HOT16x-4

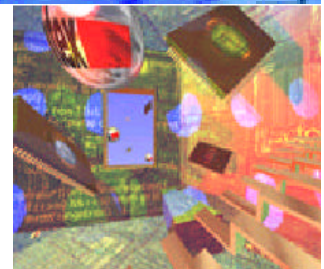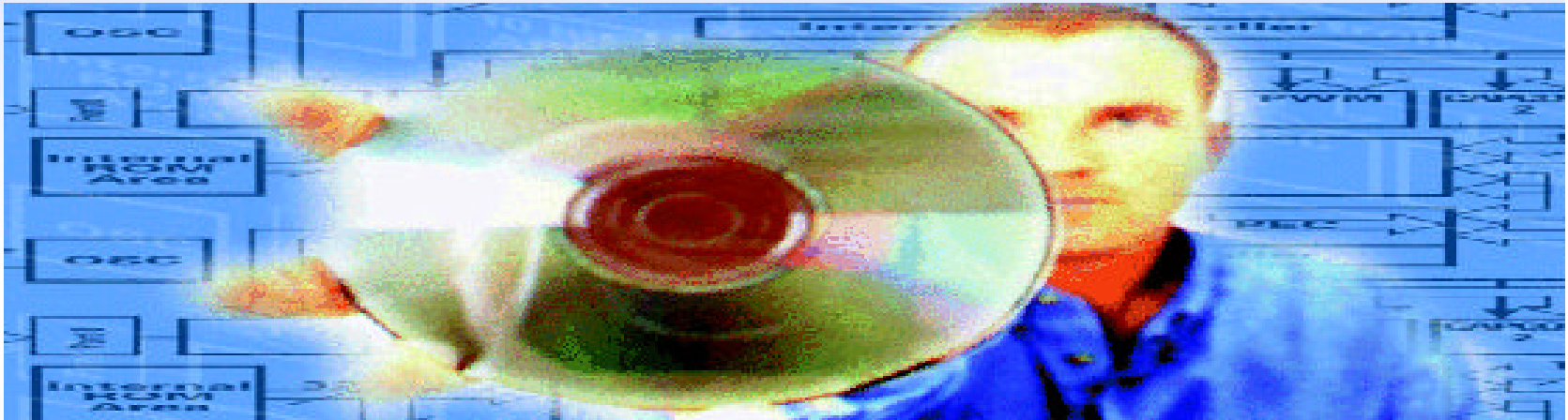## An Add-On to the HOT16x Hands-On Training Materials for the C166 Family using the HiTOP Debugger
(from Hitex; plus DAvE, the kitCON-16x Starter Kit, the Keil or Tasking C-Compiler, and an oscilloscope)

This version is based on DAvE Version 1.0,
Keil µVision2 V2.0, Keil C166 tool chain V4.0,
Tasking EDE V2.1, Tasking C166 tool chain V6.0,
16-bit Starter Kit CD ROM V4.1.
Please report any errors to axel.wolf @infineon.com

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* in preparation
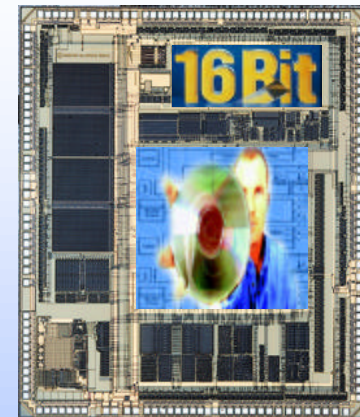
Introduction to HOT16x-4

❑ **HOT16x-4 is an add-on to the HOT16x-1 and HOT16x-2 training materials for the Infineon C166 family of 16-bit microcontrollers.**

❑ **While HOT16x-1 is using the integrated Keil debugger and HOT16x-2 is using the Tasking debugger CrossView Pro, HOT16x-4 is using the HiTOP debugger from Hitex.**

❑ **HOT16x-4 will show you how to run the exercises that are described in HOT16x-1 and HOT16x-2* with HiTOP**

* in preparation

Introduction to HOT16x

❑ **HOT16x is a Hands-On Training material created for the C166 microcontrollers, using**

- the kitCON-16x Starter Kits
- the Keil µVision2 integrated development environment (IDE) including the C166 compiler, A166 Assembler, L166 Linker/Locator and Debugger (see HOT16x-1)   or
- the Tasking Embedded Development Environment (EDE) including the C166 compiler, A166 Assembler, L166 Linker/Locator and the Tasking CrossView Pro Pro Debugger (see HOT16x-2)
- DAvE, the Digital Application Engineer from Infineon Microcontrollers
- an oscilloscope (for visualization purposes).
- A Windows95 or Windows NT PC (to be able to run DAvE)

Introduction to HOT16x (cont.)

