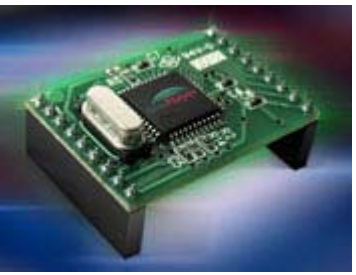
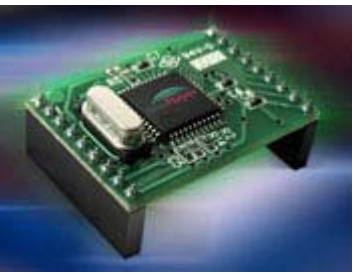


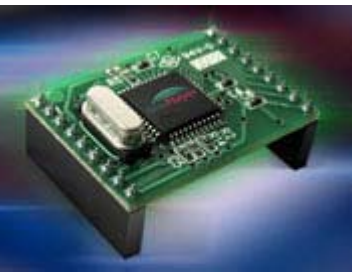
Netværk & elektronik

- Oversigt
  - Ethernet og IP teori
  - Montering af Siteplayer modul
  - Siteplayer teori
  - Siteplayer forbindelse
  - HTML
  - Router (port forwarding!)
  - Projekter



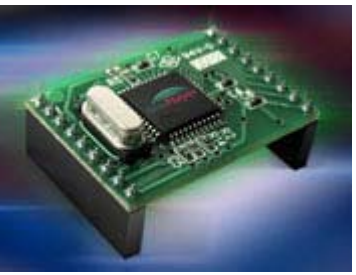
Ethernet

- På Mars er der links til www.siteplayer.com og www.siteplayer.dk (Hvis I skal købe en Siteplayer til jer selv!!)
- Hent SW fra en af de ovenstående links.
- Ethernet teori v3.ppt



Siteplayer

- Komplet Ethernet web-server på kun 23,5 x 33 mm
- 8 ind-/udgange der kan styres og aflæses fra en web-browser
- Fx 8 relæer, 8 kontakt indgange, fire 8-bit PWM / event tællere, SPI
- Seriel port med hastighed 300-115.200 bits/sek.
- 48K bytes flash ledig til web-sider. Opload via Ethernet
- 768 bytes til data objekter af typen bit, byte, integer, long og string
- Web-sider redigeres med standard HTML værktøjer
- Statisk eller dynamisk (DHCP) IP adresse
- Understøtter ARP, ICMP, UDP, TCP, DHCP
- Firmware kan opgraderes via Ethernet
- Data input via HTML forms: tekst felter, knapper, links
- Standard 10BaseT Ethernet med automatisk polaritets korrektion
- Kan fjernstyres/aflæses via web-browser, JAVA, C, C++, Visual Basic
- Kræver kun et print m. RJ45 stik og 5V strømforsyning for at komme i gang



