Application Notes

Amlogic Platform JTAG Debugging User Guide
Revision 0.1

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Revision History

Revision	Date	Owner	Changes
0.1	April 1st, 2013	Zhenfei Li	Draft

1. Overview

This guide introduces how to online debug Linux kernel with ICE JTAG hardware and DS-5 tool software package. There are too many DS-5 topics to be introduced. So this document introduces only:

- How to install DS-5
- How to configure DS-5
- How to use DS-5 (a simple example)

2. How to install DS-5

- Install
  Run DS-5 setup.exe to install DS-5 tool software package. The installation is not a big issue.
- Setup license
  Run the main tool software in DS-5 tool software package
  Select menu <help> --> <ARM License Manager> to enter its window shown in Figure 2.1
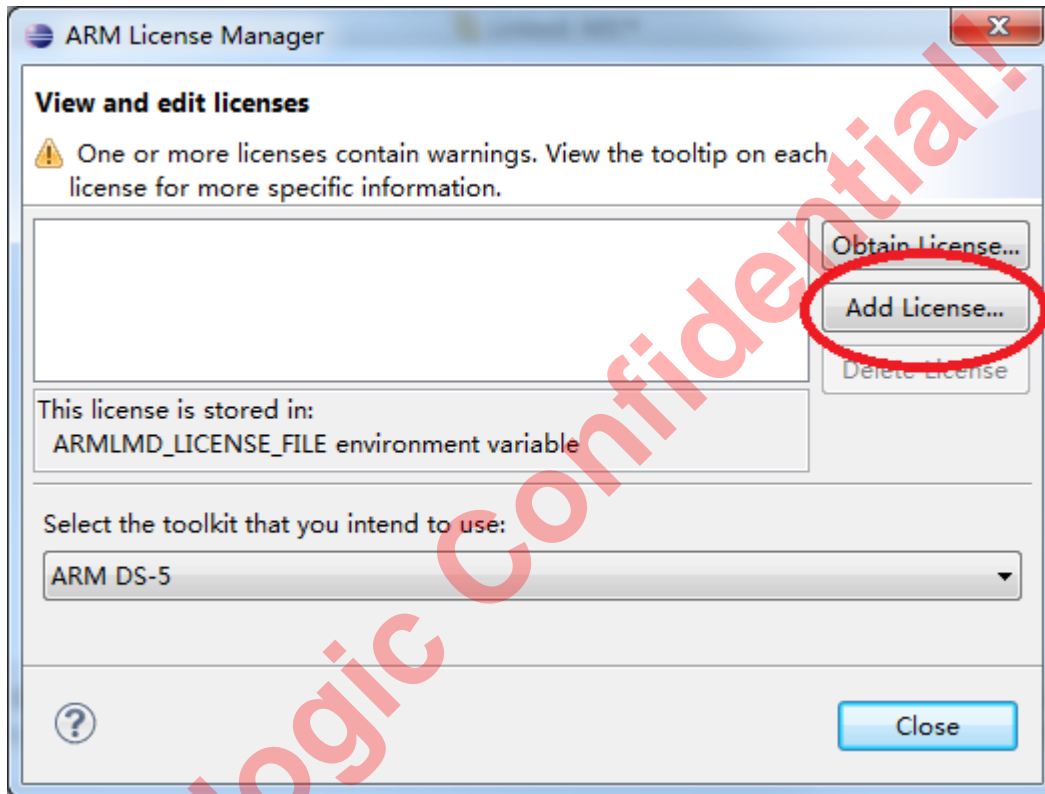 Press button <Add License> and fill in the right license information

