

MCU007 Evaluation Guide PUF_demo

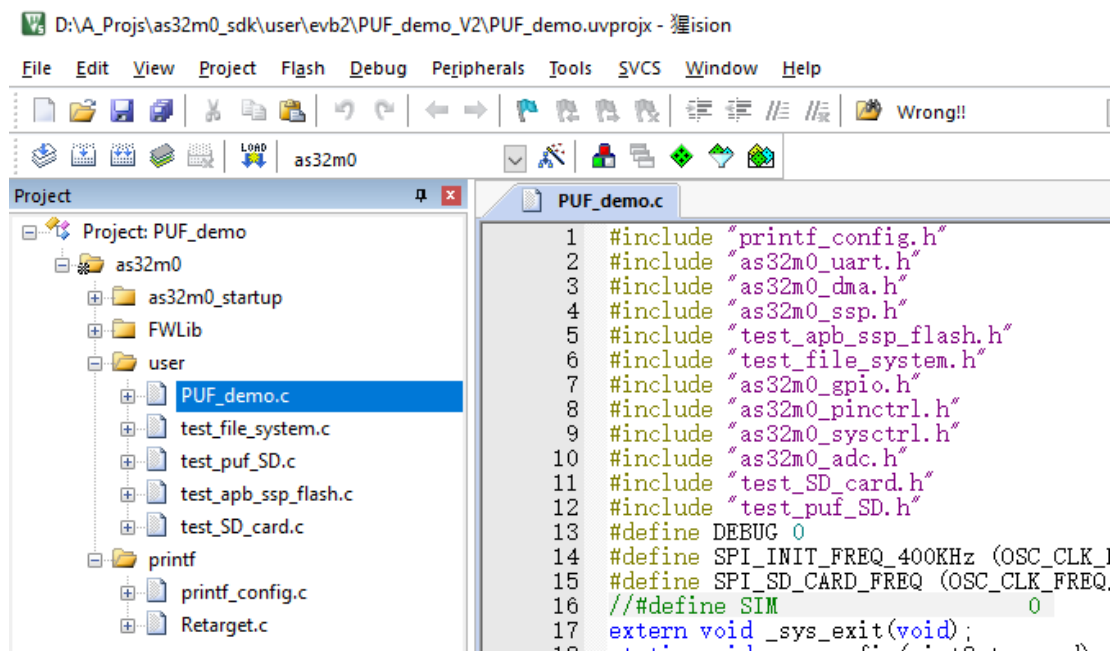
1. Prepare Keil ARM IDE

<https://www.keil.com/download/product/>

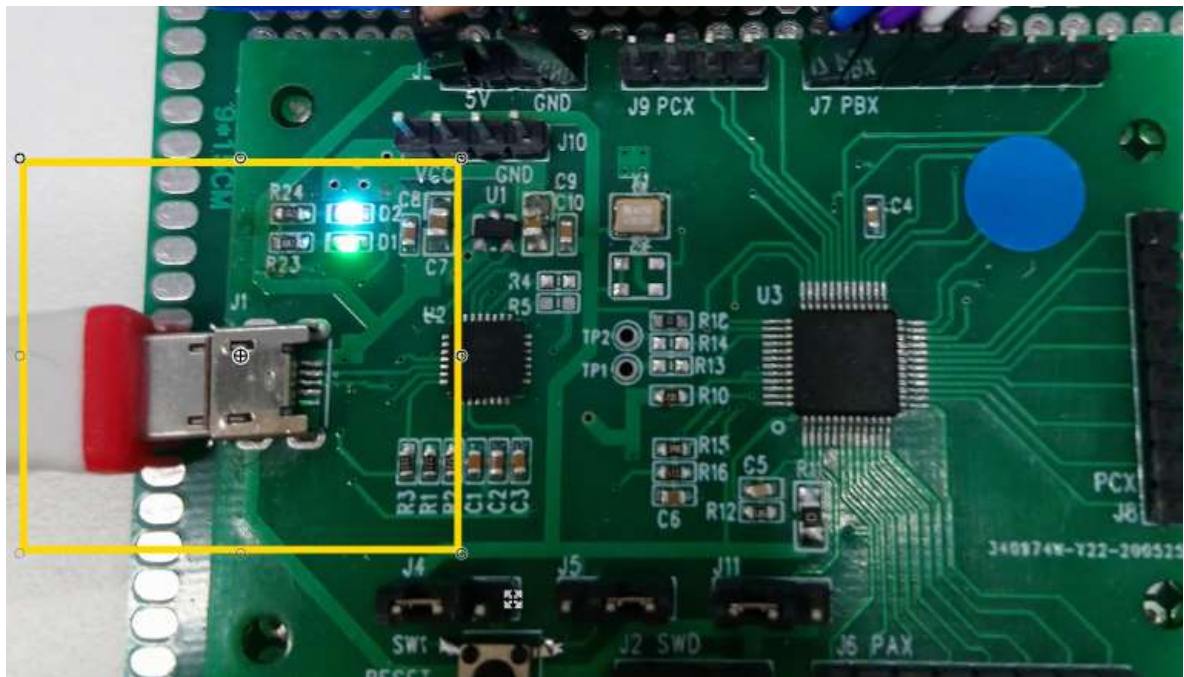


2. Open SDK demo project

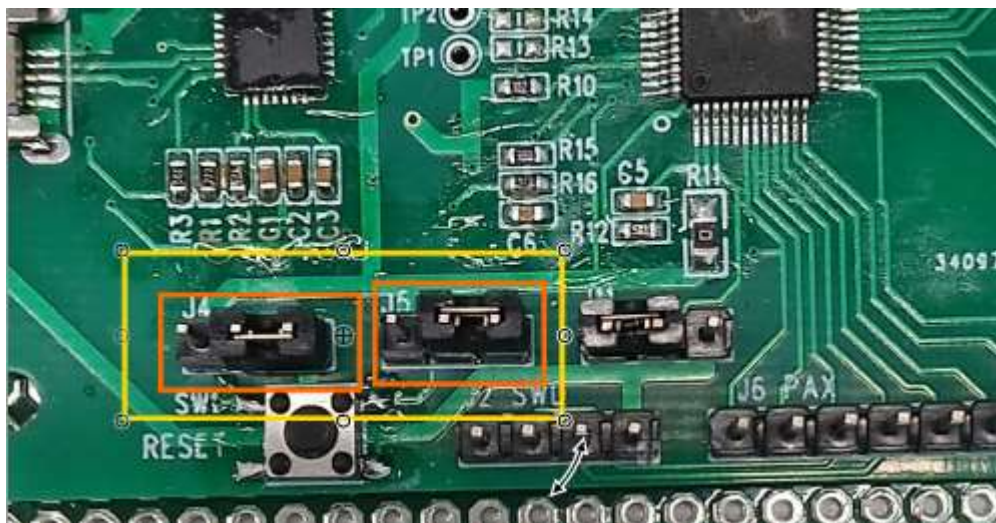
<input type="checkbox"/> Name	Date modified	Type	Size
Listings	2020-07-02 3:54 PM	File folder	
output	2020-07-02 3:54 PM	File folder	
user	2020-07-02 3:34 PM	File folder	
