



Description

WLAN solutions from SND consist of a selected number of commercially available WLAN cards or modules which can be attached to the Hyperstone CPU either directly or by means of a little interface circuit (usually FPGA). The WLAN extension board is either a PCMCIA-Interface Board or a CF-Card Interface with the appropriate fitting WLAN Module both for the Micro WebTarget Starter Kit. As one option for high end applications, it can be an extension board for the Hyperstone development board, where two Mini-PCI Interfaces are implemented and Mini-PCI-WLAN Modules can be integrated.

There are drivers for HyNetOS which are implemented the same way as Ethernet drivers and which also behave the same way as Ethernet drivers. Eventually some parameters such as WLAN channel no., WEP key and Station ID (SSID) as well as additional IP parameters have to be configured, but apart from that all IP based protocols and services found in HyNetOS can run over WLAN without any change.

PCMCIA / CF-Card

Hardware	8-Bit or 16-Bit data bus with non-multiplexed address bus. Simple attachment to Hyperstone CPU bus possible. Uses 1 interrupt line for communication (e.g. INT2) and 1 interrupt line for wait signal (INT3/WAIT).
WLAN standards	IEEE 802.11b (2.4 GHz up to 11 Mbit/s)
HyNetOS Driver	Ethernet-like driver for Intersil PRISM2 chipsets
Operating modes	Peer-to-Peer mode Infrastructure mode as client
Hot plugging	Inserting and removing cards at runtime is possible, if a small interface PLD is considered between the Hyperstone CPU and the WLAN card. Support for Hot-plugging in HyNetOS is available on request.
WiFi compliance	As stated by the WLAN module manufacturer
WLAN Features	Security, Encryption etc. as stated by the WLAN module manufacturer
Examples for Modules	PCMCIA: Linksys WPC11 CF-Card: Linksys WCF12, D-Link DCF-660W, SMC 2642W
Evaluation platform	Micro WebTarget Kit, MWT2/XS board with special hardware adapter board.

Mini-PCI

Hardware	32-Bit PCI bus (multiplexed data and address bus). Attachment to Hyperstone CPU by means of a bus interface FPGA. Uses 1 interrupt line for communication per module. Up to 4 modules can be operated in parallel. PCI bus master support for all modules. Needs E1-32XS CPU for full 32-Bit bus support.
WLAN standards	IEEE 802.11b (2.4 GHz, up to 11 Mbit/s) IEEE 802.11g (2.4 GHz, up to 54 Mbit/s) IEEE 802.11a (5.0 GHz, up to 54 Mbit/s) (on request)
HyNetOS Driver	Ethernet-like driver for Intersil ISL3880 chipsets (found on most MiniPCI WLAN adapters today).
Operating modes	Peer-to-Peer mode Infrastructure mode as client
Hot plugging	Not supported
WiFi compliance	As stated by the WLAN module manufacturer
WLAN Features	Security, Encryption etc. as stated by the WLAN module manufacturer
Examples for Modules	MiniPCI: GemTek WL-850F, Eazix EZWFM05-01
Evaluation platform	Micro WebTarget Kit CD, Hyperstone E1-32XS development board with PCI-bus extension adapter.

Contents of the Extension Kit

- PCMCIA- or CF-Card hardware extension module with cable
- Hardware schematics of extension module
- WLAN driver for HyNetOS (source code)
- Schematics and VHDL code of the PLD
- Optionally extension board for Hyperstone Development Board

Licensing

Apart from the license fees related to the Base HyNetOS system and eventually HyNetOS extensions (e.g. I*Target Server for the HTTP server or I*Target Client for HTTP or FTP clients) no additional license fee is charged if using the WLAN Driver for serial production. However, the software related to the operation of the WLAN extension board may be used only in combination with a HyNetOS license. The hardware design can be considered open source and can be copied, modified or otherwise re-used by SND's license customers.

WLAN support will be officially released with HyNetOS V2.3 (scheduled for end of September 2004)