Figure 2.1 - ARM License Manager window

3. How to configure DS-5

3.1 Get chip configuration file

- Use ICE JTAG hardware to connect PC with Amlogic platform
- Run tool software "Debug Hardware Configuration" in DS-5 tool software package to enter its window shown in Figure 3.1
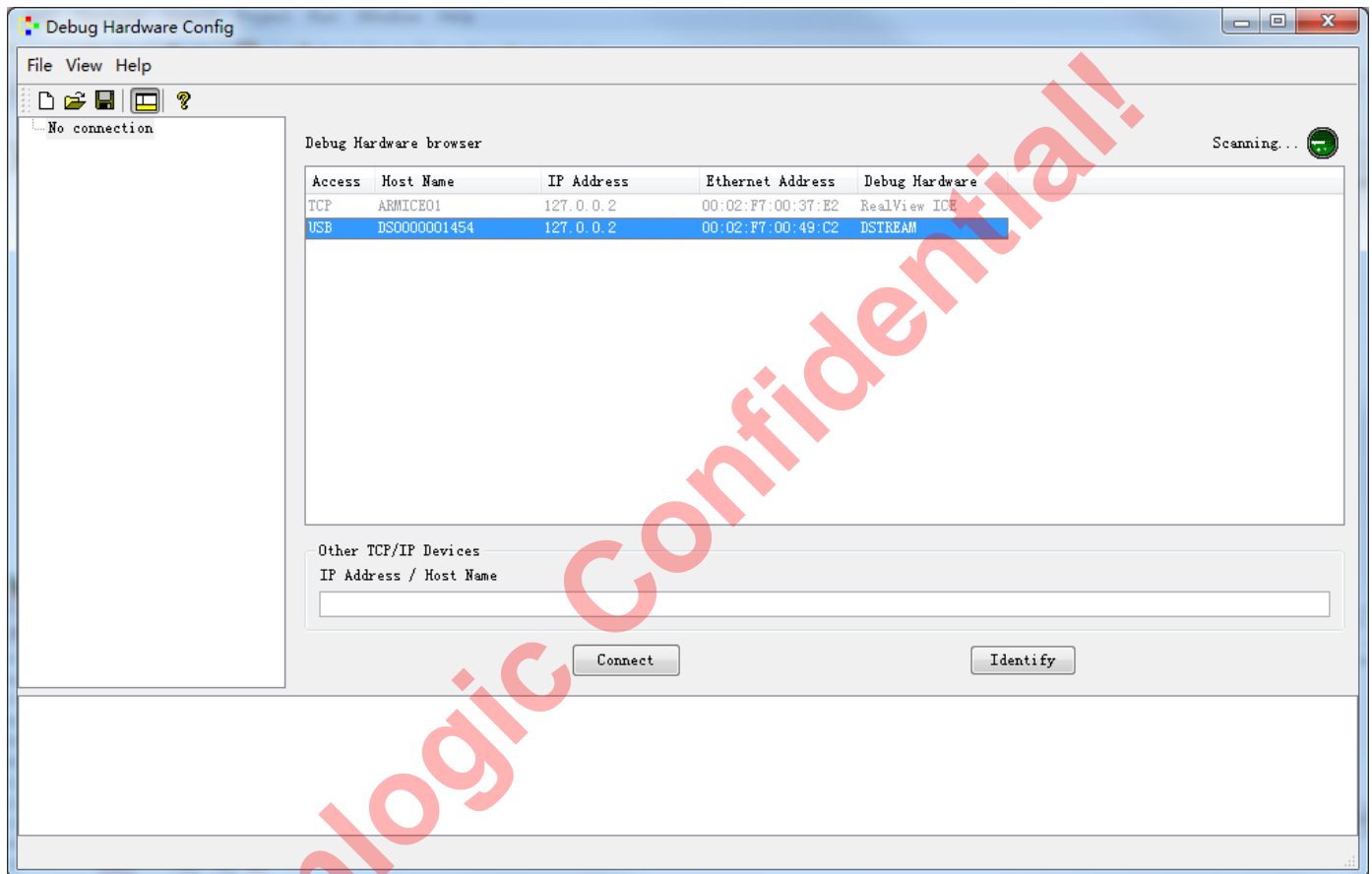
Figure 3.1 - Debug Hardware Configuration window