❑ **HOT16x shows the user from the scratch how to generate software for the C167CR with DAvE and the Keil or Tasking tool chain:**

- There are several exercises included, small tasks to be solved using every peripheral of the microcontroller.

- The user creates a new project in DAvE and configures the device, following the detailed instructions.

- After having generated the code, the user
  - switches to Keil µVision2, or Tasking EDE,
  - creates a new project (or uses a pre-configured project),
  - includes the C files created by DAvE and the assembler startup file,
  - adds some User Code,
  - compiles, assembles, links and locates the project.

Introduction to HOT16x (cont.)

- After compilation with µVision2 or EDE, the user
    - switches to the integrated Keil debugger or CrossView Pro Debugger
    - connects to the kitCON-16x via bootstrap loader (loading the monitor),
    - loads, starts and debugs his example,
    - confirms his working program with a scope (screen shots are included in for most of the examples).

Introduction to HOT16x (cont.)

□ **HOT16x is made of two parts:**

- An architectural overview introducing the C166 architecture and the one specific derivative in particular.
- The hands-on training part. In this part, the peripherals of the used microcontroller are described in detail followed by a dedicated example using this peripheral or a combination of already introduced peripherals.

- The first HOT16x example shows the user from the scratch how to generate software with the used tool chain, including the setup of the µVision2 or EDE project.
- The following examples in HOT16x-1 are based on an already prepared µVision2 project.
- The following examples in HOT16x-2 include the generation of a new EDE project for each exercise.

HOT Overview

	C166 Tools used			
	Compiler, Assembler, Linker, Locator		Debugger	
Name of Hands-On-Training	Keil µVision2 (Keil C166, A166, L166)	Tasking EDE (Tasking C166, A166, L166)	Keil Debugger in µVision2	Tasking CrossView Pro
HOT161-1 (C161O)	X	-	X	-
HOT161RI-1	X	-	X	-
HOT161CI-1	X	-	X	-
HOT163-1	X	-	X	-
HOT164-1	X	-	X	-
HOT165-1	X	-	X	-
HOT167-1 (C167CR/CS)	X	-	X	-

HOT Overview (cont.)

	C166 Tools used			
	Compiler, Assembler, Linker, Locator		Debugger	
	Keil µVision2 (Keil C166, A166, L166)	Tasking EDE (Tasking C166, A166, L166)	Keil Debugger in µVision2	Tasking CrossView Pro
HOT161-2 (C161O)	-	X	-	X
HOT161RI-2	-	X	-	X
HOT161CI-2	-	X	-	X
HOT163-2	-	X	-	X
HOT164-2	-	X	-	X
HOT165-2	-	X	-	X
HOT167-2 (C167CR/CS)	-	X	-	X

Name of Hands-On-Training

HOT Add-On Overview

Name of Add-On	C166 Tools used			
	Compiler, Assembler, Linker, Locator		Debugger	
	Keil µVision2 (Keil C166, A166, L166)	Tasking EDE (Tasking C166, A166, L166)	Fast-view66 (PLS)	Hitop (Hitex)
HOT16x-3	X	X	X	-
HOT16x-4	X	(X)*	-	X
HOT16x-5 (kitCON CAN/LCD)	X	X	- (Flash Tools used)	- (integrated Debugger)

* in preparation

Short Introduction to DAvE

- **DAvE is your Digital Application Engineer from Infineon Microcontrollers.**

- **DAvE can help you compare and evaluate the different members of the Infineon C500 (8-Bit) and C166 (16-Bit) families of microcontrollers and help you find the right chip for your embedded control application.**

- **DAvE can be your one-stop access point to all standard knowledge associated with Infineon embedded technology expertise by offering you context sensitive access to user's manuals, data sheets, application notes etc. directly in your development environment.**

