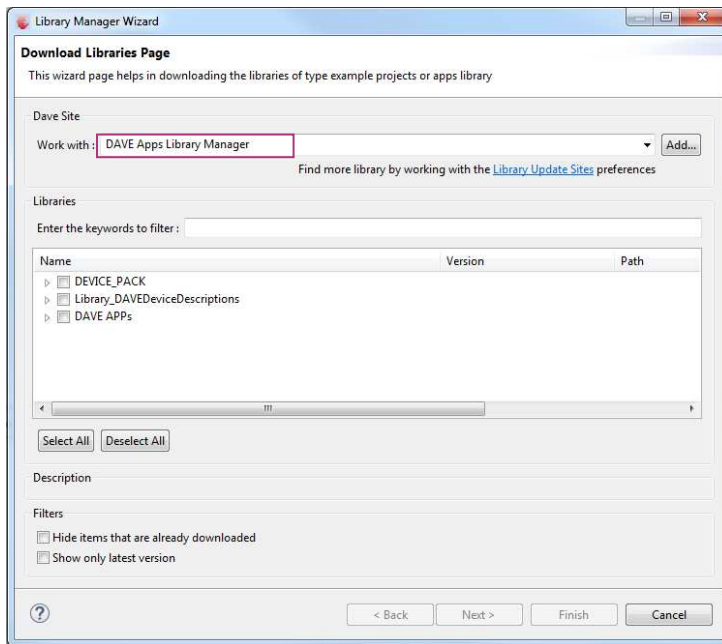
# Tooling Overview – DAVE™ (3/5)

- › Install DAVE™ APPs libraries and Device Description
  - Help → Install DAVE APP/Example/Device Library



- › Note: You may skip the above step if you are not using DAVE™ APPs

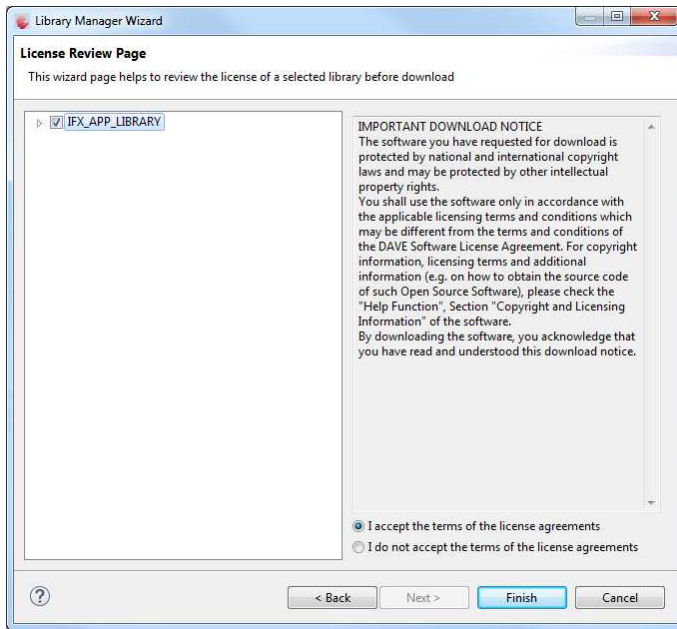
- › Select DAVE Apps Library Manager in the drop-down menu



- › Select DEVICE\_PACK, Library\_DAVEDeviceDescriptions (XMC1300 Device) and DAVE APPs

- ▶  DEVICE\_PACK
- ▶  Library\_DAVEDeviceDescriptions
- ▶  DAVE APPs

- › Accept terms of the license agreements and click Finish



- › DAVE™ APPs libraries and Device Description are installed

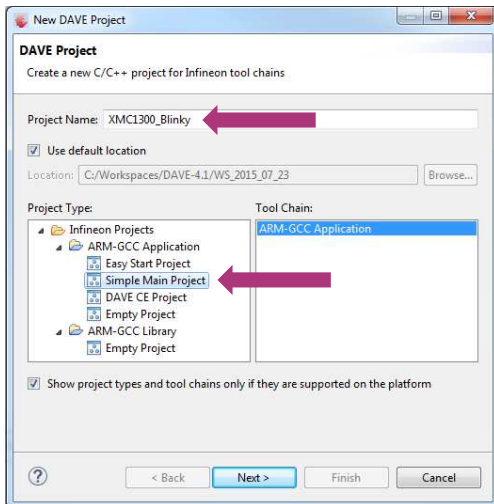
# Getting Started – Example – Blinky based on XMC Lib (1/6)