- Select item <USB> in frame <Debug Hardware browser> and press button <Connect> to enter its sub-window shown in Figure 3.2
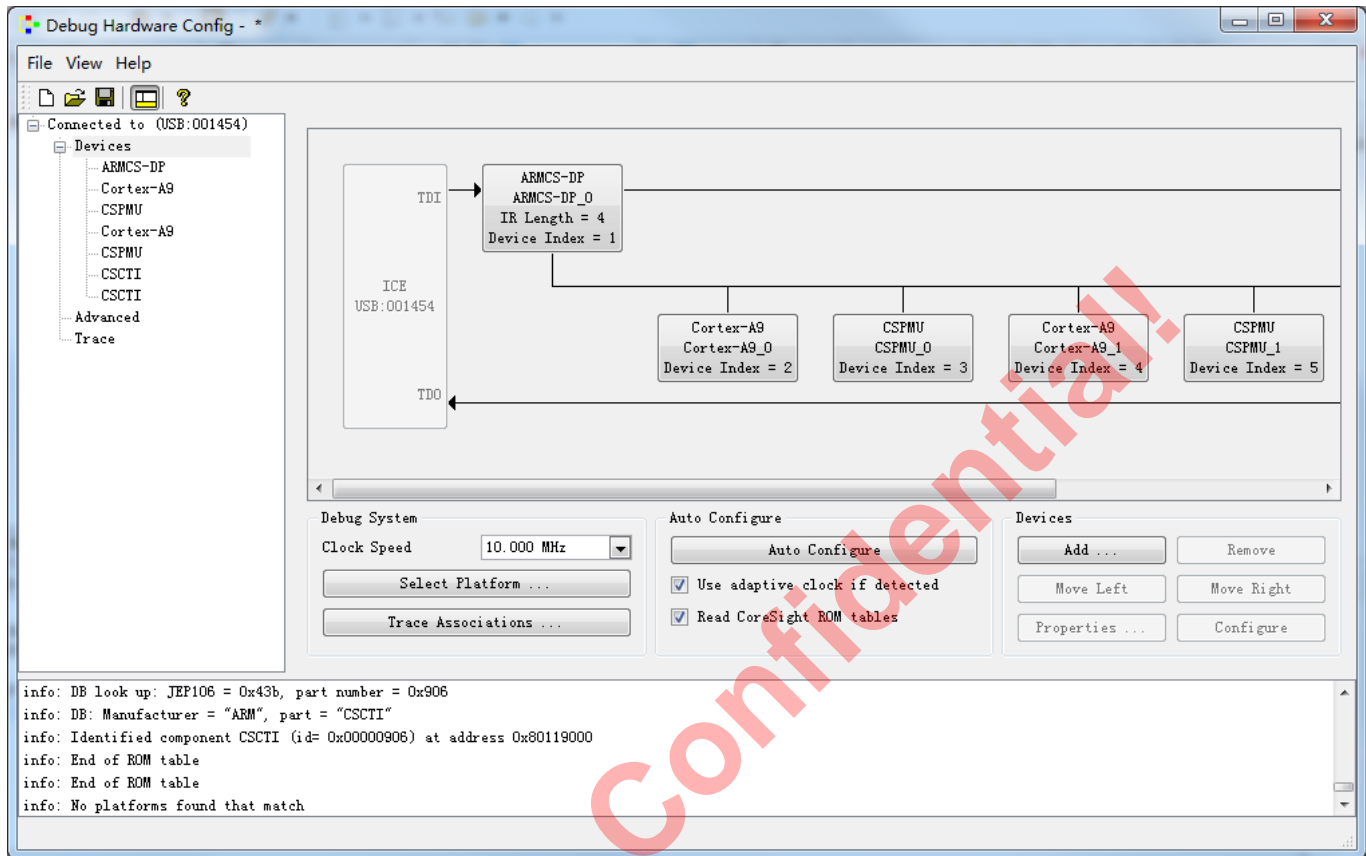

Figure 3.2 - USB Configuration sub-window

- Press button <Auto Configure> to configure chip automatically
- Exit tool software "Debug Hardware Configuration" and save chip configuration file as "xxx.rvc"

