

**Sena Device Server**

**Serial/IP™**

**Version 1.0.0**

2005. 3. 7.

## Release Note

Revision	Date	Name	Description
V1.0.0	2005-03-7	HJ Jeon	Serial/IP 4.3.2

( )

210

137-130,

: (02) 573-5422

: (02) 573-7710

email: [support@sena.com](mailto:support@sena.com)

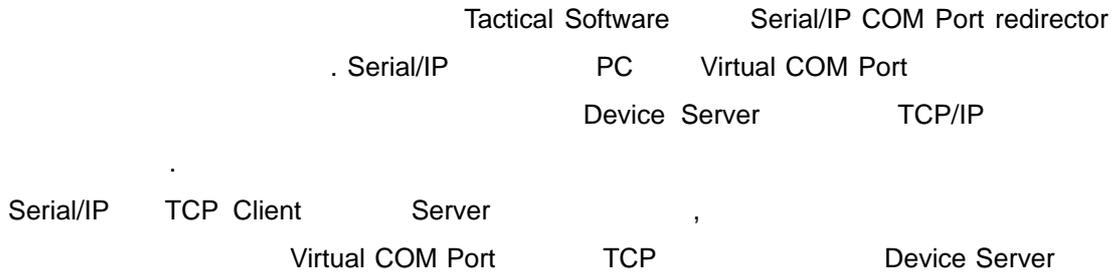
: <http://www.sena.com>

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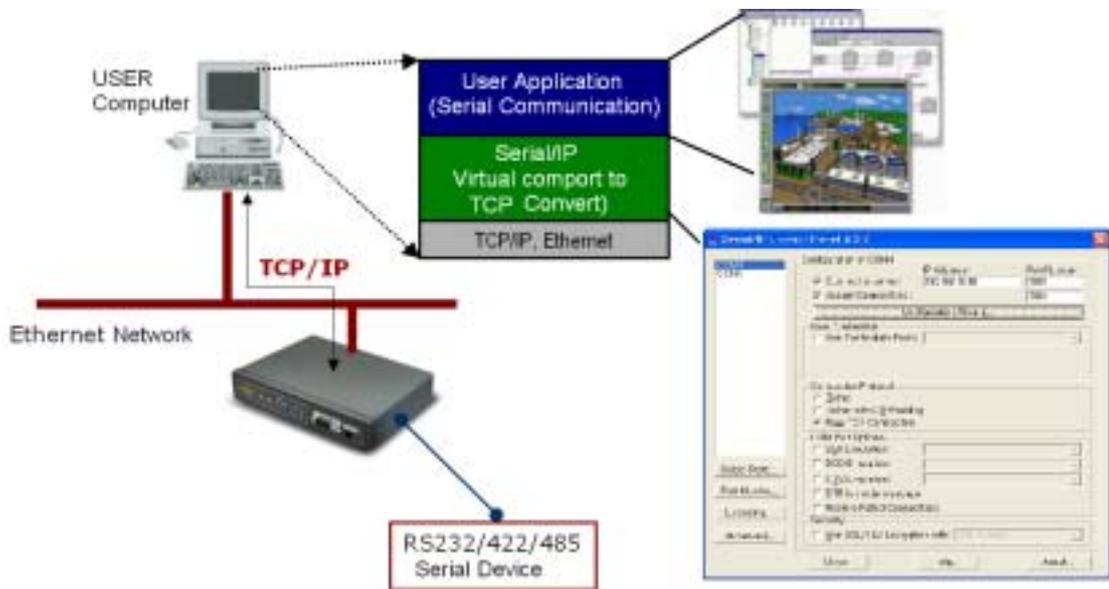
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# 1. Serial/IP