- **DAvE can help you program the Infineon microcontroller you want to use in your project, by offering you intelligent wizards that help you configure the chip to work the way you need it and automatically generate C-level templates with appropriate access functions for all of the on chip peripherals and interrupt controls.**

- **More DAvE info at www.infineon.com/DAvE.html**

Short Introduction to the Keil μVision2 Integrated Development Environment

❑ **Keil μVision2:**

- μVision2, the IDE from Keil Software, combines Project Management, Source Code Editing, and Program Debugging in one powerful environment. The Quick Start guide on the starter Kit CD ROM gives you the information necessary to use μVision2 for your own projects. It provides a step-by-step introduction of the most commonly used μVision2 features including:
  - Project Setup for the Make and Build Process
  - Editor facilities for Modifying and Correcting Source Code
  - Program Debugging and Additional Test Utilities

❑ **More information is available on the Starter Kit CD ROM or at www.keil.com.**

Short Introduction to the Tasking Embedded Development Environment (EDE)

❑ **EDE:**

- TASKING's Embedded Development Environment is a package of program building, editing, code generation and debugging tools that provides:
  - Accessible push-button control over a variety of development tasks spread over many tools
  - Tight integration of tools enabling a rapid edit-compile-debug process that leads to higher productivity by automating repetitive tasks

❑ **C Compiler:**

- The C 166 compiler is designed and built specifically for the 80C166 microcontroller family. This means you get a very efficient compiler that takes full advantage of the microcontroller's architecture without violating the ANSI standard.

Short Introduction to the Tasking Embedded Development Environment (EDE) (cor

❑ **Assembler:**

- The TASKING assembler is an integral part of the tool set but delivers features that enable it to be used on its own. It is supplied complete with linker/locator, librarian and object format utilities.

❑ **Linker/Locator:**

- The linker and locator is an essential part of the software building process that enables you to link and locate modules in target memory.

❑ **More information is available on the Starter Kit CD ROM or at www.tasking.com.**

Using HiTOP with the HOT16x Hands-On Training Materials

❑ **How to set up your system: kitCON-16x HW setup**
  - see respective HOT16x material.

❑ **How to set up your system: DAvE installation**
  - see respective HOT16x material.

❑ **How to set up your system: Keil µVision2 installation**
  - see respective HOT16x material.

❑ **How to set up your system: Tasking EDE installation**
  - see respective HOT16x material.

❑ **How to set up your system: Exercise directory structure**
  - see respective HOT16x material.

❑ **Hints regarding DAvE and the Exercises**
  - see respective HOT16x material.

How to set up your system: Hitex HiTOP installation

❑ **Insert the Starter Kit CD into your CD ROM drive.**

❑ **If you'd like to work with the C167 Starter Kit (kitCON-167)**
  - Run d:\cdrom\3rdtools\hitex\c166tool.s\sk167\install.exe

❑ **If you'd like to work with the C164 Starter Kit (kitCON-164):**
  - Run d:\cdrom\3rdtools\hitex\c166tool.s\sk164\install.exe

❑ **If you'd like to work with the C163 / C165 Starter Kit (kitCON-163/165):**
  - Run d:\cdrom\3rdtools\hitex\c166tool.s\sk163\install.exe

❑ **If you'd like to work with the C161 Starter Kit:**
  - Run d:\cdrom\3rdtools\hitex\c166tool.s\sk161\install.exe

❑ **Follow the instructions on the screen. The following text will assume that the HiTOP debugger is installed in the default directory c:\hitopwin**

❑ **Choose your COM port you intend to use**

❑ **During the installation process a program group named "Hitex C16x" will be created, containing an icon named "HiTOP/win"**

How to set up your system:
Hitex HiTOP installation (cont).