Siteplayer blokdiagram

Blok diagram

Funktions diagram

<table>
<tr><td rowspan="2">UART

SERIAL interface</td><td>Objekt processor

Interface til UART</td><td>Web-server

Gemmer web-sider og styrer grafik- / data baserede objekter

Modtager data fra browser</td><td>Ethernet protokol processor

Ethernet og TCP/IP protokol</td><td>10BaseT Ethernet

Interface</td></tr>
<tr><td>Objekt RAM

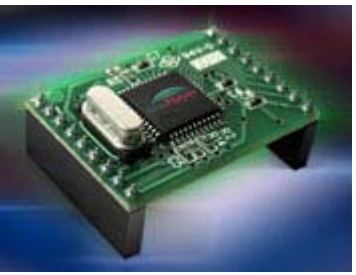
768 bytes til live data objekter

Styrer manipulation af web-sider</td><td colspan="2">FLASH web-sider

48Kb til web-sider og konfigurations parametre</td><td>Hardware I/O

8 ind-/udgange

4 PWM (8bit) el. event tæller</td></tr>
</table>

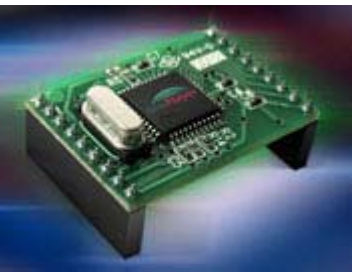


Siteplayer Pin layout

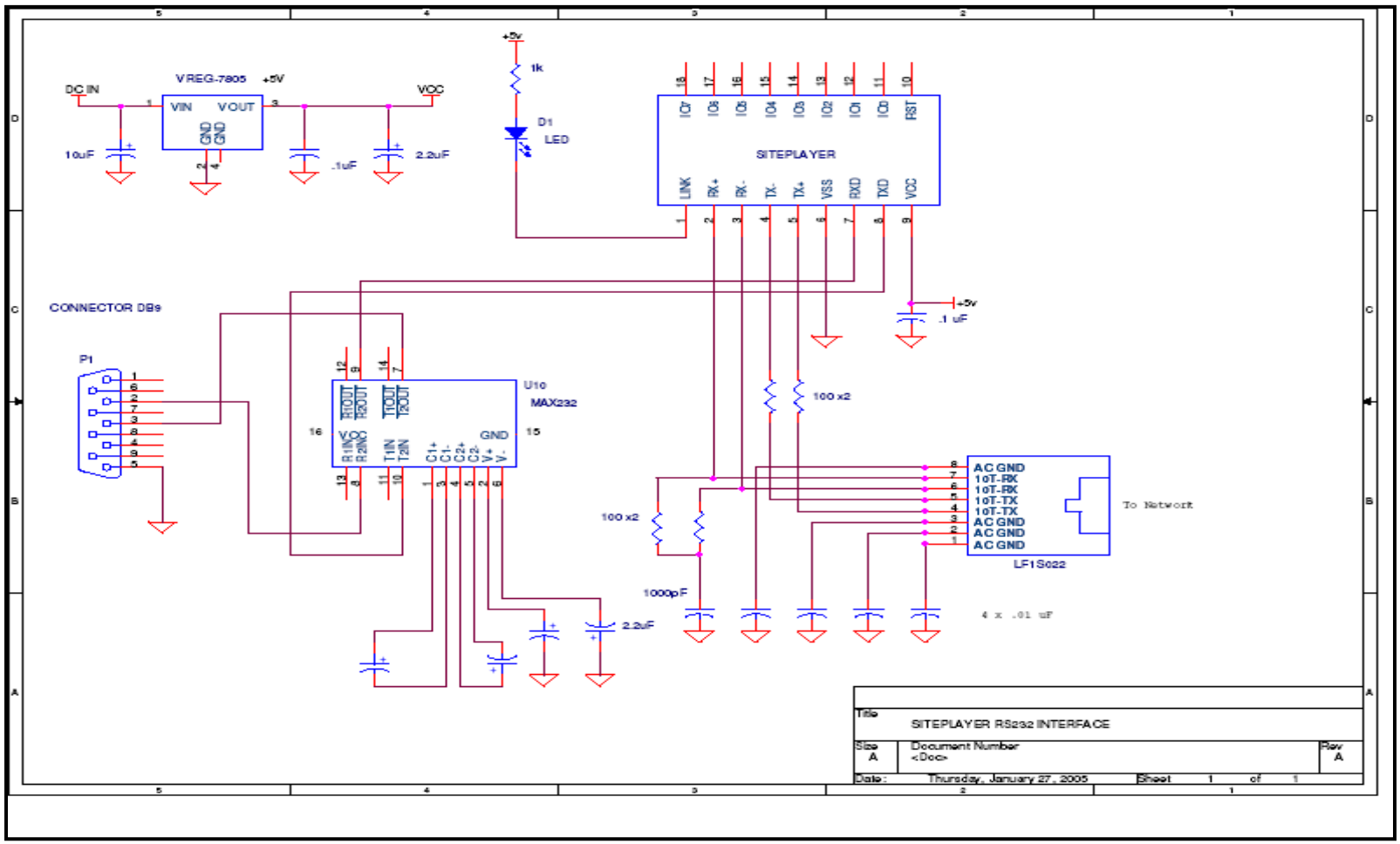
Pin layout

Ben forbindelser

PIN	Funktion	Beskrivelse
1	Link LED	Aktiv lav når Ethernet link er etableret. Typisk til +5V via modstand
2	RX +	10BaseT receive + forbindes typisk til filter/trafo
3	RX -	10BaseT receive - forbindes typisk til filter/trafo
4	TX -	10BaseT transmit - forbindes typisk til filter/trafo
5	TX +	10BaseT transmit + forbindes typisk til filter/trafo
6	GND	Ground (Vss)
7	RXD	Seriel receive data
8	TXD	Seriel transmit data
9	+5V	+5V stabiliseret, forbrug typisk 75mA (Vcc)
10	Reset	Høj => Reset, Lav eller ej forbundet => Running mode
11-18	I/O	Hardware Input/Output IO0-IO7 el. SPI interface (11-SCK, 12-MOSI, 13-MISO, 14-18Chip select)

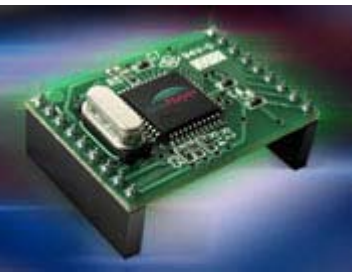


Siteplayer print



Siteplayer print

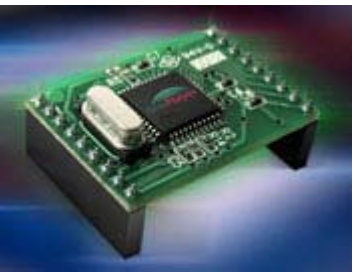
- Print udleveres og komponenter



Siteplayer connect

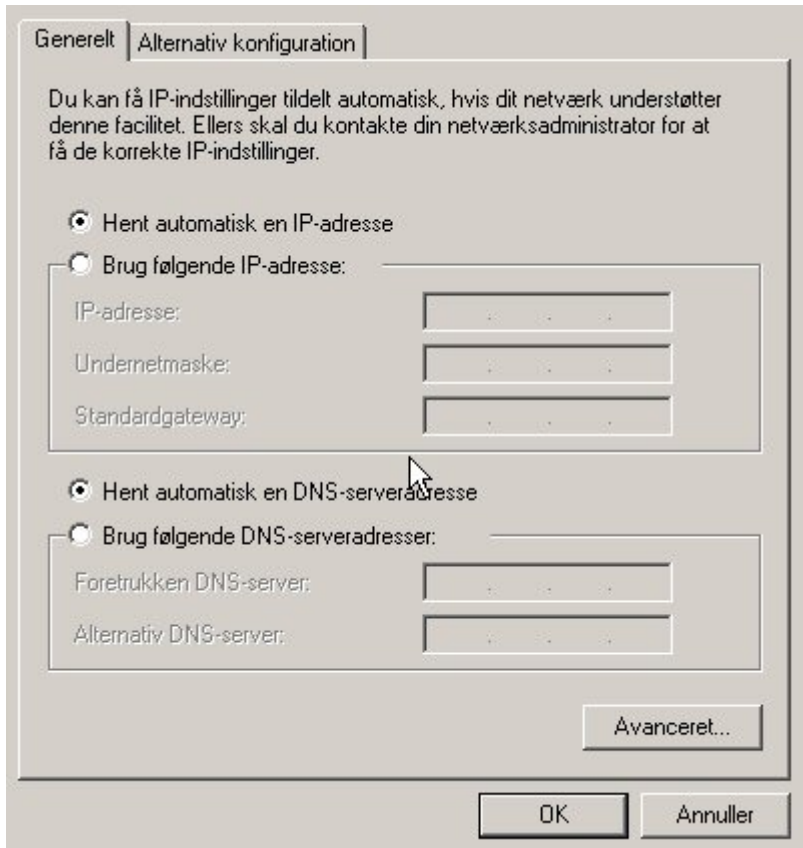
- Ipconfig (DOS kommdo)
- Hvad er IP adressen på NIC?
- Er den indenfor 192.168.0.xxx
- Default for SP er 192.168.1.250

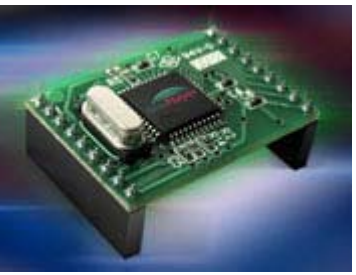
```
Windows IP-konfiguration

     Værtsnavn. . . . . . . . . . . . . . . . : miranet-1fbc34b
     Primært DNS-suffiks. . . . . . . . . . . :
     Nodetype . . . . . . . . . . . . . . . . : Ukendt
     IP-routing aktiveret . . . . . . . . . . : Nej
     WINS-proxy aktiveret . . . . . . . . . . : Nej

Ethernet-netværkskort LAN-forbindelse 2:

     Forbindelsesspecifikt DNS-suffiks. . . . . :
     Beskrivelse. . . . . . . . . . . . . . . . : NVIDIA nForce Networking Co
ntroller
     Fysisk adresse . . . . . . . . . . . . . . : 00-11-09-CC-A1-47
     Dhcp aktiveret . . . . . . . . . . . . . . : Ja
     Automatisk konfiguration aktiveret . . . . : Ja
     IP-adresse . . . . . . . . . . . . . . . . : 10.10.1.50
     Undernetmaske. . . . . . . . . . . . . . . : 255.255.255.0
     Standardgateway. . . . . . . . . . . . . . : 10.10.1.1
     DHCP-server. . . . . . . . . . . . . . . . : 10.10.1.1
     DNS-servere. . . . . . . . . . . . . . . . : 10.10.1.1
     Rettigheden opnået . . . . . . . . . . . . : 6. august 2008 10:27:43
     Rettigheden udløber. . . . . . . . . . . . : 7. august 2008 10:27:43

Ethernet-netværkskort LAN-forbindelse 3:

     Medietilstand. . . . . . . . . . . . . . . : Mediet afbrudt
     Beskrivelse. . . . . . . . . . . . . . . . : Bluetooth PAN Network Adapt
er
     Fysisk adresse . . . . . . . . . . . . . . : 00-11-67-58-CF-9A

C:\WINDOWS>_
```



