

ScreenKey Prototyping and Development Kits

OEM-5400 – Windows Prototyping & Development Kit

The OEM-5400 is designed for Windows programmers to familiarise themselves with ScreenKey technology. This kit includes a comprehensive software development toolset that allows developers to quickly deploy and test ScreenKey solutions. The software toolset enables the integration of ScreenKey controls into high-level programming languages.



Windows COM objects are employed making it easy to integrate ScreenKeys with most Windows based high-level programming languages, e.g. VC++, VB, Delphi, etc.

The OEM-5400 is supplied with a panel of 12 ScreenKeys in a 3x4 matrix. It is offered in one of four configurations:

- 12 x RGB24 ScreenKeys (36x24 - RGB)
- 12 x RGB16 ScreenKeys (32x16 - RGB)
- 12 x LC24 ScreenKeys (36x24 - RG)
- 12 x LC16 ScreenKeys (32x16 - RG)

Additional panels may be purchased and are interchangeable. The controller board automatically detects the type of panel attached and configures itself accordingly.

The OEM-5400 Development kit is supplied with the following:

- OEM-5400 CPU Controller Board
- 5V DC Power Supply Unit
- Data/Power Cabling
- Windows Software Suite on CD-Rom
- 1 panel of 12 ScreenKeys

The board interfaces to a host computer via an RS232 serial interface.

Windows Software Toolset for OEM-5400

The OEM-5400 is supplied with a comprehensive Windows development toolset.

Windows COM technology is used to provide developers with easy-to-use ActiveX components that are readily incorporated into most high-level programming languages, e.g. VC++, VB, Delphi, etc. Language specific wrappers are available for development languages that do not support COM technology.

The "SKI ActiveX" component can be used to directly drive the ScreenKey module and control text, graphics and colours on individual keys.

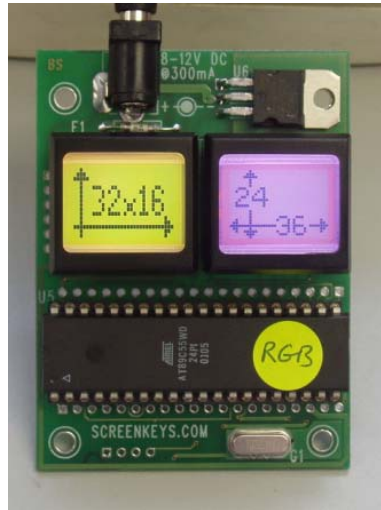
A higher-level "SAC Engine ActiveX" component is used to control the panel of ScreenKeys using a predefined drill-down menu system (SAC files – see below). This tool removes the programming burden from the developer while still allowing direct low-level control if and when required.

A full Windows-based "SAC Editor" is provided as part of the package to allow users to design a "SAC file" offline from the application code. This SAC file is used by the SAC Engine to implement the interface as designed in the SAC Editor. A SAC file contains multiple menus including graphics and text for each key, navigation instructions on how these menus interact. It also includes any keypress information to be returned on the keyboard channel when a particular ScreenKey is pressed.

Even faster integration can be achieved using the "SAC Controller" application. This tool operates in a standalone mode and controls the ScreenKey console based on a specified SAC file. Keypress return information, as per the SAC file, is returned via the keyboard channel to the active Windows application as if it was typed from the QWERTY keyboard. This method can greatly accelerate the initial integration task.

DemoComII – Microcontroller Prototyping & Development Kit

The ScreenKey DemoComII is a development kit for embedded software and hardware design engineers. It enables them to familiarise themselves with ScreenKeys and to learn how the ScreenKey interface and command set operates.



The **DemoComII Microcontroller Development Kit** includes:

- DemoComII microcontroller board
- 9Vdc power supply
- CD ROM with firmware source code, schematic diagram, application note and support tools

The kit is designed around the Atmel 89C55WD microcontroller (8051 core) and includes two onboard ScreenKeys – one of each resolution (32x16 and 36x24). It is delivered with pre-programmed firmware that demonstrates the ability to display text, graphics and backlight colours on ScreenKeys.

A full schematic diagram is provided for this hardware. A parallel-to-serial converter is used to clock data out to the ScreenKey. This design greatly simplifies the driving software and enables fast update of the ScreenKey LCD.

Note: This hardware design is recommended as a preferred method to interface to ScreenKeys.

The firmware source code for this application is provided with the kit. This code demonstrates how to implement the different ScreenKey interface commands. It also shows how to implement a text-to-graphic conversion and demonstrates how to display graphics on a ScreenKey, etc. The low-level core of this code may be used to facilitate rapid application development by reusing the low-level and hardware-specific functions.

The firmware source code for this kit is written for the Keil 'C' cross-compiler. A size limited version of this compiler may be downloaded directly from the Keil website (www.keil.com). It is very straightforward to translate this source code to operate with another cross-compiler. The source code and schematic are easily translated for other microcontroller families.

The kit is offered in two different configurations:

- LC16/LC24 ScreenKeys (i.e. RG only)
- RGB16/RGB24 ScreenKeys (i.e. RGB keys only)

Connection points provide the ability to add another two ScreenKeys (of any type).