- ❑ **Starting TELEMON Firmware: To make it possible for HiTOP to communicate with the board, it is necessary to load the corresponding monitor software into the flash memory of the KitCON board**

- ❑ **Please perform the procedure on the following pages (according to the type of kitCON board you would like to use) using the Phytec Flash Programming Tools**

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-167)

❑ **If you intend to use kitCON-167:**

- Connect your evaluation board to a power supply and the PC
- In order to put the board in Flash programming mode, make sure that switch #1 of the blue DIP switches is switched to ON (older boards without DIP switches: close pins 1+2 of Jumper 2 (red))
- press reset button S1 on kitCON-167
- For COM1: Run flasht_1.bat in d:\cdrom\startkit\sk_167\flash\
- For COM2: Run flasht_2.bat in d:\cdrom\startkit\sk_167\flash\
- Press (2) to erase entire Flash-Area and (Y) for yes
- Press (4) - Load INTEL-Hexfile to prepare to download the Hex-code to the evaluation board
- Press F2 and enter the complete path of the hex-file: d:\cdrom\3rdtools\hitex\c166tool.s\sk167\telemon\standard.hex
- The Flash is being programmed. This may take several minutes.
- Press F1 and (Y) to exit Flashtool
- Put switch #1 of the blue DIP switches to the OFF position (older boards: remove the red jumper (Jumper 2, pins 1+2))
- Push the reset button S1.

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-164)

❑ **If you intend to use kitCON-164:**

- Connect your evaluation board to a power supply and the PC
- In order to put the board in Flash programming mode: open blue Jumper 4, close pins 1+2 of Jumper 8 (red)
- press reset button S1 on kitCON-164
- For COM1: Run flasht_1.bat in d:\cdrom\startkit\sk_164\flash\
- For COM2: Run flasht_2.bat in d:\cdrom\startkit\sk_164\flash\
- Press (2) to erase entire Flash-Area and (Y) for yes
- Press (4) - Load INTEL-Hexfile to prepare to download the Hex-code to the evaluation board
- Press F2 and enter the complete path of the hex-file: d:\cdrom\3rdtools\hitex\c166tool.s\sk164\telemon\standard.hex
- The Flash is being programmed. This may take several minutes.
- Press F1 and (Y) to exit Flashtool
- Remove the red jumper (Jumper 8, pins 1+2)
- Push the reset button S1.

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-163/165)

❑ **If you intend to use kitCON-163/165: Use the Flash programming routines from Phytec by running the Hitex batch file**

- Connect your evaluation board to a power supply and to PC
- In order to put the board in Flash programming mode: Open Jumper 2 at pins 1+2, close red boot Jumper 3 at 2+3
- Press reset button S1 on kitCON-163/165
- Open a DOS Window
- Switch to directory
  d:\cdrom\3rdtools\hitex\c166tool.s\sk163\telemon\
- For COMx: Run "monitor x" (x=1..4)
- Press any key to continue
- Press (2) to erase entire Flash-Area and (Y) for yes
- Press (4) - Load INTEL-Hexfile to prepare to download the Hex-code to the evaluation board

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-163/165) (cont.)

- Press F2 and enter "standard.hex"
- The Flash is being programmed. This may take several minutes.
- Press F1 and (Y) to exit Flashtool
- Program ends with text "please start HiTOP/win Debugger"
- Move the red jumper (Jumper 3) to pins 1+2 and push the reset button S1 or disconnect and then reconnect the power supply.

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-161)

❑ **If you intend to use kitCON-161: Use the Flash programming routines from Phytec by running the Hitex batch file**

- Connect your evaluation board to a power supply and to PC (choose the right D-SUB connector!! (P1))
- In order to put the board in Flash programming mode: Open Jumper 4, close Jumper 9 at 1+2
- Press reset button S1 on kitCON-161
- Open a DOS Window
- Switch to the directory d:\cdrom\3rdtools\hitex\c166tool.s\sk161\telemon\
- For COMx: Run "monitor x" (x=1..4)
- Press any key to continue
- Press (2) to erase entire Flash-Area and (Y) for yes
- Press (4) - Load INTEL-Hexfile to prepare to download the Hex-code to the evaluation board

Hitex HiTOP installation (Programming the monitor into the Flash of kitCON-161) (cont.)

- Press F2 and enter "kit161.hex"
- The Flash is being programmed. This may take several minutes.
- Press F1 and (Y) to exit Flashtool
- Program ends with text "please start HiTOP/win Debugger"
- Move Jumper 9 to pins 2+3 and push the reset button S1 or disconnect and then reconnect the power supply.

Let's get started now!

