Programming Tips

If you are programming in VB 6, you can use and modify the full source code for the ISO-14230 USB Message Center which is on the Installation CD in the Reference Software folder.

There is also a VB .NET 2005 project full source code that can be used as a starting point as well, in the Reference Software folder on the CD.

There are also header files for C and VB in the Reference Software folder on the CD.

Latest software Versions as of August 3, 2018

Latest 14230USB.DLL vesion is 2.0.0.9.
Latest driver and message center install package is 1.0.18.
Latest firmware revision is 50.5.

New Drivers in Install Packages 1.0.18

The latest Windows 10 updates require a driver update. Please make sure to install the latest driver package if you are using Windows 10. The latest driver package is automatically installed if you install the Message Center or the driver package 1.0.18.

If you are using a 32-bit computer or Windows XP, you may find that the latest driver package won't install on your machine (fails to verify the signature). In that case, install an earlier version of the driver, such as 1.0.17 Message Center or driver package, which is located in the "Older Versions" folder.

Make sure to execute the x64 program if you have a 64-bit computer or the x32 program if you have a 32-bit computer.

New in version 2.0.0.9 of 14230 USB DLL

Fixed issue exiting application when no device connected.

Uses driver compatible with Windows 8 and Windows 10.

Please note that the new driver package is signed with a Digicert SHA2 EV certificate.

Native Windows 7 does not support SHA2 certificates.
You will need to install the following Windows Update:

https://support.microsoft.com/en-us/kb/3033929

Windows 8 and newer have native support for SHA2 certificates.

Windows XP requires Service Pack 3 for SHA2 support.

Warning: with this driver, if you try to install with a 14230USB device plugged in, the driver installation will fail. Then you will have to unplug the 14230USB device, uninstall both the windrvr6 based driver and the current driver, and reinstall the drivers, and then plug in the device(s) again. See the README file in the driver folder for instructions about individual driver installation steps.

Problems With Certain Anti-Virus Software

Certain Anti-Virus software may prevent this software from loading or installing. For example, Avast on Windows 10 will prevent the installation from completing. It may be necessary to disable your anti-virus software, such as Avast, during the installation or first-time running of this software. The root cause of this is usually because the anti-virus software is unfamiliar with this software (or any software from small companies) and utilizes a heuristic based on the philosophy that "little is known about this software" to block it. Norton Sonar will also sometimes remove the 14230 USB Message Center. You will need to go into Norton and restore this application to use it.

Pure 64-Bit DLL Deprecated

Going forward, Silicon Engines will no longer support the pure 64-bit DLL. If you are using this, then please contact Silicon Engines and we will decide what to do. Normally, the 32-bit DLL works both in 32-bit and 64-bit Windows operating environments so a pure 64-bit DLL should not be necessary.

Model 9009 No Longer Supported

If you are using Model 9009 and everything is working, you can keep on using it as long as your Windows system allows. If your Windows system updates and the drivers no longer work for the Model 9009, you are encouraged to upgrade your Model 9009 to the Model 9010. The Model 9010 features improved speed and compatibility with Windows 8 and Windows 10. The interface to the Model 9009 and the Model 9010 is the same so any program that uses the Model 9009 will also be able to use the Model 9010. Contact Silicon Engines at sales@siliconengines.net about upgrading your Model 9009 to Model 9010.

Error 1152 During Installation

If you get error 1152 during installation, then take

the following steps:
1. Disable all network adapters on your computer such
that you no longer have an Internet connection.
2. Reboot your computer with network adapter disabled
and try the installation. If you still get error 1152,
then proceed to step 3.
3. If the installation still doesn't work, disable
anti-virus software, reboot, and run the installation.

Note: make sure to re-enable anti-virus software and
your network adapters after the installation has
succeeded.

New in 1.0.11 Version of ISO-14230 USB Message Center

Support for up to 250,000 bps with version 1.5 of
firmware. (Firmware can always be upgraded - it
is on the CD and you can upgrade with this program).
Previous maximum baud rate was 115,200 bps.