Siteplayer connect

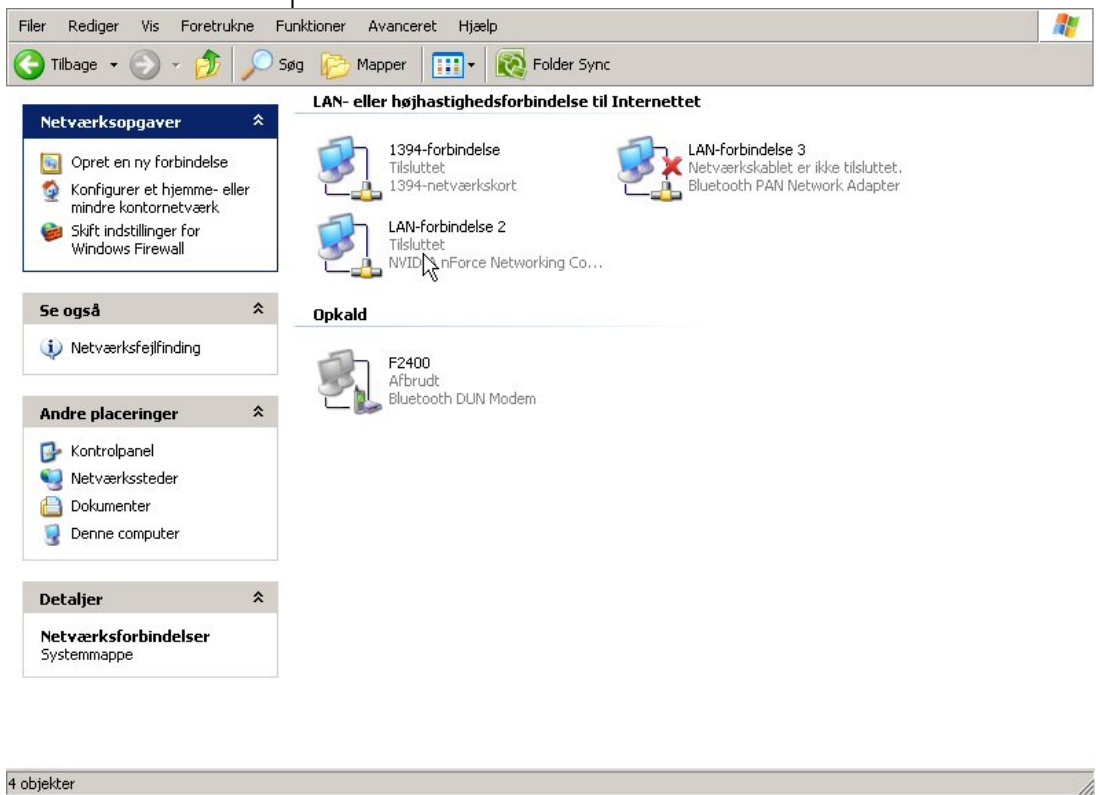
- DHCP (**Dynamic Host Configuration Protocol**)
- DHCP server
- Små netværk
- Nemt at tilslutte enheder til nettet