How to use the HiTOP debugger with Keil µVision2 and **kitCON-167**

- ❑ **Select one of the exercises for the C167CR described in HOT167-1, for example Exercise 7GPT1_1**

- ❑ **Start DAvE and perform the DAvE configurations described in the exercise, generate the code**

- ❑ **Start µVision2 and perform the µVision2 configurations described in the exercise.**
  NOTE: BE SURE TO INCLUDE THE ASSEMBLER STARTUP FILE START.ASM

- ❑ **Tell µVision2 to run the Hitex symbol preprocessor after make to create the appropriate symbol data base for HiTOP:**

  - Go to Project | Options for Target 'Target 1'
  - Go to 'Output' tab
  - After Make: Check box Run User Program 1
  - Enter the command to run the preprocessor for KEIL (sp166kl).
    Our Example:
    d:\cdrom\3rdtools\hitex\c166tool.s\sk167\splite\
        sp166kl *7gpt1_1* -v -s*c:\hot167_1\7gpt1_1*
    (adjust the *italic* terms if you run another example)
  - Click 'OK'

How to use the HiTOP debugger
with Keil µVision2 and kitCON-167 (cont.)

❑ **Adjust Target Options in µVision2:**

- Select Target Options:
  Go to Project | Options for Target 'Target 1'
- Select External Memory configuration
  - Go to 'Target' tab
  - External Memory #1: RAM: Start 0x6000, Size 0x1FFF
  - External Memory #2: ROM: Start 0x4000, Size 0x1FFF
- Click 'OK'

How to use the HiTOP debugger with Keil µVision2 and kitCON-167 (cont.)

- ❑ **Build the example (the Hitex symbol preprocessor will create a file called 7gpt1_1.htx)**

- ❑ **Start HiTOP by double clicking the HiTOP icon in the program group (or run it using the Programs menu when using Windows95 or Windows/NT 4.0).**

- ❑ **If you start HiTOP, the processor derivative support window will open up.**
  - If you want to use HiTOP's CAN Monitor, select C167CAN.SFR, then click "Load"
  - If not, select C167.sfr in the window SFR-Files, then click "Load"

- ❑ **After starting HiTOP, a script file is executed (this is only because of the demo version).**

- ❑ **A demo example is loaded. Execute File | Unload.**

- ❑ **Go to File | Load to download the program example.HTX Select the correct directory first by clicking "Filename" (Our example: c:\hot167_1\7gpt1_1\...)**

How to use the HiTOP debugger with Keil µVision2 and kitCON-167 (cont.)

❏ **The program will be loaded and displayed in the program window.**

❏ **Make your oscilloscope connections**

❏ **Execute Setup | Target Reset or press the "TR"-button to perform a Target Reset.**

❏ **Execute Go | Go Until and enter "main". Press "Go Until" button. The program will stop right before main().**

❏ **Execute GO | Run or press the button with the green light.**

❏ **Press the button with the red light to stop program execution**

❏ **The program will halt in the endless loop in main()**

How to use the HiTOP debugger with Keil µVision2 and **kitCON-164**

- ❑ **Select one of the exercises for the C164CI described in HOT164-1, for example Exercise 4GPT1_1**

- ❑ **Start DAvE and perform the DAvE configurations described in the exercise, generate the code**

- ❑ **Start µVision2 and perform the µVision2 configurations described in the exercise.**
  NOTE: BE SURE TO INCLUDE THE ASSEMBLER STARTUP FILE START.

- ❑ **Tell µVision2 to run the Hitex symbol preprocessor after make to create the appropriate symbol data base for HiTOP:**

  - Go to Project | Options for Target 'Target 1'
  - Go to 'Output' tab
  - After Make: Check box Run User Program 1
  - Enter the command to run the preprocessor for KEIL (sp166kl).
    Our Example:
    d:\cdrom\3rdtools\hitex\c166tool.s\sk164\splite\
       sp166kl *4gpt1_1* -v -s*c:\hot164_1\4gpt1_1*
    (adjust the *italic* terms if you run another example)
  - Click 'OK'

How to use the HiTOP debugger
with Keil µVision2 and kitCON-164 (cont.)