## 1.1

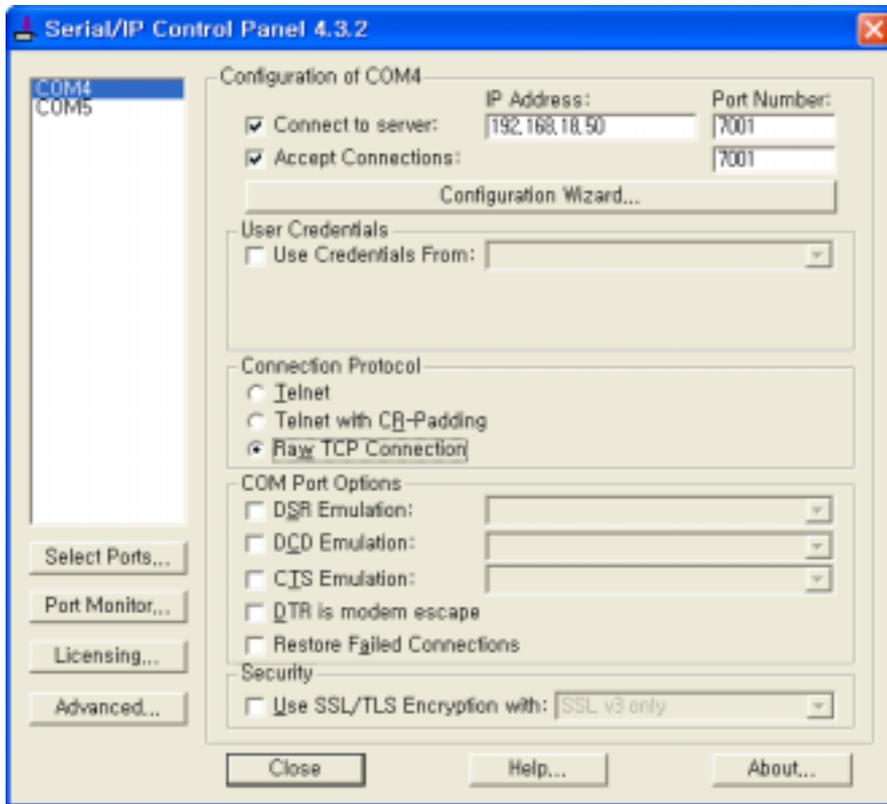


## 1.2



- PC Device Server Ethernet
- PC Serial/IP Virtual COM Port
- Virtual COM Port Open
- Open Virtual COM Port Device Server TCP/IP
- Device Server
- Device Server TCP/IP Serial/IP Virtual COM Port

### 1.3



- Configuration of COM x : Client , Device Server  
IP Address Port
- Accept Connection : Server Listen Port
- Configuration Wizard :
- Connection Protocol : Device Server TCP
- COM port Option :
- Security :
- Select Port : Virtual COM Port
- Port Monitor : Device Server
- Advanced... :

## 1.4

### 1.4.1 Client

Connect to server  
Device Server  
IP Server Port  
가 Virtual COM Port Open Serial/IP Virtual COM Port  
Device Server IP Port TCP

### 1.4.2 Server

Accept connection  
Listen TCP Port  
가 Virtual COM Port Open Serial/IP Listen Port  
Device Server TCP

### 1.4.3 Server & Client

Connect to server Accept connection  
Device Server IP Server Port Server Listen Port  
가 Virtual COM Port open Device Server  
(Client ) Port  
(Server ).

## 2. Serial/IP Client

### 2.1 RawTCP

TCP/IP

-TCP/IP

#### 2.1.1

LS, NEMO, PS, SS, STS

Device Server

#### 2.1.2 Device Server

- SS/STS : Server TCP
- : Host = Server ( : Port = 7001)



Host mode configuration

Host mode : TCP

TCP listening port (1024-65535, 0 for only outgoing connections) : 7001

Telnet protocol : Disabled

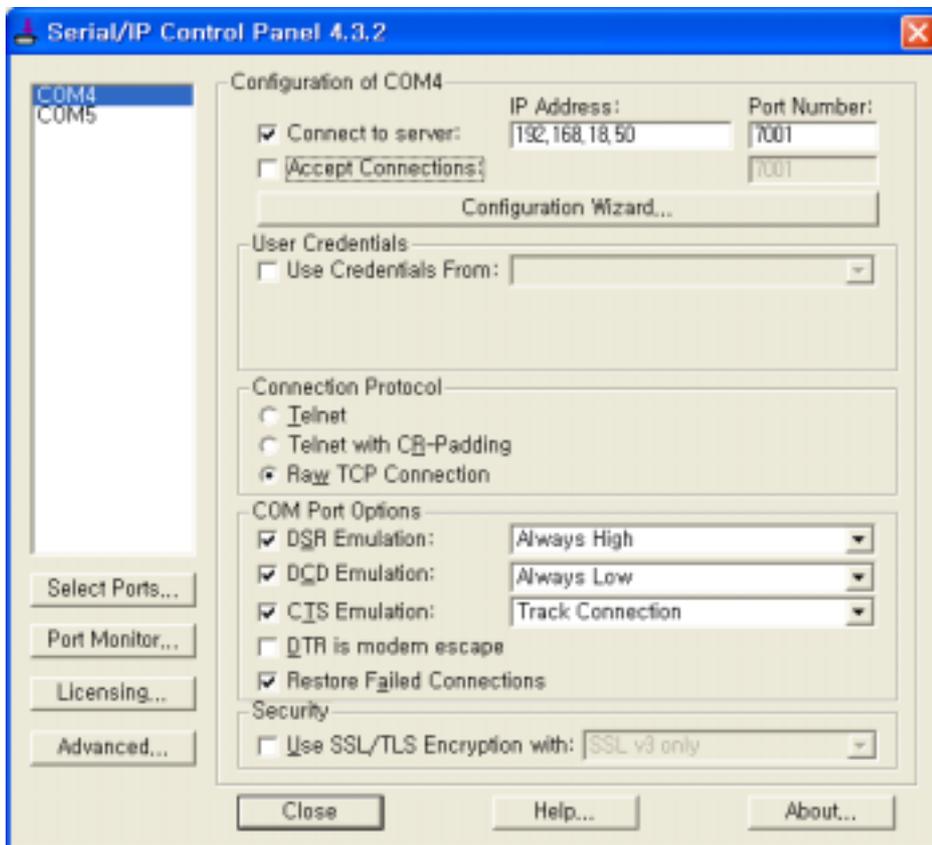
Max. allowed connection (1-32) : 32

Cyclic connection to remote hosts (sec, 0 : disable) : 0

Inactivity disconnection timeout (sec, 0 : unlimited) : 0

Buttons: Save to flash, Save & apply, Cancel

#### 2.1.3 Serial/IP



Serial/IP Control Panel 4.3.2

Configuration of COM4

IP Address: 192.168.18.50 Port Number: 7001

Connect to server: 192.168.18.50 7001

Accept Connections: 7001

Configuration Wizard...