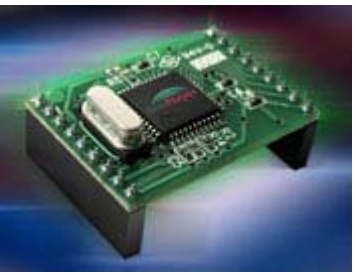




Siteplayer connect

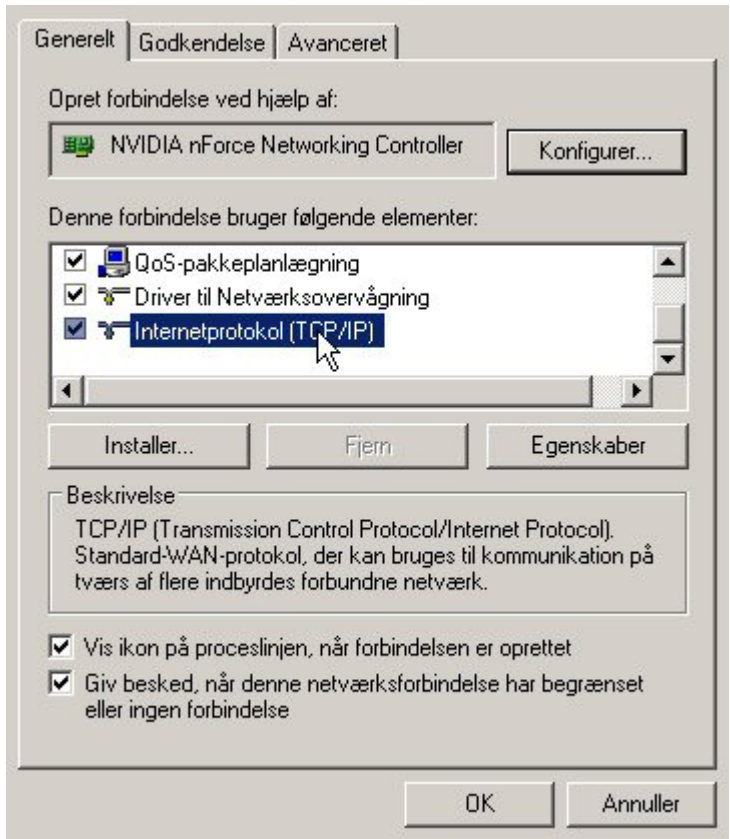
- Ændre NIC indstillinger

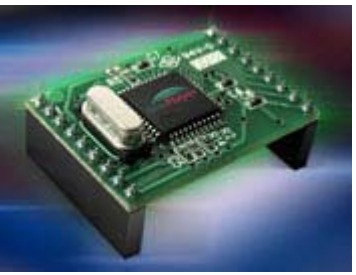




Siteplayer connect

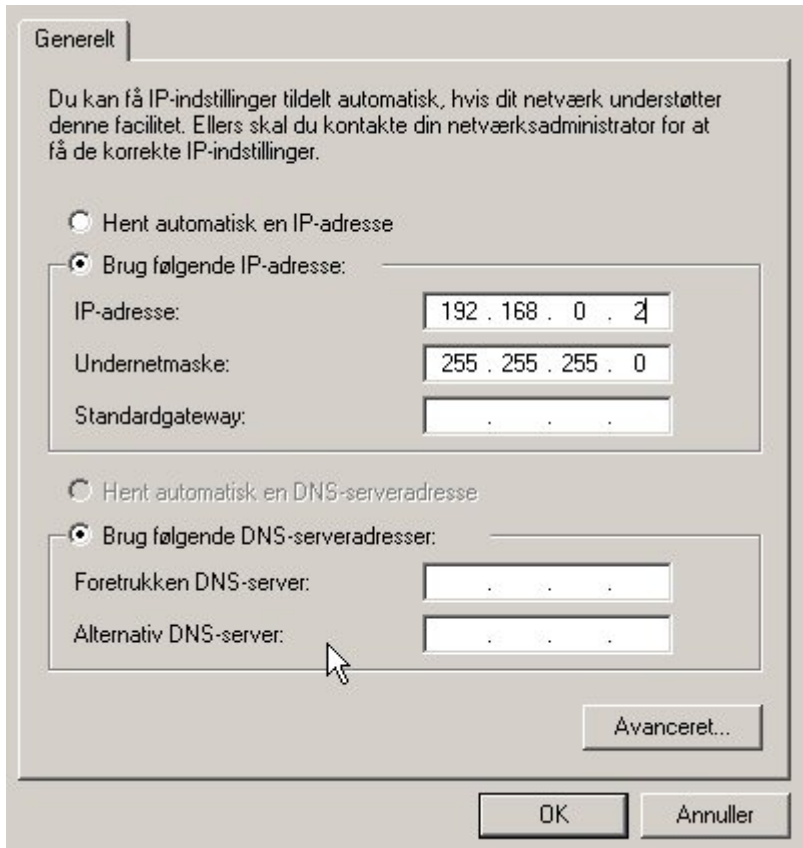
- NIC vælges
- Tryk på Egenskaber





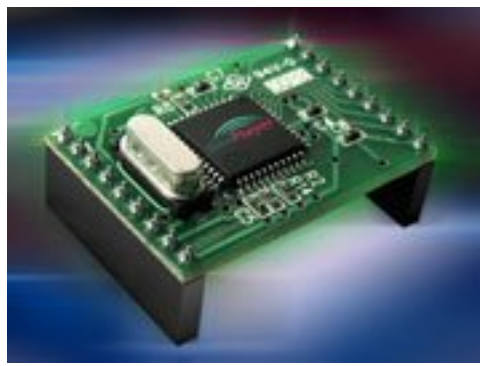
Siteplayer connect

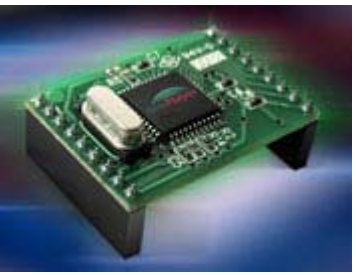
- Tryk på ”Brug følgende IP adr.”
- Siteplayer har default adr. 192.168.1.250
- Og benytter DHCP, det skal ændres til fast IP adr.!!!



Siteplayer connect

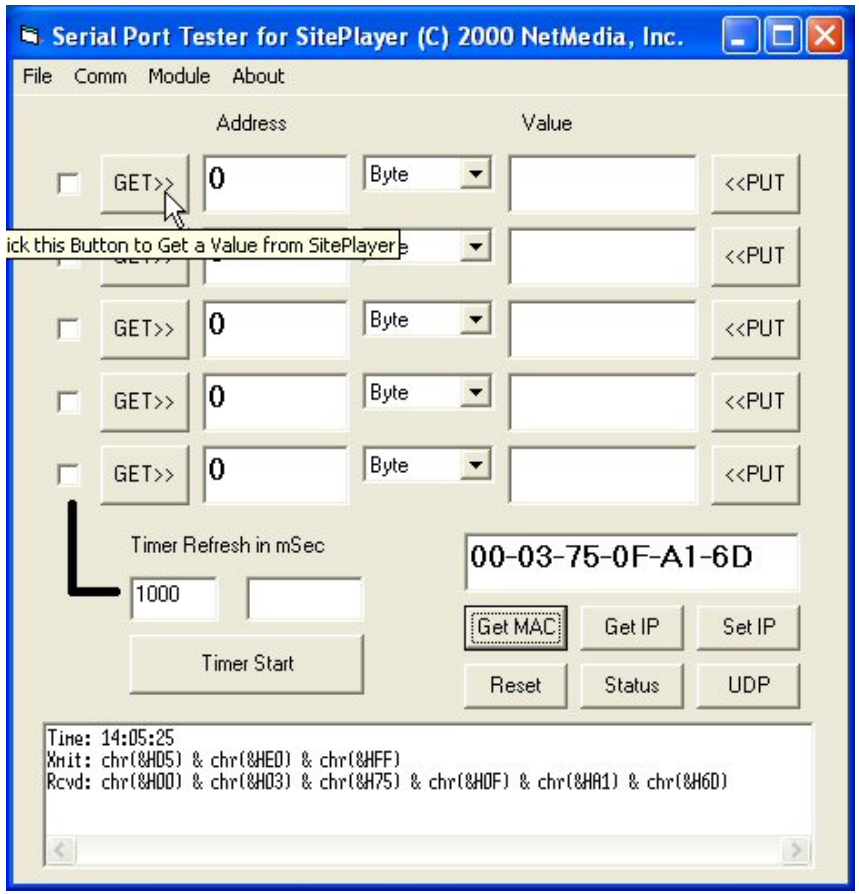
- Tilslut Siteplayer og PC med et netværks kabel!
- Ping 192.168.0.250
- OK?