New in 50.5 Version of Firmware for Model 9010

Able to support baud rates up to 250,000 bps. Can be
used to talk on a DMX system but requires special
cabling and connection with custom modified 9001 box
and USB-to-RS485 converter. Consult Silicon Engines
at sales@siliconengines.net if you are interested
in this type of development.

New in version 1.0.10 of ISO-14230 USB Message Center

Minor fixes: remove extra slash in filenames, don't
display "Received 256 bytes order" if test mode is
not enabled.

New in version 2.0.0.8 of 14230 USB DLL

Bug fix to ensure that all messages are received in proper
order especially in the case of high bus utilization
(theoretical bug fix - no actual issue was ever observed),
other minor bug fixes to remove deadlocks and other
types of mis-communication issues.

New in version 1.0.9 of ISO-14230 USB Message Center

Support for version 4 of Model 9010 firmware.
If slow init alternate method is selected, then system
ID will also be reported during request last keyword.
Extra resistor modes are added to drop-down box for
Voltage Selection.
Baud rate box now takes baud rates up to 115200.
New high speed duplex mode check box on config screen.
Fix bug: voltage mode was not being saved on exit

from program.
Fix bug: voltage mode wasn't being sent properly
in previous versions of message center program.
Fix bug: source and target addresses were reversed
in previous incarnation of program when using
fast init.

New in version 2.0.0.7 of 14230 USB DLL

Support for version 4 Model 9010 firmware (see below).
Note that starting with this version, the source address and
target address arguments to the fast init routine only
are reversed. This is fully backward compatible with earlier
versions of applications because if the source address is entered
as the target address (first argument) it now becomes the source
address (first argument) and the code will behave the same.
The following routines were added (model 9010 support only):

Iso14230USBExtendedOpen
Iso14230USBSetHighSpeedBaudRate
Iso14230USBSetBusCharacteristics
bit 2: 1=listener only 0=normal bit 3: 1=5V mode only
0=normal
Iso14230USBSetHighSpeedDuplex
Iso14230USBExtendedSlowInit
Iso14230USBGetMostRecentSystemID

New in version 4 of Model 9010 firmware

Support for baud rates up to 115,200 bps.
New high speed duplex command for baud rates over 10,417
which allows all data transmitted to be echoed back if
rendered on bus properly. This allows guaranteed delivery
methods by checking the receive data and comparing with
the data that was sent by the application program.
This is not required for baud rates 10,417 or lower
because for those baud rates, bit assertions are
automatically checked and error codes generated if
the bit assertions fail.
New alternate slow init command with system ID request.
This is the same as in version 20 of the ISO-14230 RS232
converter.
New settings which allow either forced 5V mode or forced
no bus resistance mode (pure listener).
Bug fix: when receiving data and status responses simultaneously,
some data would get dropped. This has been fixed.

New in Version 2.0.0.6 of 14230 USB DLL (Release 1.0.14)

Fixed a bug in the lumping together of receive data
into packets: occasionally would not lump together
properly. This has been fixed.
Greatly increased transmit speed, especially for

Windows 7, by changing the default size of the transmit
queue from 4 to 8192.
Fixed a bug where an application written like the example
code provided would be slow to respond to the mouse and
keyboard even when the system was completely idle: now
the system is slow to respond to the mouse and keyboard
only when there is active bus activity and bytes
being read (since the Iso14230USBReadDataMessage routine
blocks for about half a second when called if there is
any receive data being received for lumping purposes).
Fixed a bug in custom tester present messages handling.

New in version 21 of USB firmware

Note: if you are using Windows XP, it is recommended
to use version 11 instead of version 21 since version
11 is faster. Version 21 fixed a bug in setting
custom tester present messages that was data-dependent.