3.2 Create chip configuration database

- There is an executable file "\bin\cdbimporter.exe" in DS-5 tool software package
- Run command "cdbimporter xxx.rvc" to create chip configuration database from chip configuration file described in 3.1

3.3 Import chip configuration database

- Run the main tool software in DS-5 tool software package
- Select menu <Window> --> <Preferences> to enter its window shown in 3.3
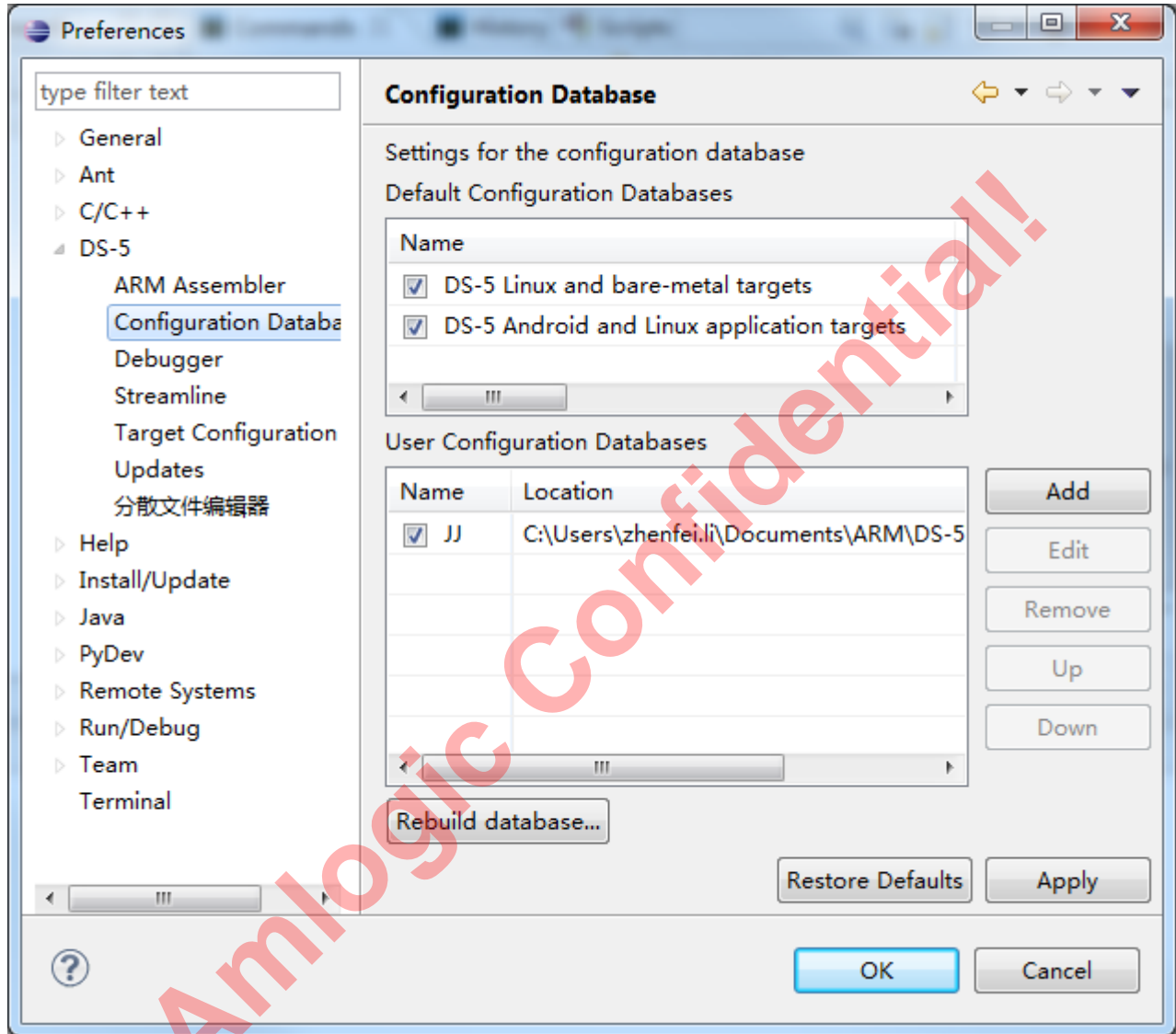