JLinkLog.txt	2020-06-18 9:26 AM	Text Document	3 KB
JLinkSettings.ini	2020-06-18 9:26 AM	Configuration sett...	1 KB
PUF_demo.uvguix.HYC	2020-07-02 3:55 PM	HYC File	87 KB
PUF_demo.uvguix.Wilson_Ho	2020-06-16 2:50 PM	WILSON_HO File	98 KB
PUF_demo.uvoptx	2020-07-02 3:36 PM	UVOPTX File	15 KB
PUF_demo.uvprojx	2020-07-02 3:36 PM	Revision5 Project	19 KB



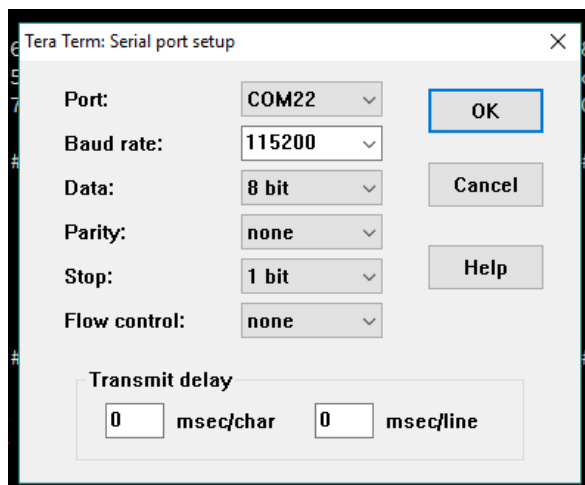
3. Build the project
4. Hook up evaluation board