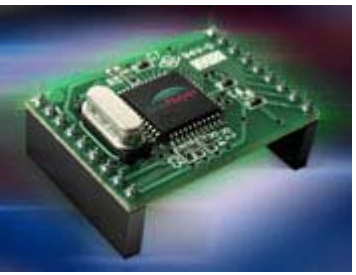




Siteplayer connect

- Tilslut Siteplayer via RS232 kabel!
- Tryk ”Get IP” adressen
- Ændre den til 192.168.0.250
- Tryk ”Set IP”



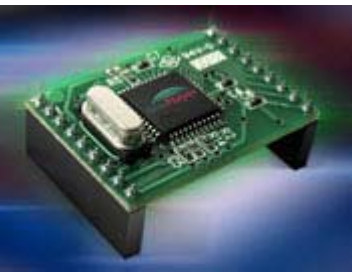


Siteplayer definition

- Factory.SPD
- DHCP Off
- IP adr ændres til 192.168.0.250
- Stierne skal være korrekte!!!
- Program files skal ændres til programmer!!

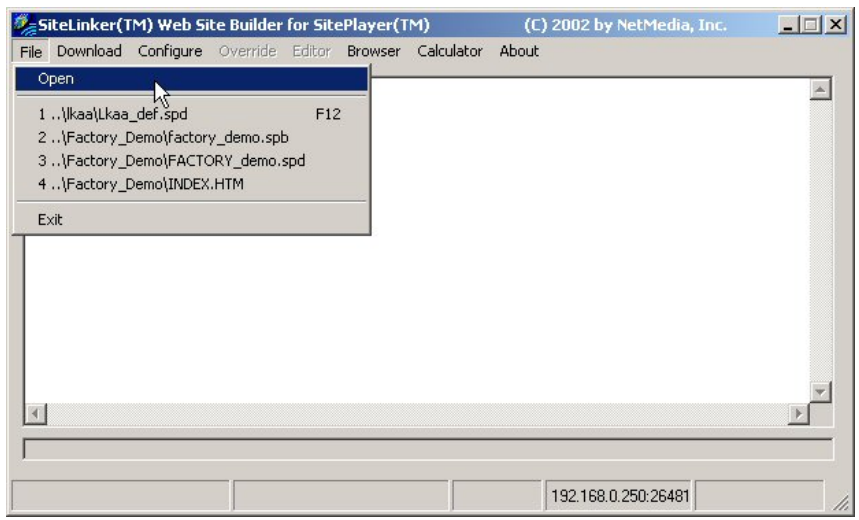
```
;
; These are initial variables that you can place in your system
;
;$Devicename sets the name or description of the device
$Devicename "SitePlayer(tm) Factory Default Web Page"

;$DHCP on sets SitePlayer to find its IP address from a DHCP server
$DHCP on

;$DownloadPassword sets password for downloading web pages and firmware
$DownloadPassword ""

;$InitialIP sets SitePlayer's IP address to use if no DHCP server is available
$InitialIP "192.168.1.250"

;$PostIRQ on sets SitePlayer to generate a low level IRQ on pin 11
$PostIRQ off

;$Sitefile sets the binary image filename that will be created
$Sitefile "C:\Program Files\SitePlayer\factory.spb"

;$Sitepath sets the root path of the web pages for this project
$Sitepath "C:\Program Files\SitePlayer\Factory_demo"

;$Include sets the name of a file to include during make process
$Include "C:\Program Files\SitePlayer\pcadef.inc"
$Include "C:\Program Files\SitePlayer\udpsend_def.inc"
```

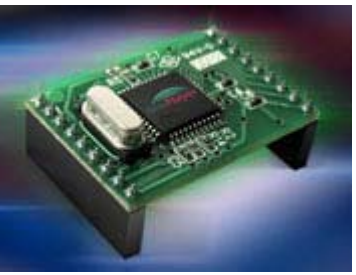
Lkaa



Siteplayer connect

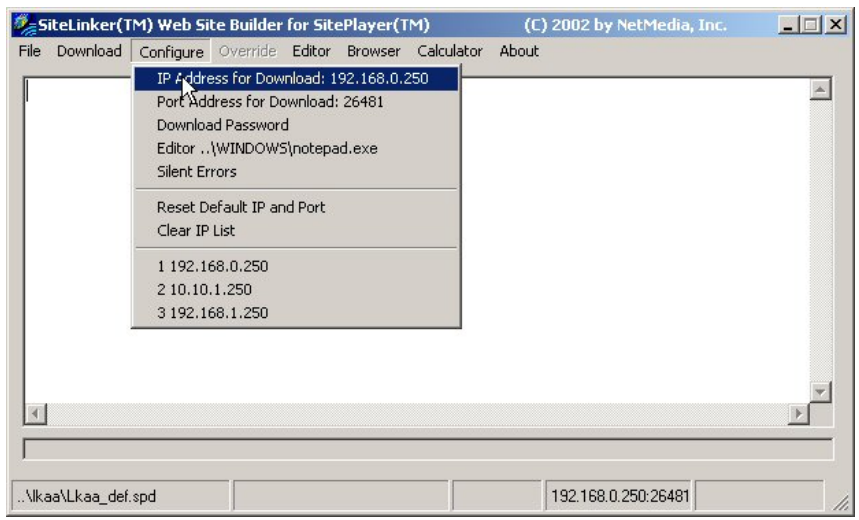
- Start Sitelinker.exe
- File/Open og vælg din *.spd file