User Credentials

Use Credentials From: [dropdown]

Connection Protocol

Telnet

Telnet with CB-Padding

Raw TCP Connection

COM Port Options

DSR Emulation: Always High

DCD Emulation: Always Low

CTS Emulation: Track Connection

DTR is modem escape

Restore Failed Connections

Security

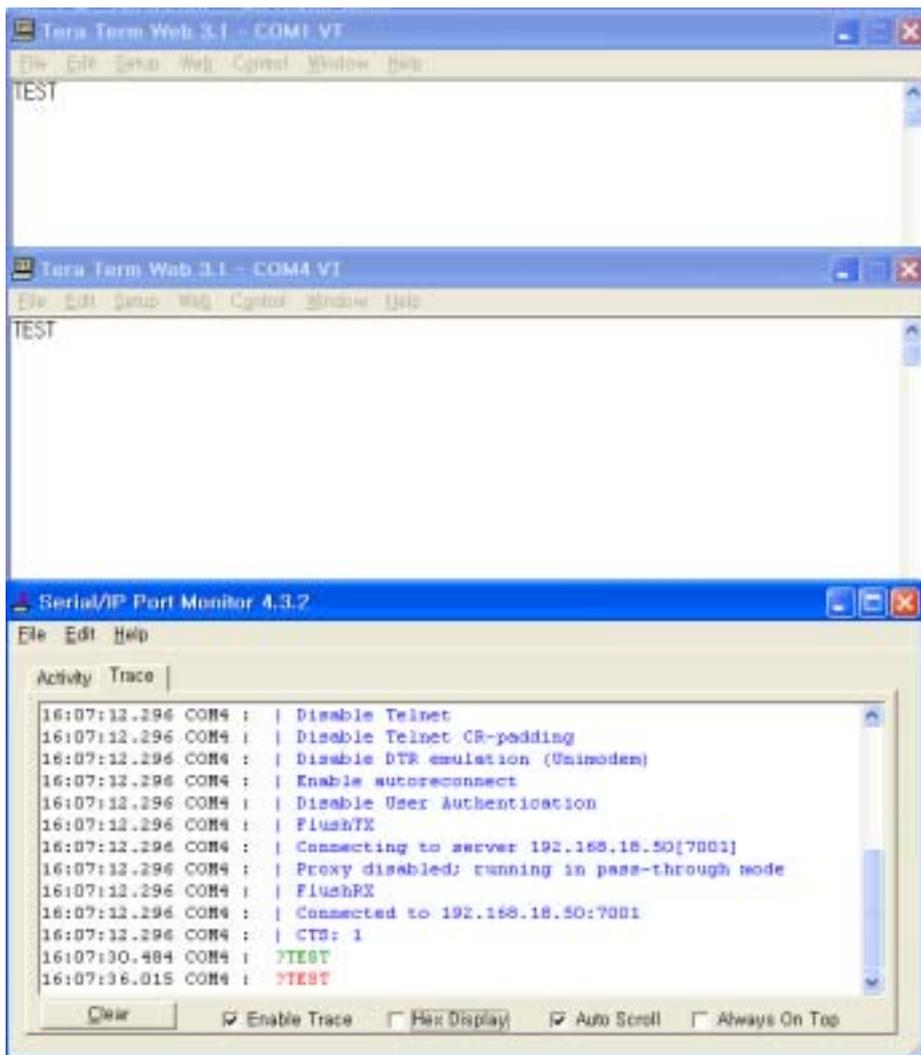
Use SSL/TLS Encryption with: SSL v3 only

Buttons: Close, Help..., About...

- Connect to server : Device Server IP Port  
(192.168.18.50 : 7001)
- Connection Protocol : RawTCP
- DSR/DCD/CTS Emulation :  
: Always High, Always Low, Track Connection( High)
- Restore Failed Connections : TCP

### 2.1.4

- Virtual COM Port Open Serial/IP Device Server
- [Port Monitor]
- Client PC





## 2.2. VirtualCOM

VirtualCOM

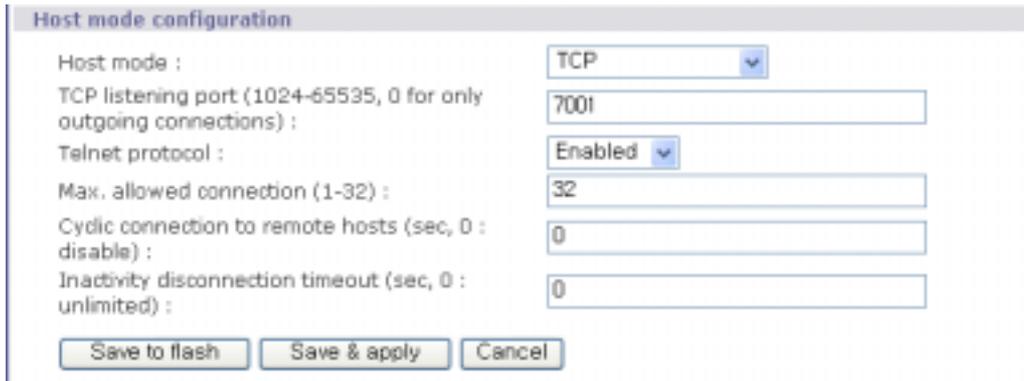
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Baud rate , RTS,CTS,DTR,DSR