Figure 3.3 - Preferences window

- Expand item <DS-5>
- Select the sub-item <Configuration Database>
- Press button <Add> and fill in the necessary information upon requirements to import chip configuration database
- Exit Preferences window
- Select menu <Run> --> <Debug Configurations> to enter its window
- Click tag <Connection> to create a new configuration "MX" using the above chip configuration database under item <DS-5 Debugger> shown in Figure 3.4
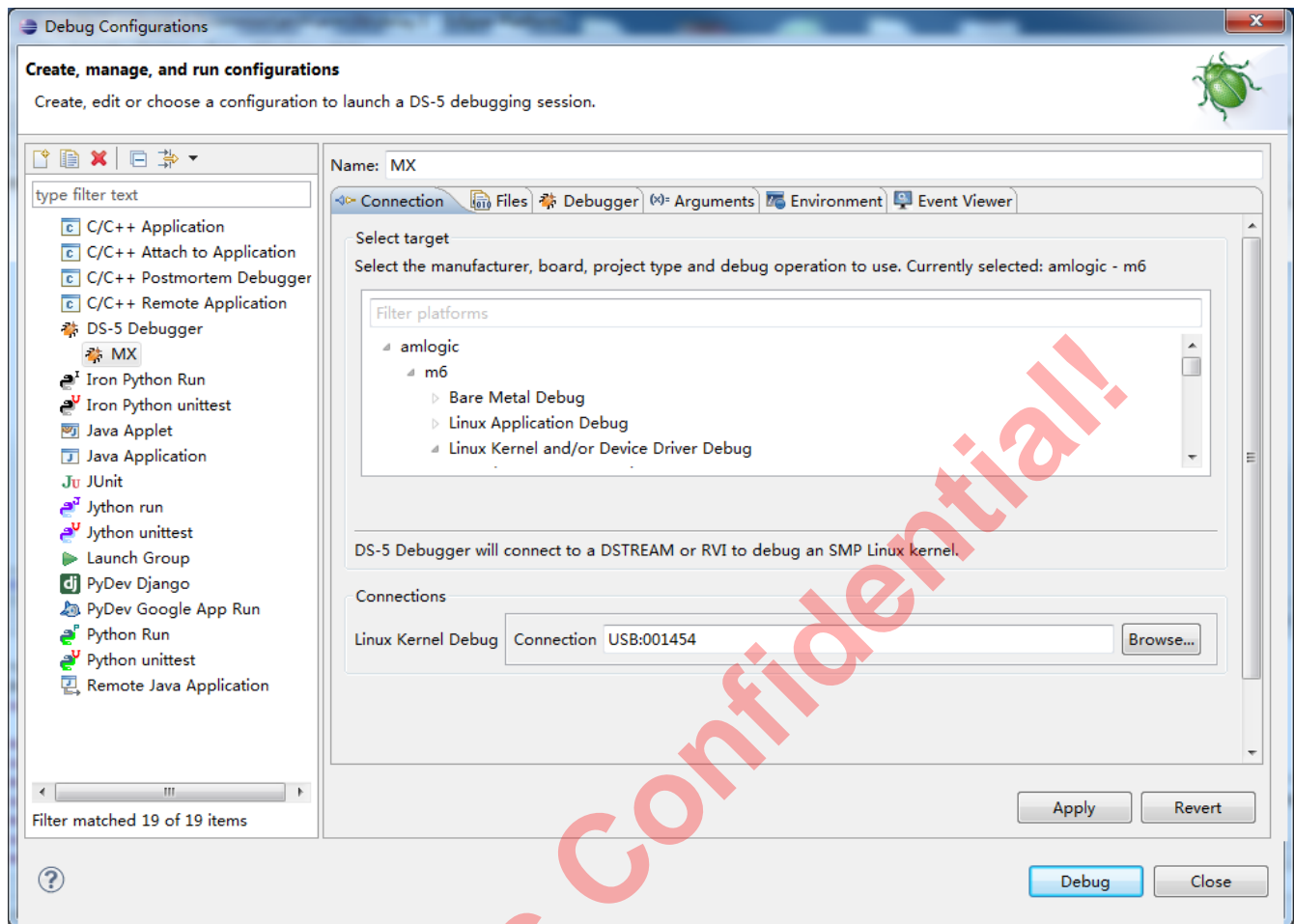
Figure 3.4 - Debug Configurations window (Connection)