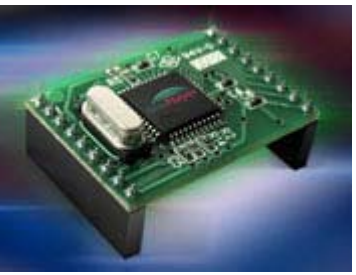




Siteplayer connect

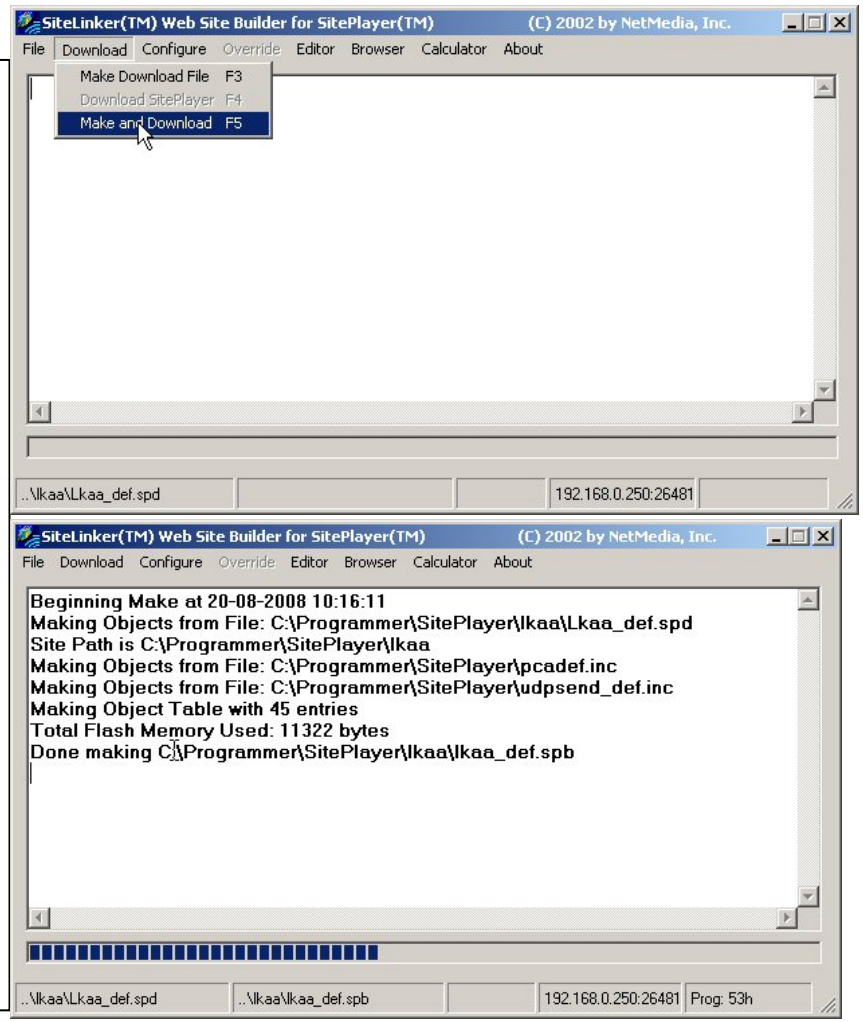
- Tryk på: Configure/IP Adress….
- Sæt adr. til det ønskede!
- Her kan Port nummer ændres, hvis der behov for det!

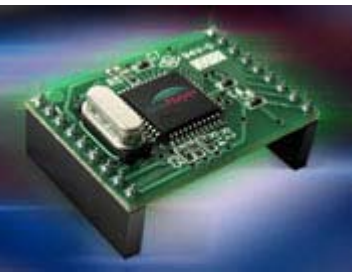




Siteplayer connect

- Tryk på: F5 eller Download/Make and Download
- Nu generes den endelig kode file til SP

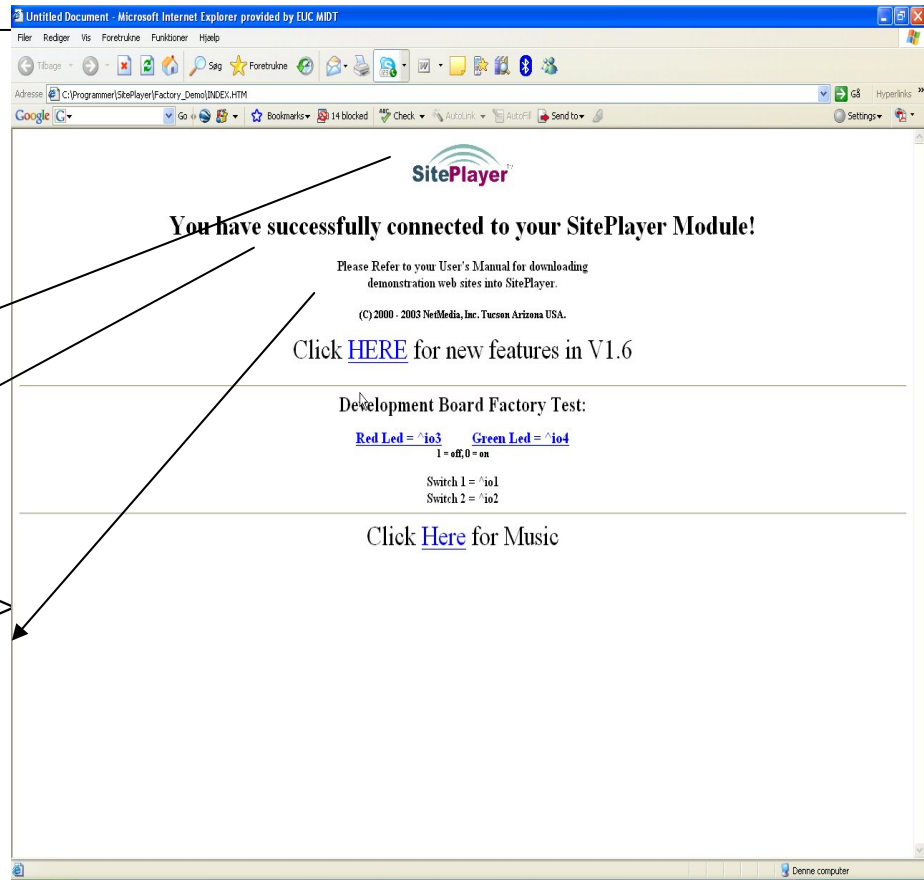


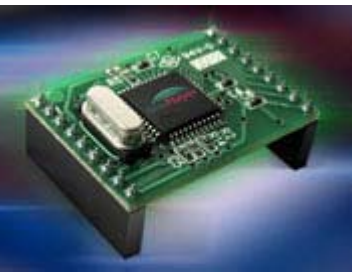


Siteplayer HTML

Overskrift, type tegn

- <html>
- <head>
- <title>Untitled Document</title>
- <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
- </head>
- <body bgcolor="#FFFFFF" text="#000000">
- <img src="SitePlayer_logo.gif" width="145" height="53">
-
- You have successfully connected to your SitePlayer
- Module!
-
- Please Refer to your User's Manual for downloading
- demonstration web sites into SitePlayer.
-
- (C) 2000 - 2003 NetMedia, Inc. Tucson Arizona USA.<font size="2">
-
-