### 2.2.1

PSx10, SS, STS Device Server

### 2.2.2 Device Server

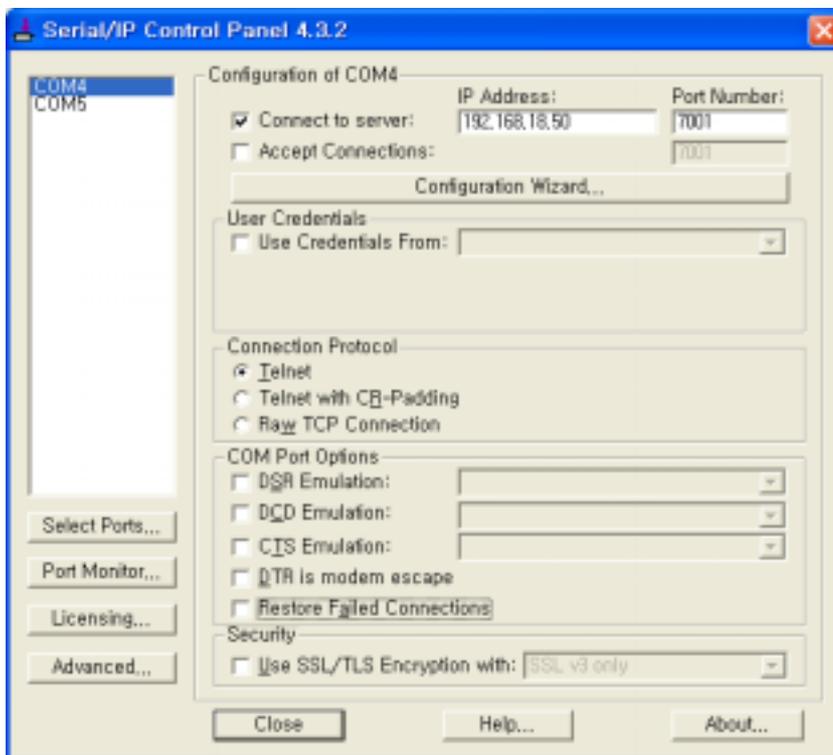


- Telnet protocol Enable

- Device Server VirtualCOM Telnet(RFC 854)

COM Port Control protocol (RFC 2217)