❑ **Adjust Target Options in µVision2:**

- Select Target Options:
Go to Project | Options for Target 'Target 1'

- Select External Memory configuration
  - Go to 'Target' tab
  - External Memory #1: RAM: Start 0x84000, Size 0x1FFF
  - External Memory #2: ROM: Start 0x82000, Size 0x1FFF

- Select Linker Options:
  - Go to 'L166 Misc' tab
  - Interrupt Vector Table Address: Enter   `0x80000`
    (Put interrupt vector table to 0x80000)
  - Enter `080008h-08000Bh, 0800ACh-0800AFh`
    in Reserve 1 box to reserve interrupt vector locations for Non Maskable Interrupt and Serial Interface Receive Interrupt for monitor use

- Click 'OK'

How to use the HiTOP debugger with Keil µVision2 and kitCON-164 (cont.)

❑ **Build the example (the Hitex symbol preprocessor will create a file called 4gpt1_1.htx)**

❑ **Start HiTOP by double clicking the HiTOP icon in the program group (or run it using the Programs menu when using Windows95 or Windows/NT 4.0).**

❑ **If you start HiTOP, the processor derivative support window will open up.**

   - If you want to use HiTOP's CAN Monitor, select C164CAN.SFR, then click "Load"
   - If not, select C164.sfr in the window SFR-Files, then click "Load"

❑ **After starting HiTOP, a script file is executed (this is only because of the demo version).**

❑ **A demo example is loaded. Execute File | Unload.**

❑ **Go to File | Load to download the program example.HTX Select the correct directory first by clicking "Filename" (Our example: c:\hot164_1\4gpt1_1\...)**

How to use the HiTOP debugger with Keil µVision2 and kitCON-164 (cont.)

❑ **The program will be loaded and displayed in the program window.**

❑ **Make your oscilloscope connections**

❑ **Execute Setup | Target Reset or press the "TR"-button to perform a Target Reset.**

❑ **Execute Go | Go Until and enter "main". Press "Go Until" button. The program will stop right before main().**

❑ **Execute GO | Run or press the button with the green light.**

❑ **Press the button with the red light to stop program execution**

❑ **The program will halt in the endless loop in main()**

How to use the HiTOP debugger with Keil µVision2 and **kitCON-163/165**

❑ **Select one of the exercises for the C164/165 described in HOT163-1 or HOT165-1, for example Exercise 3GPT1_1**

❑ **Start DAvE and perform the DAvE configurations described in the exercise, generate the code**

❑ **Start µVision2 and perform the µVision2 configurations described in the exercise.**
NOTE: BE SURE TO INCLUDE THE ASSEMBLER STARTUP FILE START.ASM

❑ **Tell µVision2 to run the Hitex symbol preprocessor after make to create the appropriate symbol data base for HiTOP:**

- Go to Project | Options f or Target 'Target 1'
- Go to 'Output' tab
- Af ter Make: Check box Run User Program 1
- Enter the command to run the preprocessor for KEIL (sp166kl).
  Our Example:
  d:\cdrom\3rdtools\hitex\c166tool.s\sk163\splite\
      sp166kl *3gpt1_1* -v -s*c:\hot163_1\3gpt1_1*
  (adjust the *italic* terms if y ou run another example)
- Click 'OK'

How to use the HiTOP debugger
with Keil µVision2 and kitCON-163/165 (cont.)

❑ **Adjust Target Options in µVision2:**

- Select Target Options:
  Go to Project | Options for Target 'Target 1'
- Select External Memory configuration
  - Go to 'Target' tab
  - External Memory #1: RAM: Start 0x44000, Size 0x1FFF
  - External Memory #2: ROM: Start 0x42000, Size 0x1FFF
- Select Linker Options:
  - Go to 'L166 Misc' tab
  - Interrupt Vector Table Address: Enter   `0x40000`
    (Put interrupt vector table to 0x40000)
  - Enter `040008h-04000Bh, 0400ACh-0400AFh`
    in Reserve 1 box to reserve interrupt vector locations for Non Maskable Interrupt and Serial Interface Receive Interrupt for monitor use
- Click 'OK'

How to use the HiTOP debugger with Keil µVision2 and kitCON-163/165 (cont.)