3.4 Configure working path

Till now, you can online debug Amlogic platform with ICE JTAG hardware and DS-5 tool software package. But it is still inconvenient due to the lack of symbol file (file "vmlinux" created while compiling a Linux kernel) and source code information.

- Run the main tool software in DS-5 tool software package
- Select menu <Run> --> <Debug Configurations> to enter its window
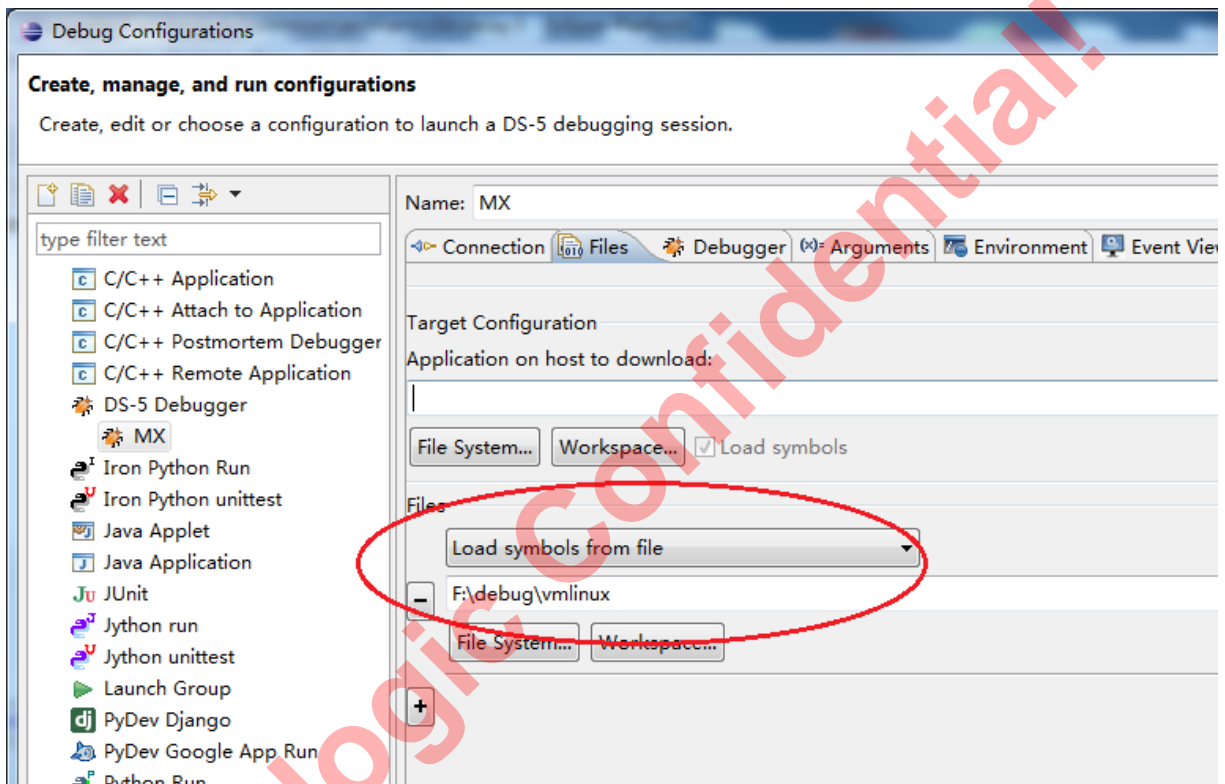- Click tag <Files> to import symbol file shown in Figure 3.5