### 2.2.3 Serial/IP

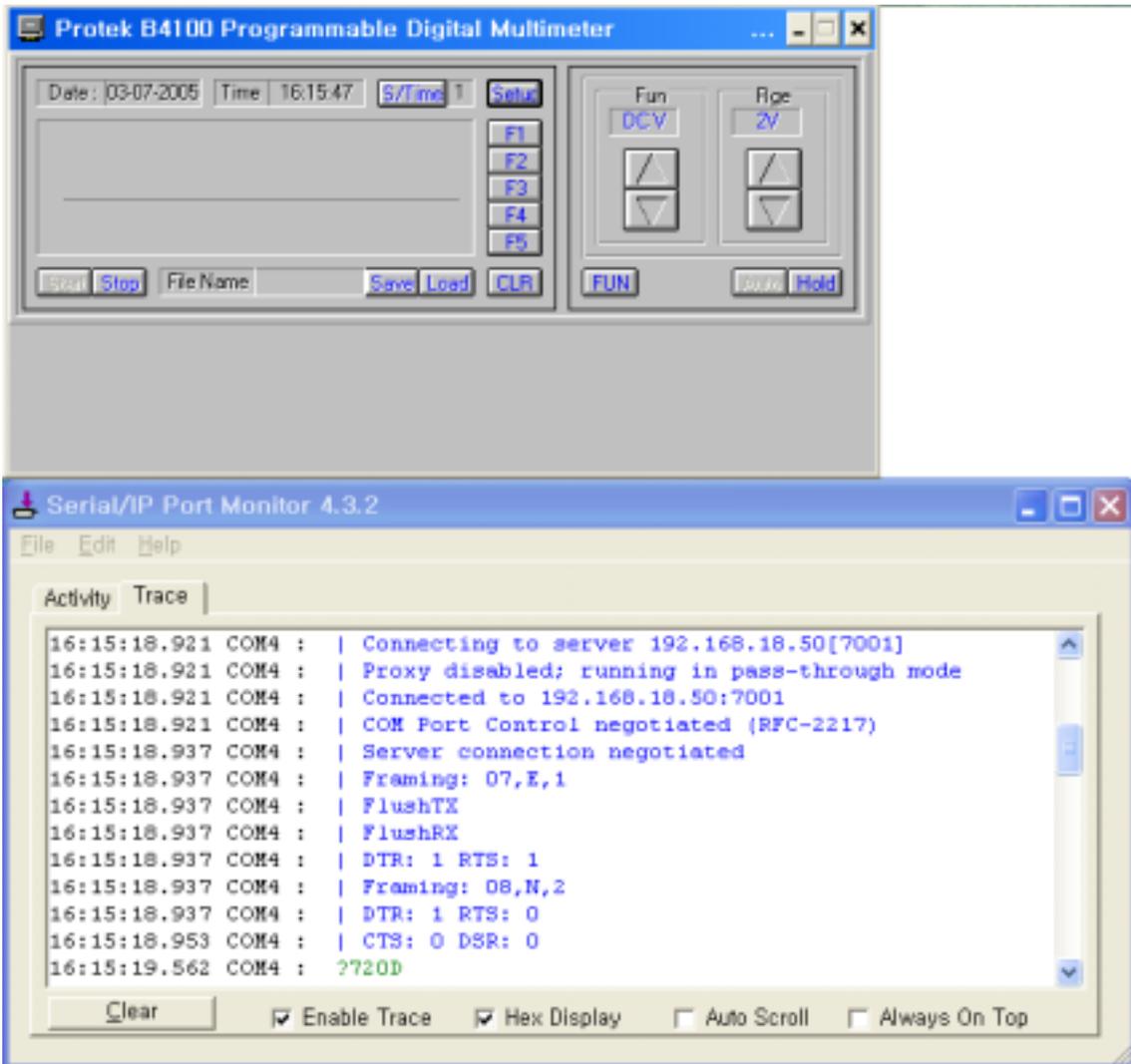


- Connection protocol Telnet

## 2.2.4

Protek COM Port Open RTS Low  
VirtualCOM

가  
가



### 3. Serial/IP Server

#### 3.1 RawTCP

##### 3.1.1

LS, NEMO, PS, SS, STS

Device Server

##### 3.1.2 Device Server

Client (Destination IP, Port -LS/PS ),

Remote Host (SS/STS )

Remote host configuration

Check	Host #	Primary remote host IP	Port #	Secondary remote host IP	Port #
<input type="checkbox"/>	1	192.168.18.10	7001	--	--

Action on remote host :  Add  Edit  Remove

Primary host address :

Primary host port :

Secondary host address :

Secondary host port :

##### 3.1.3 Serial/IP

Serial/IP Control Panel 4.3.2

COM4  
COM5

Select Ports...  
Port Monitor...  
Licensing...  
Advanced...

Configuration of COM4

Connect to server: IP Address: 192.168.18.50 Port Number: 7001

Accept Connections: 7001

Configuration Wizard...

User Credentials

Use Credentials From:

Connection Protocol

Telnet

Telnet with CR-Padding

Raw TCP Connection

COM Port Options

DSR Emulation:

DCD Emulation:

CTS Emulation:

