

**KSZ88XX
NDIS Driver
For Windows and WinCE
Porting Guide**

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KSZ88XX Windows and WinCE Driver Porting Guide

1. Overview

This KSZ88XX Ethernet controller driver code supports KSZ8841M, KSZ8842M, KSZ8841P, KSZ8842P, KSZ8861M, and KSZ8862M and is built using Windows 2000 DDK. It also can be built under WinCE 5.0 DDK if the files `makefile.wce` and `sources.wce` are used. Rename them to `makefile` and `sources`. The WinCE driver has been tested. For Windows 2000 DDK the files can be put anywhere; for WinCE they need to be located under a certain directory:

WINCE\public\common\oak\drivers\netcard

The KSZ8841/61 driver is built if `DEF_KS8841` is defined in `sources`, and the driver name is `ks8841_pci.sys`; the KSZ8842/62 driver is built if `DEF_KS8842` is defined, and the driver name is `ks8842_pci.sys`. For your convenience, there are two files called `sources.41` and `sources.42` that can be copied to `sources` to build either driver.

The catalog file `KS884x.cat` is a dummy one. The real one needs to be obtained from Microsoft by submitting the driver for verification. For this reason the driver may not be installed under Windows XP or above.

2. Windows 2000 Driver Installation

The subdirectory *driver* contains the KSZ88XX PCI Ethernet controller drivers. Upon detection of new PCI hardware Windows will prompt to install a driver. Point to this location to indicate the `KS884X.inf` installation file. Confirm everything to install the driver.

3. To Build The Windows 2000 Driver

The subdirectory *PCI* contains the KSZ88XX PCI driver source code. The source files contain all the definitions to build the KSZ8841/61 or KSZ8842/62 driver. The only thing to change is to define either `DEF_KS8841` or `DEF_KS8842`, or copy the file `sources.41` or `sources.42` to `sources`.

The source files can be put anywhere in the hard drive. Open either a Windows 2000 DDK Checked Build Environment or Free Build Environment command line window and type "build -c" to generate the driver ks8841_pci.sys or ks8842_pci.sys in objchk\i386 or objfre\i386 subdirectory.

The subdirectory *ISA* contains the KSZ88XX ISA driver source code. The driver has not been tested because there are no KSZ88XX ISA boards. The file sources contains all the definitions to build the KSZ8841/61 or KSZ8842/62 driver. The only thing to change is to define either DEF_KS8841 or DEF_KS8842, or copy the file sources . 41 or sources . 42 to sources .

The source files can be put anywhere in the hard drive. Open either a Windows 2000 DDK Checked Build Environment or Free Build Environment command line window and type "build -c" to generate the driver ks8841_isa.sys or ks8842_isa.sys in objchk\i386 or objfre\i386 subdirectory.

4. To Build The WinCE Driver

The subdirectory *PCI* contains the KSZ8841/2 PCI driver source code. The source files need to be copied to a directory under \WINCE\PUBLIC\COMMON\OAK\DRIVERS\NETCARD. Rename sources.wce to sources and makefile.wce to makefile. The file sources contains all the definitions to build the KSZ8841/61 or KSZ8842/62 driver. Open the Windows CE Command Prompt with all the Windows CE definitions set properly. Type "build -c" to generate the driver ks8841_pci.lib or ks8842_pci.lib located in \WINCE\PUBLIC\COMMON\OAK\LIB\X86\RETAIL.

The subdirectory *ISA* contains the KSZ88XX Generic Bus driver source code. The source files need to be copied to a directory under \WINCE\PUBLIC\COMMON\OAK\DRIVERS\NETCARD. Rename sources.wce to sources and makefile.wce to makefile. The file sources contains all the definitions to build the KSZ8841/61 or KSZ8842/62 driver. Open the Windows CE Command Prompt with all the Windows CE definitions set properly. Type "build -c" to generate the driver ks8841_isa.lib or ks8842_isa.lib located in \WINCE\PUBLIC\COMMON\OAK\LIB\X86\RETAIL.

There is another sources file named sources .wce .platform that is used to build driver in DLL format to run under a platform. The files project .bib, project .reg, KS8841 .reg, and KS8842 .reg show the settings that need to be put in the system build image to load the drivers.

5. Driver Modification Notes

The KSZ88XX drivers are Windows NDIS drivers so they follow the NDIS model, making it easier to update. The drivers are separated into two parts, one platform independent and the other platform specific. In this case the platform specific part is the NDIS driver code. All NDIS related functions are prefixed with Miniport. They are grouped in the following files:

NdisDriver.c is the main driver entry point. It initializes the NDIS wrapper code and makes sure the driver is started and stopped properly. For Windows CE it may be required to modify this file to start the driver properly.

NdisDevice.c contains basic functions to handle the NDIS calls. It may also be required to modify this file to obtain the correct resources under Windows CE.

NdisISR.c contains the interrupt handler. It has other functions to handle receiving. The NDIS functions are MiniportHandleInterrupt, MiniportISR, and MiniportReturnPacket.

NdisSend.c contains functions to handle transmitting. The NDIS functions are MiniportSend and MiniportSendPackets.

NdisOid.c contains functions to handle OID requests. The NDIS functions are MiniportQueryInformation and MiniportSetInformation.

The rest of the code are platform independent. It is not necessary to modify them for use in Windows environment. However the code in the files target.c and target.h may be tweaked to perform better in different environments.