- ❑ **Build the example (the Hitex symbol preprocessor will create a file called 3gpt1_1.htx)**

- ❑ **Start HiTOP by double clicking the HiTOP icon in the program group (or run it using the Programs menu when using Windows95 or Windows/NT 4.0).**

- ❑ **If you start HiTOP, the processor derivative support window will open up. Click "Load".**

- ❑ **After starting HiTOP, a script file is executed (this is only because of the demo version).**

- ❑ **A demo example is loaded. Execute File | Unload.**

- ❑ **Go to File | Load to download the program example.HTX Select the correct directory first by clicking "Filename" (Our example: c:\hot163_1\3gpt1_1\...)**

How to use the HiTOP debugger with Keil µVision2 and kitCON-163/165 (cont.)

- ❑ **The program will be loaded and displayed in the program window.**
- ❑ **Make your oscilloscope connections**
- ❑ **Execute Setup | Target Reset or press the "TR"-button to perform a Target Reset.**
- ❑ **Execute Go | Go Until and enter "main". Press "Go Until" button. The program will stop right before main().**
- ❑ **Execute GO | Run or press the button with the green light.**
- ❑ **Press the button with the red light to stop program execution**
- ❑ **The program will halt in the endless loop in main()**

How to use the HiTOP debugger with Keil µVision2 and **kitCON-161**

- ❑ **Select one of the exercises for the C161 described in HOT161-1, for example Exercise 1GPT1_1**

- ❑ **Start DAvE and perform the DAvE configurations described in the exercise, generate the code**

- ❑ **Start µVision2 and perform the µVision2 configurations described in the exercise.**
  NOTE: BE SURE TO INCLUDE THE ASSEMBLER STARTUP FILE START.ASM

- ❑ **Tell µVision2 to run the Hitex symbol preprocessor after make to create the appropriate symbol data base for HiTOP:**

  - Go to Project | Options for Target 'Target 1'
  - Go to 'Output' tab
  - After Make: Check box Run User Program 1
  - Enter the command to run the preprocessor for KEIL (sp166kl).
    Our Example:
    d:\cdrom\3rdtools\hitex\c166tool.s\sk161\splite\
        sp166kl *1gpt1_1* -v -s*c:\hot161_1\1gpt1_1*
    (adjust the *italic* terms if you run another example)
  - Click 'OK'

How to use the HiTOP debugger
with Keil µVision2 and kitCON-161 (cont.)

❏ **Adjust Target Options in µVision2:**

- Select Target Options:
  Go to Project | Options for Target 'Target 1'
- Select External Memory configuration
    - Go to 'Target' tab
    - External Memory #1: RAM: Start 0x104000, Size 0x1FFF
    - External Memory #2: ROM: Start 0x102000, Size 0x1FFF
- Select Linker Options:
    - Go to 'L166 Misc' tab
    - Interrupt Vector Table Address: Enter **0x100000**
      (Put interrupt vector table to 0x100000)
    - Enter **0100008h-010000Bh, 01000ACh-01000AFh**
      in Reserve 1 box to reserve interrupt vector locations for Non Maskable Interrupt and Serial Interface Receive Interrupt for monitor use
- Click 'OK'

How to use the HiTOP debugger with Keil µVision2 and kitCON-161 (cont.)

- ❑ **Build the example (the Hitex symbol preprocessor will create a file called 1gpt1_1.htx)**

- ❑ **Start HiTOP by double clicking the HiTOP icon in the program group (or run it using the Programs menu when using Windows95 or Windows/NT 4.0).**

- ❑ **If you start HiTOP, the processor derivative support window will open up. Click "Load".**

- ❑ **After starting HiTOP, a script file is executed (this is only because of the demo version).**

- ❑ **A demo example is loaded. Execute File | Unload.**

- ❑ **Go to File | Load to download the program example.HTX Select the correct directory first by clicking "Filename" (Our example: c:\hot161_1\1gpt1_1\...)**

How to use the HiTOP debugger with Keil µVision2 and kitCON-161 (cont.)

❑ **The program will be loaded and displayed in the program window.**

❑ **Make your oscilloscope connections**

❑ **Execute Setup | Target Reset or press the "TR"-button to perform a Target Reset.**

❑ **Execute Go | Go Until and enter "main". Press "Go Until" button. The program will stop right before main().**

❑ **Execute GO | Run or press the button with the green light.**

❑ **Press the button with the red light to stop program execution**

❑ **The program will halt in the endless loop in main()**

How to use the HiTOP debugger with Tasking EDE and kitCON-16x

Sorry, this section is still in preparation