QTR is modem escape

Restore Failed Connections

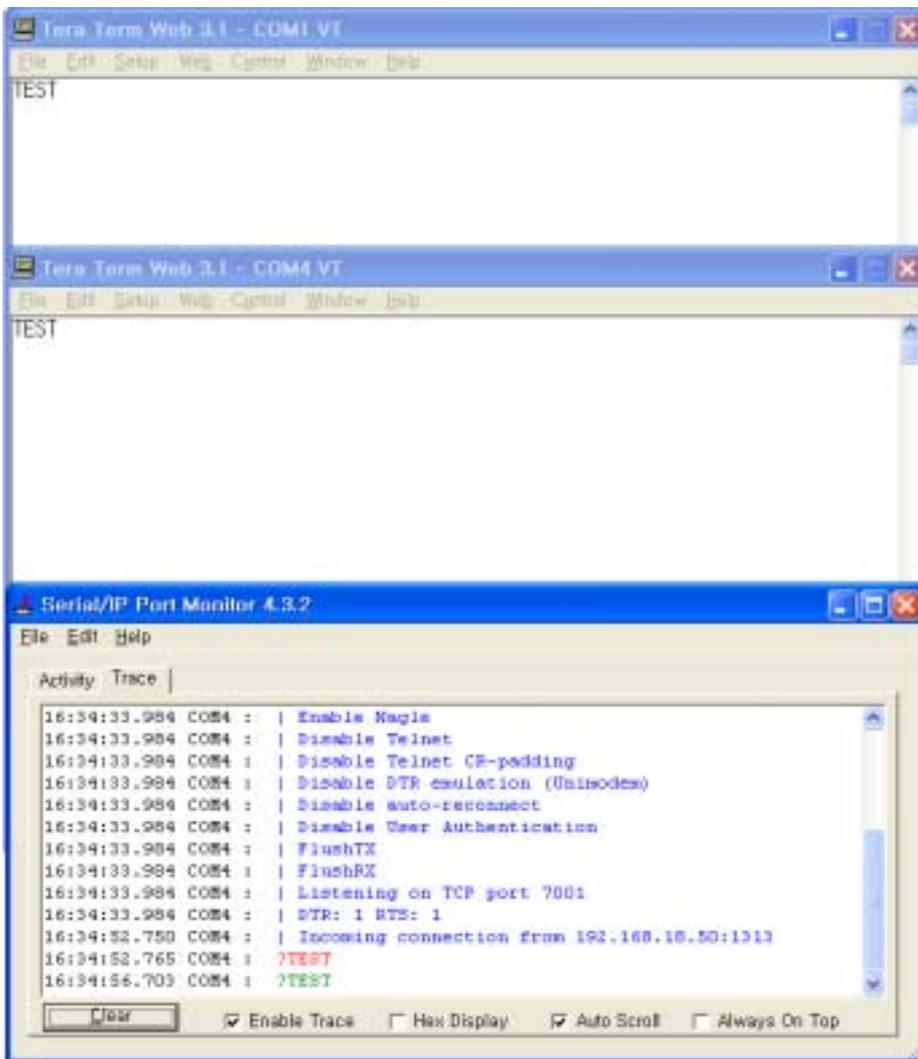
Security

Use SSL/TLS Encryption with: SSL v3 only

- Accept connection : Listen TCP Port
- Connection Protocol : RawTCP

### 3.1.4

- Virtual COM Port Serial/IP Listen Port
- Serial/IP Server Device Server  
Device Server IP ( IP)



**NOTE:**

RawTCP .( SS STS RFC2217 Client .)

## 4. SSL

Device Server

Serial/IP

SSL/TLS

### 4.1

### SSL

#### 4.1.1

PSx10, SS, STS

Device Server

#### 4.1.2

#### Device Server

Cryptography configuration

Encryption method : SSLv3

Enable/Disable cipher suites :

- SSL\_DHE\_DSS\_WITH\_RC4\_128\_SHA
- SSL\_DHE\_DSS\_EXPORT1024\_WITH\_RC4\_56\_SHA
- SSL\_RSA\_EXPORT1024\_WITH\_RC4\_56\_SHA
- SSL\_DHE\_DSS\_EXPORT1024\_WITH\_DES\_CBC\_SHA
- SSL\_RSA\_EXPORT1024\_WITH\_RC4\_56\_MD5
- SSL\_DHE\_RSA\_WITH\_3DES\_CBC\_SHA
- SSL\_DHE\_RSA\_WITH\_DES\_CBC\_SHA
- SSL\_DHE\_RSA\_EXPORT\_WITH\_DES40\_CBC\_SHA
- SSL\_DHE\_DSS\_WITH\_3DES\_CBC\_SHA
- SSL\_DHE\_DSS\_WITH\_DES\_CBC\_SHA
- SSL\_DHE\_DSS\_EXPORT\_WITH\_DES40\_CBC\_SHA
- SSL\_RSA\_WITH\_3DES\_CBC\_SHA
- SSL\_RSA\_WITH\_DES\_CBC\_SHA
- SSL\_RSA\_EXPORT\_WITH\_DES40\_CBC\_SHA
- SSL\_RSA\_WITH\_IDEA\_CBC\_SHA
- SSL\_RSA\_EXPORT\_WITH\_RC2\_CBC\_40\_MD5
- SSL\_RSA\_WITH\_RC4\_SHA
- SSL\_RSA\_WITH\_RC4\_MD5
- SSL\_RSA\_EXPORT\_WITH\_RC4\_40\_MD5
- SSL\_DH\_anon\_WITH\_3DES\_CBC\_SHA
- SSL\_DH\_anon\_WITH\_DES\_CBC\_SHA
- SSL\_DH\_anon\_EXPORT\_WITH\_DES\_CBC\_SHA
- SSL\_DH\_anon\_WITH\_RC4\_128\_MD5
- SSL\_DH\_anon\_EXPORT\_WITH\_RC4\_40\_MD5
- SSL\_RSA\_WITH\_NULL\_SHA
- SSL\_RSA\_WITH\_NULL\_MD5