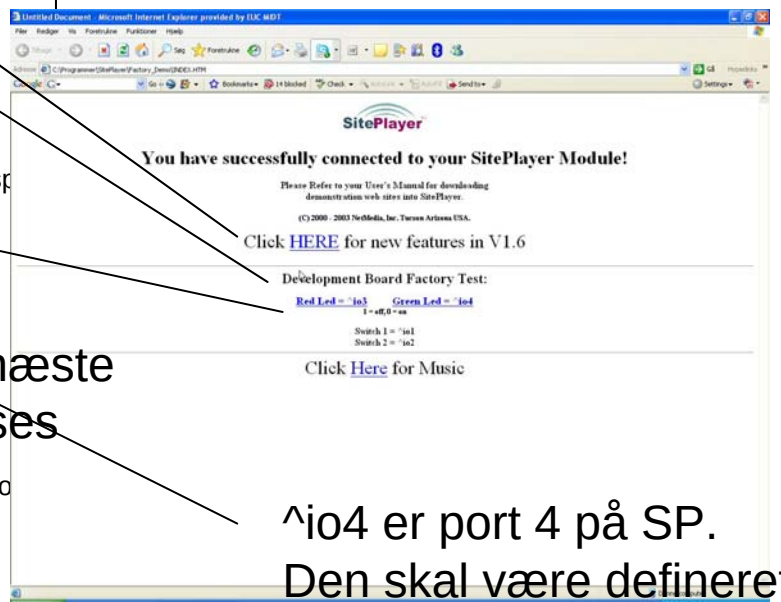




Siteplayer HTML

```
<font size="6">Click <a href="index3.htm">HERE</a> for new features in V1.6</font><br>
  <br>
  <hr>
  <b><font size="5">Development Board Factory Test:</font></b><br>
  <br>
  <a href="factory.spi?io3=^io3~1"><font size="4"><b>Red Led = ^io3</b></font></a>
             
  <b><font size="4"><a href="factory.spi?io4=^io4~1">Green Led = ^io4</a></font></b><br>
  <b>1 = off, 0 = on</b><br>
  <br>
  <b><font size="3">Switch 1 = ^io1<br>
  Switch 2 = ^io2</font></b><br>
  </font>
</div><hr>
<div align="center"><font size="6">Click <a href="inmylife.mid">Here</a> fo
Music
  </font> </div>
</body>
</html>
```

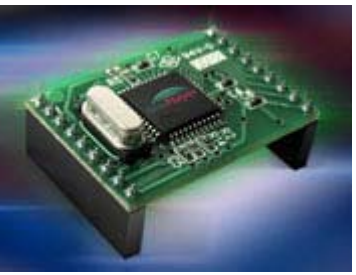
Link til index3.htm!!



Interface file!!
Referer til den næste side der skal vises

^io4 er port 4 på SP.
Den skal være defineret i SPD

.SPI filen skal ligge sammen med index.htm



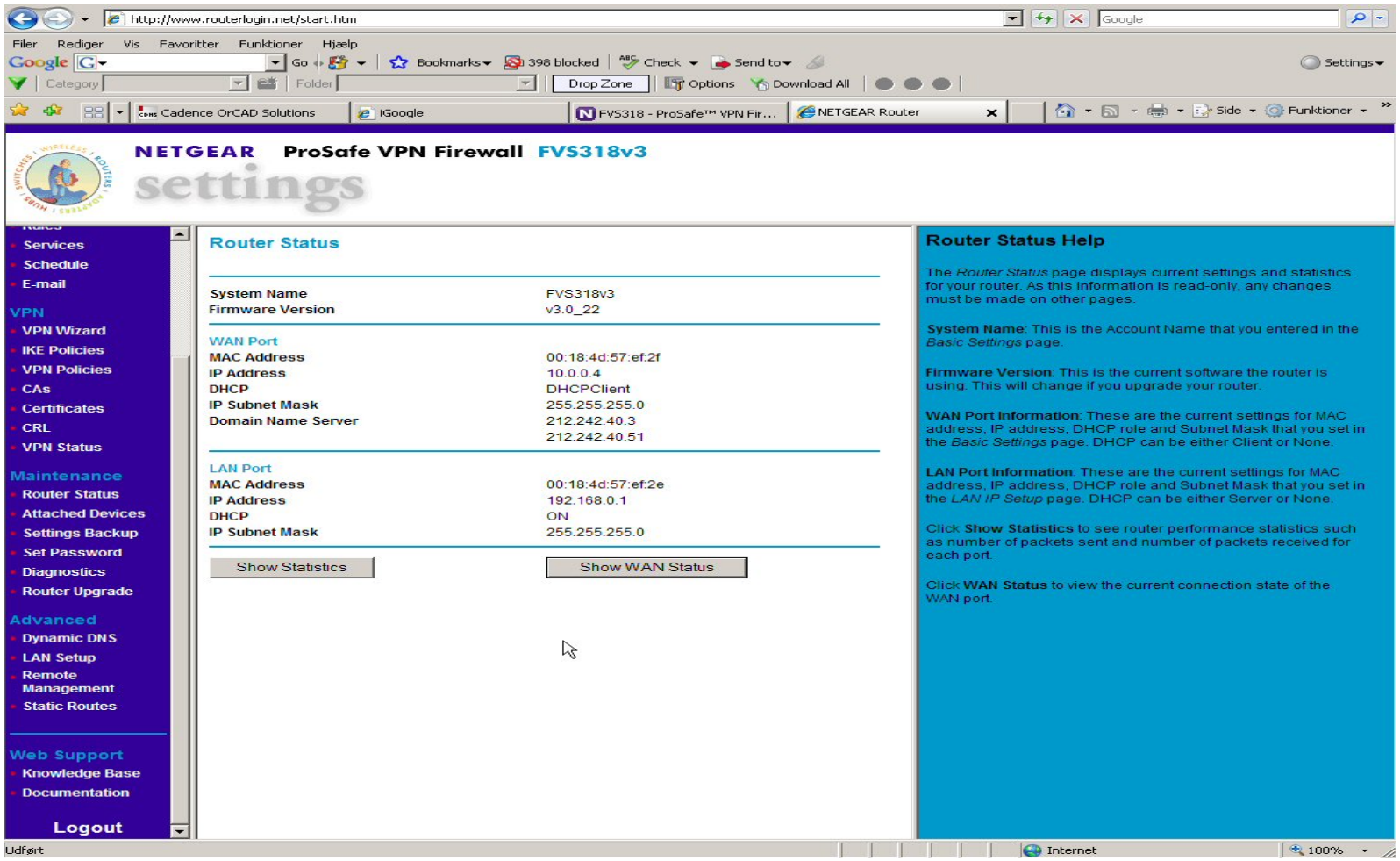
Siteplayer HTML

- I et bibliotek under SP ligger der en masse små billeder til fri benyttes til sin egen hjemmeside!
- Der findes også en kommando til automatik opdatering af hjemmesider