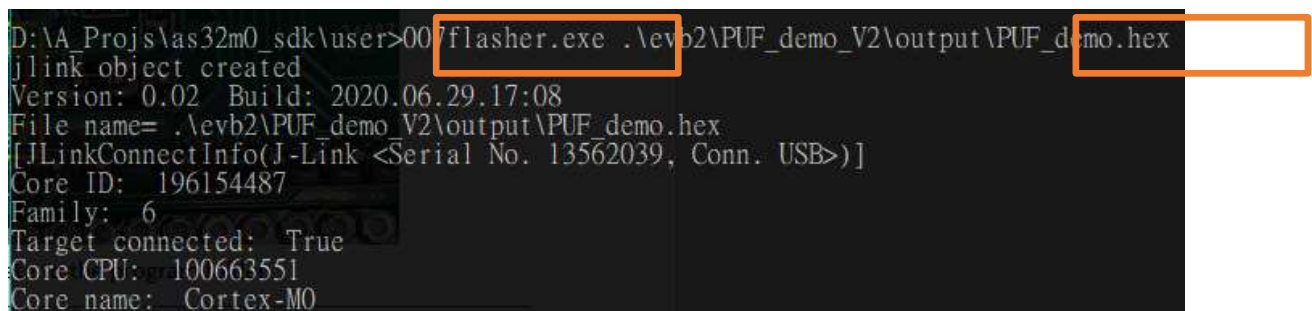
5. Set to SWD mode



6. Open Tera Term VT terminal



7. Download built HEX file to MCU007 evaluation board



8. Program downloaded

```
COM22 - Tera Term VT
File Edit Setup Control Window Help
==>
==>
==> PUF DEMO PROGRAM
==>
==>
Sector Correct!!
Partition 1 BootFlag = 00
Partition 1 CHS_Begin = 00000382
Partition 1 TypeCode = 0b
Partition 1 CHS_End = 00c6ca50
Partition 1 LBA_Begin = 00002000
Partition 1 NumOfSector = ecc000
Partition 1 Size = 7 GB
Bytes Per Sector = 0200
Sectors Per Cluster = 64
Number of Reserved Sectors = 4404
Number of FATs = 2
Sectors Per FAT = 1894
Root Directory First Cluster = 2
FAT BEGIN LBA = 00003134
Cluster BEGIN LBA = 00004000
Searching for Root directory...
\root

#####
#####
###

#####
#####
    Press l to list file(s)
    Press e to encrypt file(s) (PUF)
    Press d to decrypt file(s) (PUF)
    Press s to show puf key
```

9. Follow the Menu; Press l -> list files on SD card ...

10. File after PUF Encryption show **.PUF** in extension name

```
Analyze ...
1. README~1.HTM
2. README .PDF
3. YESTER~1.MP3
4. WITHOU~1.MP3
5. SANFRA~1.MP3
Enter a number to select the file : 2

File: README .PDF
Encrypting.....
Processing.....0%
First Cluster Sector: 3139
File Name_Sector : 00004000
File Exten_index : 000000a8
File First_Cluster_number : 0000005b
End Sector : 33
sectors_per_cluster : 64

Processing.....Done
Encrypt Done
```

```
5 File(s)
Analyze ...
1. README~1.HTM
2. README .PUF
3. YESTER~1.MP3
4. WITHOU~1.MP3
5. SANFRA~1.MP3
```

11. Decrypt the PUF file will resume original file

```
Press d to decrypt file(s) (PUF)
Press s to show puf key

5 File(s)
Analyze ...
1. README .PUF
Enter a number to select the file : █
```

```
First Cluster Sector: 20003a9c
File Name_Sector : 00004000
File Exten_index : 000000a8
File First_Cluster_number : 0000005b
End Sector : 34
sectors_per_cluster : 64
File: README .PUF
Decrypting.....
Processing.....0%
Processing.....Done
Decrypt Done
```

please note **ONLY can decryption file which encrypted by this **CHIP**

12. Press s show CHIP's PUF key series

768 bits, each chip is difference with true random generated.

```
Press s to show puf key

PUF Key: 0x7b621d5881e7c4e1a9dd952f2836885fbd34c2e408edb073d6de4e2cf654
8a89b4d58b5e6ea46c3f4c4184a8330008759949057be501d1537a972580bbc5aafb0746
71f0db6b61be596392efb9db852ed8df7fefb85f33787da97cb23483b3a5
```