Verify client (server mode only) : NO

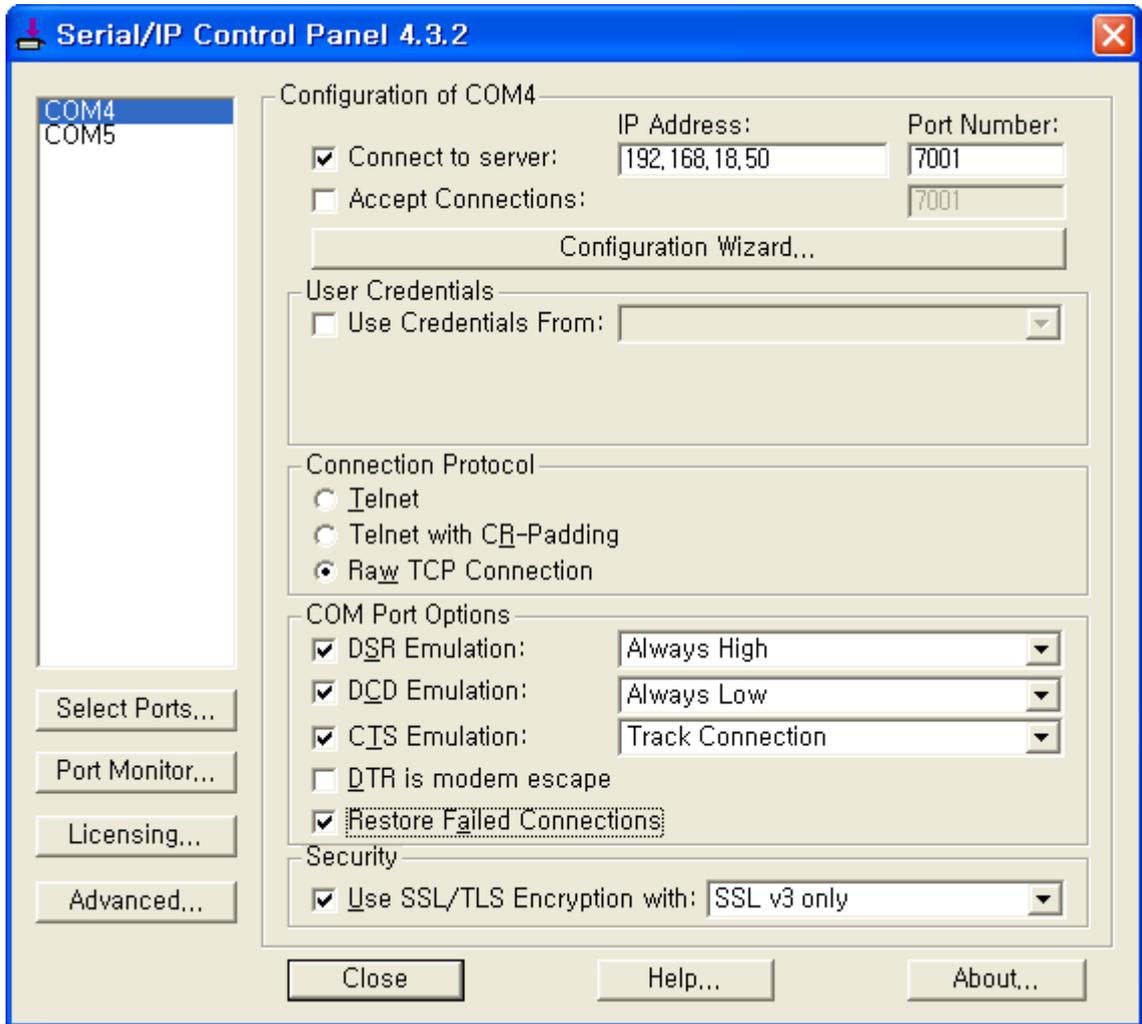
Verify certificate chain depth : 3

Check the certificate CN : NO

Save to flash Save & apply Cancel

- SS,STS SSLv2, SSLv3, SSLv3 rollback to v2, TLSv1, 3DES, RC4 Encryption method
- Encryption method SSLv3 rollback to v2, SSLv3, TLSv1