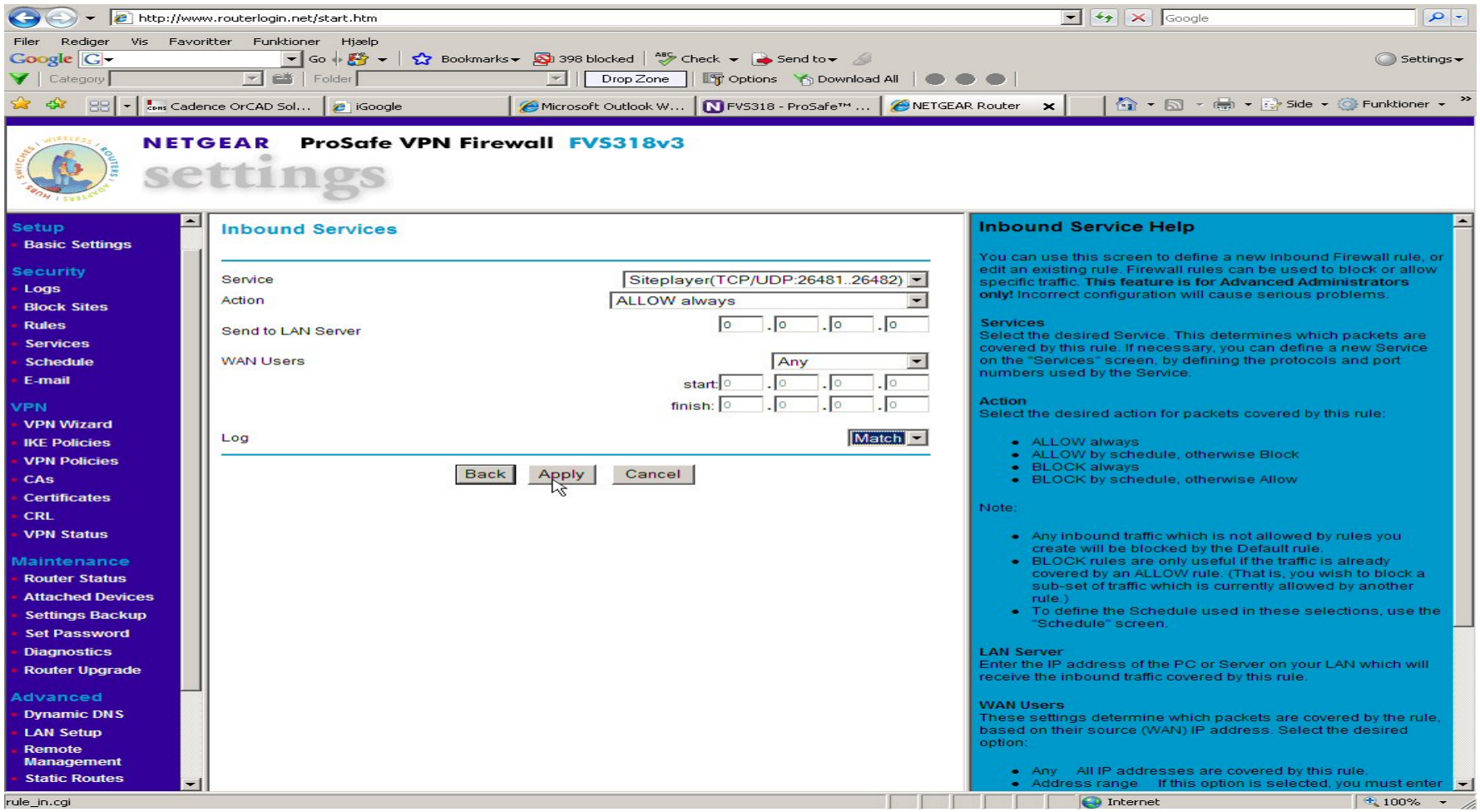
Router (port forwarding!)

- Der findes ikke en entydig måde at åbne for en port i en router
- På Mars er en link til en hjemmeside, hvor man kan teste om porten er åben!

Router (port forwarding!)



Router (port forwarding!)



Router (port forwarding!)

http://www.routerlogin.net/start.htm

NETGEAR ProSafe VPN Firewall FVS318v3

settings

Setup
- Basic Settings

Security
- Logs
- Block Sites
- Rules
- Services
- Schedule
- E-mail

VPN
- VPN Wizard
- IKE Policies
- VPN Policies
- CAs
- Certificates
- CRL
- VPN Status

Maintenance
- Router Status
- Attached Devices
- Settings Backup
- Set Password
- Diagnostics
- Router Upgrade

Advanced
- Dynamic DNS
- LAN Setup
- Remote Management
- Static Routes

Outbound Services

Service: Siteplayer(TCP/UDP:26481..26482)

Action: ALLOW always

LAN Users: Any
start: 0 . 0 . 0 . 0
finish: 0 . 0 . 0 . 0

WAN Users: Any
start: 0 . 0 . 0 . 0
finish: 0 . 0 . 0 . 0

Log: Match

Back | Apply | Cancel

Outbound Service Help

You can use this screen to define a new Outbound Firewall rule, or edit an existing rule. Outbound Firewall rules are used to block or allow access by computers on your network to services or applications on the Internet.

Services
Select the desired Service or application to be covered by this rule. If the desired service or application does not appear in the list, you must define it using the Services menu.

Action
Select the desired action for packets covered by this rule:

- BLOCK always
- BLOCK by schedule, otherwise Allow
- ALLOW always
- ALLOW by schedule, otherwise Block

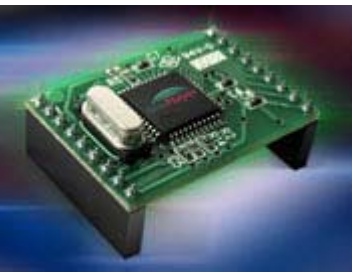
Note:

- Any outbound traffic which is not blocked by rules you create will be allowed by the Default rule.
- ALLOW rules are only useful if the traffic is already covered by a BLOCK rule. (That is, you wish to allow a subset of traffic which is currently blocked by another rule.)
- To define the Schedule used in these selections, use the "Schedule" screen.

LAN users
These settings determine which computers on your network are affected by this rule, based on their source (LAN) IP address. Select the desired option:

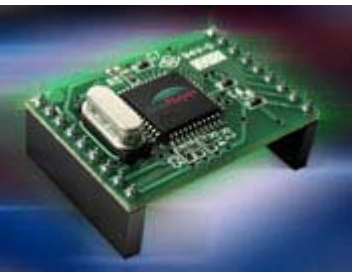
- Any - All local IP addresses are covered by this rule.
- Address range - If this option is selected, you must enter the "Start" and "Finish" fields.
- Single address - Enter the required address in the "Start" fields.

WAN Servers



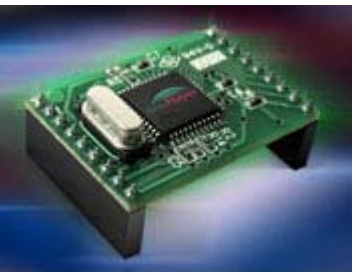
Hjælp

- Der er links på Mars under Siteplayer og der bliver også udleveret materiale der kan hjælpe jer på vej de næst 2 dage!



Projekter

- Tænd og slukke med SP og se om en kontakt åben eller lukket?
- Tilslut en AD-konverter og vis måling på SP hjemmesiden?
- Tilslut en PIC via seriel interface og vis data på SP hjemmesiden?



Vigtigt!!

- For hver SP der mangler på fredag bliver alle trukket en karakter ned!!!