The ADI project shows how to setup the tools for using

the extended features of the Analog Devices ADuC83x.

Compared to the classic 8051 architecture the ADuC83x

core provides you with following enhancements:

- fast dual DPTR with auto increment and auto toggle.

- extended stack space in on-chip XRAM.

- 24-bit DPTR for up to 16MB off-chip RAM space.

These features are fully supported by the Keil C51 Compiler

and the uVision debugger.

This sample project shows the tool configuration for the

ADuC83x. It contains a special START\_AD.A51 startup file

that is required to configure the ADuC83x device. This

startup file allows you to configure the on-chip XRAM and

the extended stack space.

The project uses also the dual DPTR feature of the ADuC83x

to accelerate the library functions strcpy, strcmp, memcpy,

memmove, memcmp and intrinsic struct copy function.

Far memory support for up to 16MB RAM is also included. C51

provides you with the 'far' memory type that can be used to

access large memory. The memory accesses itself is performed in

the XBANKING.A51 configuration file. The example includes a

configured version of the XBANKING.A51 file that accesses the

large 16M Byte external address space via the extended DPP

register of the ADuC824B2 device. To use the 'far' memory

support, enable the following options under Project - Options

for Target:

- 'far' memory type support

- Save address extension SFR in interrupts.

The 'far' memory type is handled at linker level via the memory

class HDATA. You can enter the address range in uVision under

Options for Target - LX51 Locate - User Classes as shown below:

HDATA (X:0x010000-X:0x02FFFF) /\* put 'far' into X:0x10000 - X:0x2FFFF \*/

\*\*\* IMPORTANT NOTE \*\*\*

\*\*\* Far Memory Support is only available in the PK51 package.

\*\*\* If you have an CA51, DK51, or Evaluation Package the far memory

\*\*\* support is not available and this example will not work.