Figure 3.5 - Debug Configurations window (Files)

● Click tag <Debugger> to fill in source code path shown in Figure 3.6
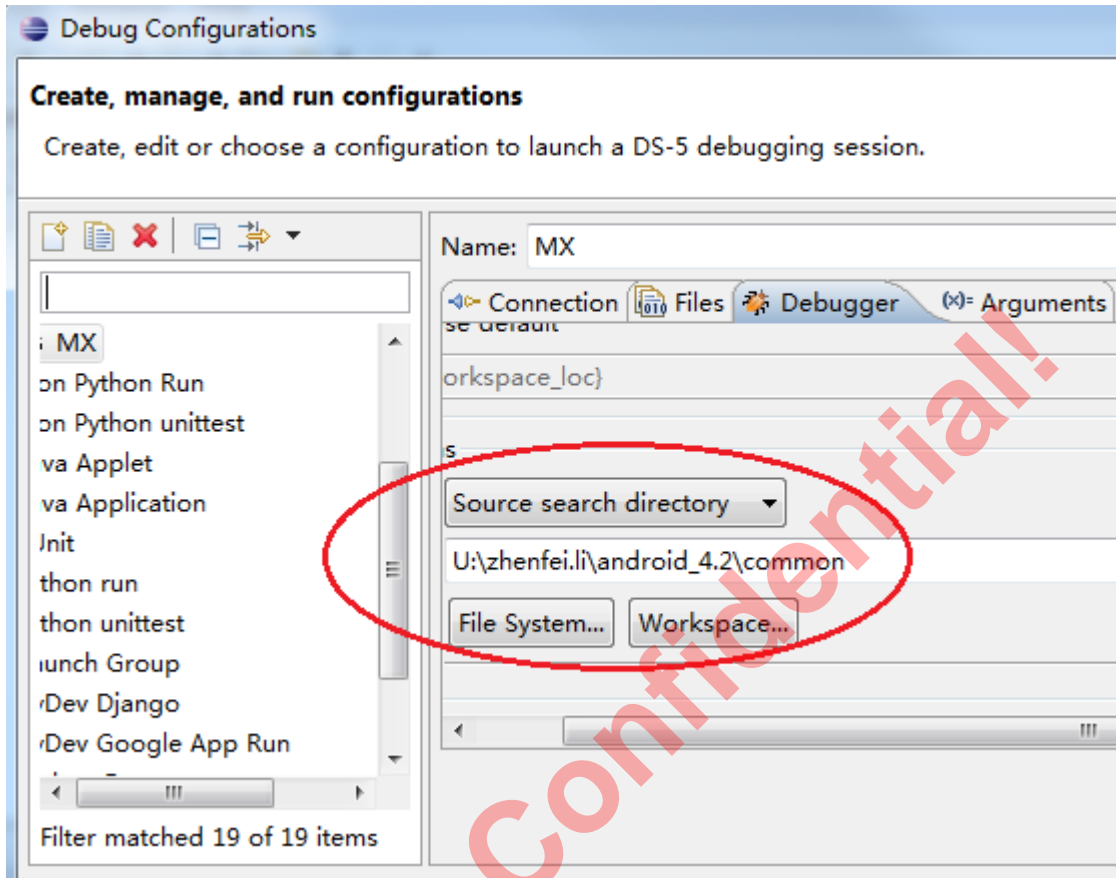

Figure 3.6 - Debug Configurations window (Debugger)

4. How to use DS-5

There are too many topics on how to use DS-5. This is a simple example.