1. Open DAVE™

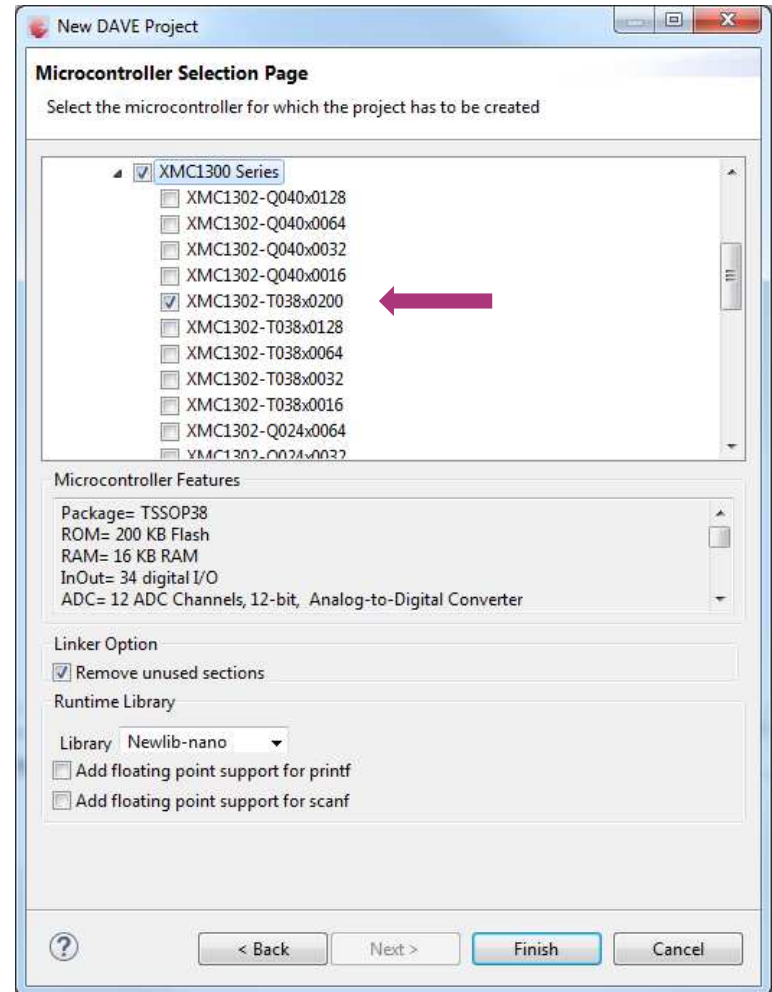


2. Create a new "Simple Main" project:

- File → New → DAVE Project
- Enter project name e.g. "XMC1300\_Blinky"
- Select "Simple Main Project" as Project Type



3. Select the device accordingly



# Getting Started – Example – Blinky based on XMC Lib (2/6)



- › For this project, we will use
  - System clock frequency of 8MHz
  - LED on Port pin 0.0
  - System timer, SysTick, as the time base for interrupt
  
- › Next, we will show you how to
  1. Set up the System or Main Clock (MCLK)
  2. Configure Port pin
  3. Configure SysTick and define its exception service routine

# Getting Started – Example – Blinky based on XMC Lib (3/6)



## 1. Set up System or Main Clock (MCLK) and include the required header files.

- Enter project name e.g. "XMC1300\_Blinky configuration"

```
#include "xmc_gpio.h"  
#include "xmc_scu.h"
```

- MCLK configured via **IDIV** and **FDIV** bit fields in XMC\_SCU\_CLOCK\_CONFIG data structure

```
XMC_SCU_CLOCK_CONFIG_t clock_config =  
{  
    .pclk_src = XMC_SCU_CLOCK_PCLKSRC_DOUBLE_MCLK, /*PCLK = 2*MCLK*/  
    .rtc_src = XMC_SCU_CLOCK_RTCCLKSRC_DCO2,  
    .fdiv = 0, /**< Fractional divider */  
    .idiv = 4, /**MCLK = 8MHz */  
};
```

- Initializes clock generators and clock tree in **Main.c**

```
int main(void)  
{  
  
    /* Ensure clock frequency is set at 8MHz (MCLK) */  
    XMC_SCU_CLOCK_Init(&clock_config);  
}
```

## 2. Configure Port pin

- GPIO to toggle the LED is configured via mode and output\_level of XMC\_GPIO\_CONFIG structure

```
XMC_GPIO_CONFIG_t gpio_output_config =  
{  
    .mode           = XMC_GPIO_MODE_OUTPUT_PUSH_PULL,  
    .output_level   = XMC_GPIO_OUTPUT_LEVEL_HIGH,  
};
```

- Initializes port pin P0.0 as general purpose output pin in **Main.c**

```
/* Initialise P0.0 as an output pin */  
XMC_GPIO_Init(LED1, &gpio_output_config);
```



## 3. Configure SysTick and define its exception service routine

- SysTick exception handler is defined in startup\_XMC1300.s

```
/* ===== */
.globl SysTick_Veneer
SysTick_Veneer:
    LDR R0, =SysTick_Handler
    MOV PC,R0
/* ===== */
```

- Initialize the SysTick in Main.c

```
#define TICKS_PER_SECOND 1000 /* System timer configuration */
#define TICKS_WAIT 200      SysTick_Config(SystemCoreClock / TICKS_PER_SECOND);
                             while(1U)
```

- Define the SysTick exception handler routine in Main.c

```
void SysTick_Handler(void)
{
    static uint32_t ticks = 0;

    ticks++;
    if (ticks == TICKS_WAIT)
    {
        XMC_GPIO_ToggleOutput(LED1);
        ticks = 0;
    }
}
```

# Getting Started – Example – Blinky based on XMC Lib (6/6)

## › Build project

1. Click

2. Wait for Build to finish

```
'Invoking: ARM-GCC Print Size'  
"C:\DAVEv4\DAVE-4.1.2\eclipse\ARM-GCC-49/bin/arm-none-eabi-  
text    data    bss     dec     hex filename  
2008    20     1044    3072    c00 XMC1300_Blinky.elf  
'Finished building: XMC1300_Blinky.siz'
```

## › Download code

1. Click

2. Switch to Debug perspective

3. Click to run code



## › LED blinks every 0.2s