New in version 11 of USB firmware

Note: version 11 of USB firmware is not compatible
with Windows Vista, Windows 7, and Lennovo laptops
with i3/i5/i7 cores. Version 11 fixed a bug in
custom tester present message handling (which
was data dependent).

New in Version 1.0.8 of 14230 USB Message Center

Version 1.0.8 of the 64-bit executable corrects an issue
with reprogramming of the converter box. The progress
bar is not a registered class in 64-bit so the progress
bar was removed for 64-bit. Version 1.0.8 of the .NET
projects includes corrected pointer pinning techniques
to fix bugs that appear mostly in the 64-bit environment.

New in Version 2.0.0.4 and 2.0.0.5 of 14230 USB DLL

A bug fix to allow newly attached devices to be recognized
without having to restart the message center.
2.0.0.5 of the DLL also includes better read data message
support lumping together data in same packets better.

New in Version 2.0.0.3 of 14230 USB DLL

Corrects a time-limit issue in version 2.0.0.2. If you have
version 2.0.0.2 of the 14230 USB DLL, then you must upgrade
to 2.0.0.3 or later.

Version 20 of USB Module

This version should be used for computers with
USB co-processors or Windows Vista or Windows 7.
This version is slower than the regular version

(version 10, version 8, or version 7) but is
compatible with those later systems. It requires
special drivers. See also the file
IncompatibilityI3I5I7VistaWindows7.TXT for more
details on how to implement this version.
It should not be used unless you need to use the
box on one of those systems because it slows down
the performance slightly.

New VB.NET 2005 Reference Source Code 1.0.6

This includes the necessary improvement to pin
pointers used in calls to 14230USB.DLL in a
managed environment (using .NET Framework).

New in Version 1.0.7 of 14230 USB Message Center

The message center has not changed but the main driver DLL,
14230USB.DLL, has changed. This also affects the Standalone
Driver Install. The new DLL (dated 4/27/10) fixes issues
in the last DLL which was supposed to be much faster but
the old DLL actually had some issues which could cause the
box to stop transmitting after continuous transmission and
could also cause certain transmitted messages to become
lost.

Version 10 of USB Module

Version 10 of the USB module is used for Serial Numbers 2000 and after.
It is slightly superior, for factory purposes, than version 8. If you
have version 8 already loaded, there is no reason to load version 10.

Version 8 of USB Module

Version 8 of the USB module is used for Serial Numbers 2000 and after.
It adds support for USB suspend mode.

Version 7 of USB Module

Version 7 of the USB module is used for Serial Numbers before 2000.
It adds support for USB suspend mode.

Version 6 of USB Module

Version 6 of the USB module is used for Serial Numbers 2000 and later.
It is necesary for factory programming to use version 6 rather than
version 5 for the newer modules.

New in Version 1.0.6 of 14230 USB Message Center

The message center has not changed but the main driver DLL,
14230USB.DLL, has changed. This also affects the Standalone
Driver Install. The new DLL is much faster with respect

to turn around time on transmitting and receiving 14230 messages.

Upgrading Firmware

The version of the 14230 USB converter is made of a major version and a minor version. The major version corresponds to the version of the USB firmware and the minor version corresponds to the version of the 14230 module firmware.

The firmware is upgradable through the 14230 USB Message Center. If you have a version earlier than 5.8, then you need to send your module back to Silicon Engines to perform the further upgrade. After version 5.8 all upgrades can be performed through the 14230 USB Message Center. Click on the Configure button and then the Upgrade Firmware button. Then choose the module you want to reprogram and then for the S19 file, browse to the Upgrade folder on the Installation CD and choose the appropriate file.

In version 5.4, the interprocessor communication bus speed was lowered due to occasional receiver overruns that could occur. Previous to version 5.4, there would be an occasional dropped command response. Version 4.3 is identical to version 5.4 except for the change in bus speed.

Version 4.x fixed some bugs in the receive data engine. Previously, dropped receive data could occur.