4.1 How to get task stack

- Use ICE JTAG hardware to connect PC with Amlogic platform
- Run the main tool software in DS-5 tool software package
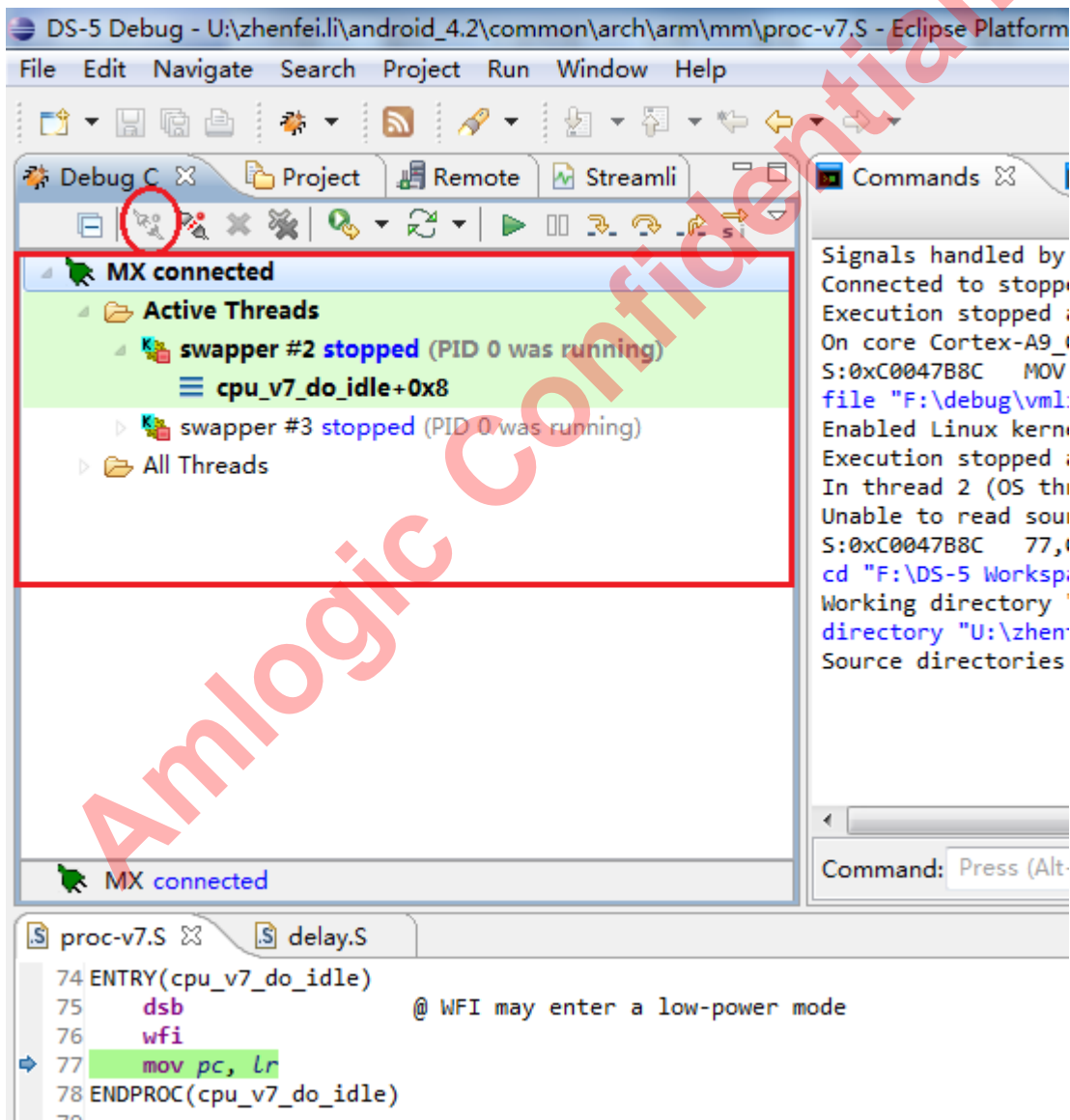- Press tag <Debug> ( ) to enter its sub-window
- Press button <Connect> to get task stacks shown in Figure 4.1

Figure 4.1 - Debug sub-window