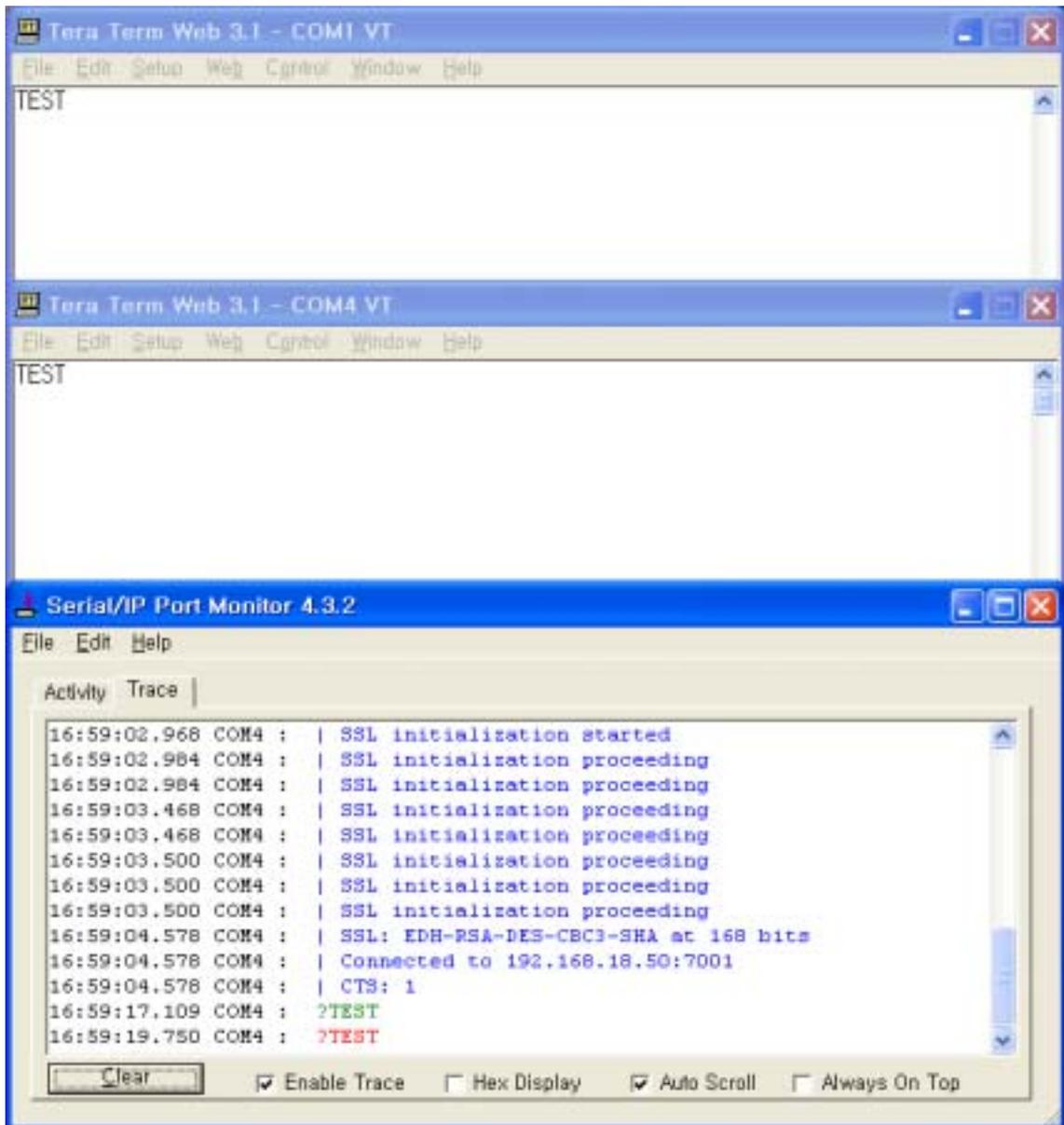
### 4.1.3 Serial/IP



- Server Client .
- Use SSL/TLS Encryption with Enable .
- Encryption method SSLv3 or TLSv1 ,SSL v3 only TLS v1
- Device Server Encryption method

### 4.1.4

- 가 Virtual COM Port Open Serial/IP Device Server
- TCP SSL .
- Serial/IP Device Server



NOTE:

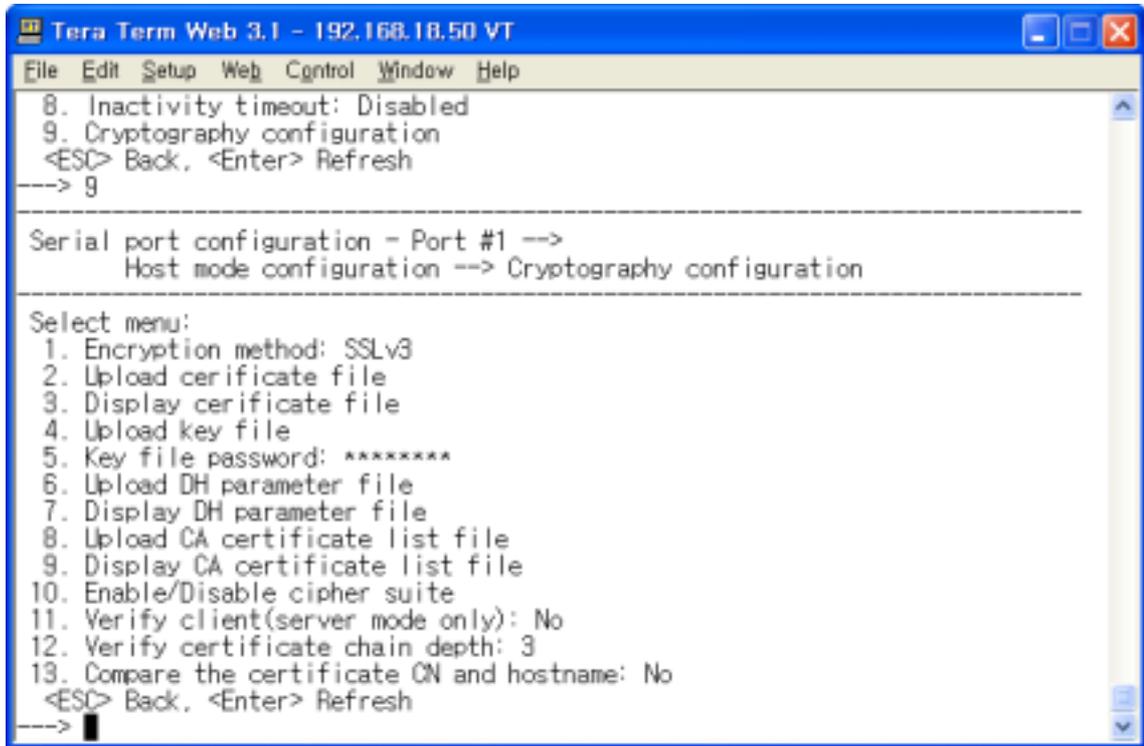
Device Server	Encryption Method	Serial/IP
Device Server	Serial/IP	
SSLv3 Rollback to v2	SSL v3 or TLS v1 SSL v3 Only TLS v1 Only	Serial/IP method
SSLv3	SSL v3 Only	
TLSv1	TLS v1 Only	

## 4.2 Serial/IP

### 4.2.1

PSx10, SS, STS Device Server

### 4.2.2 Device Server



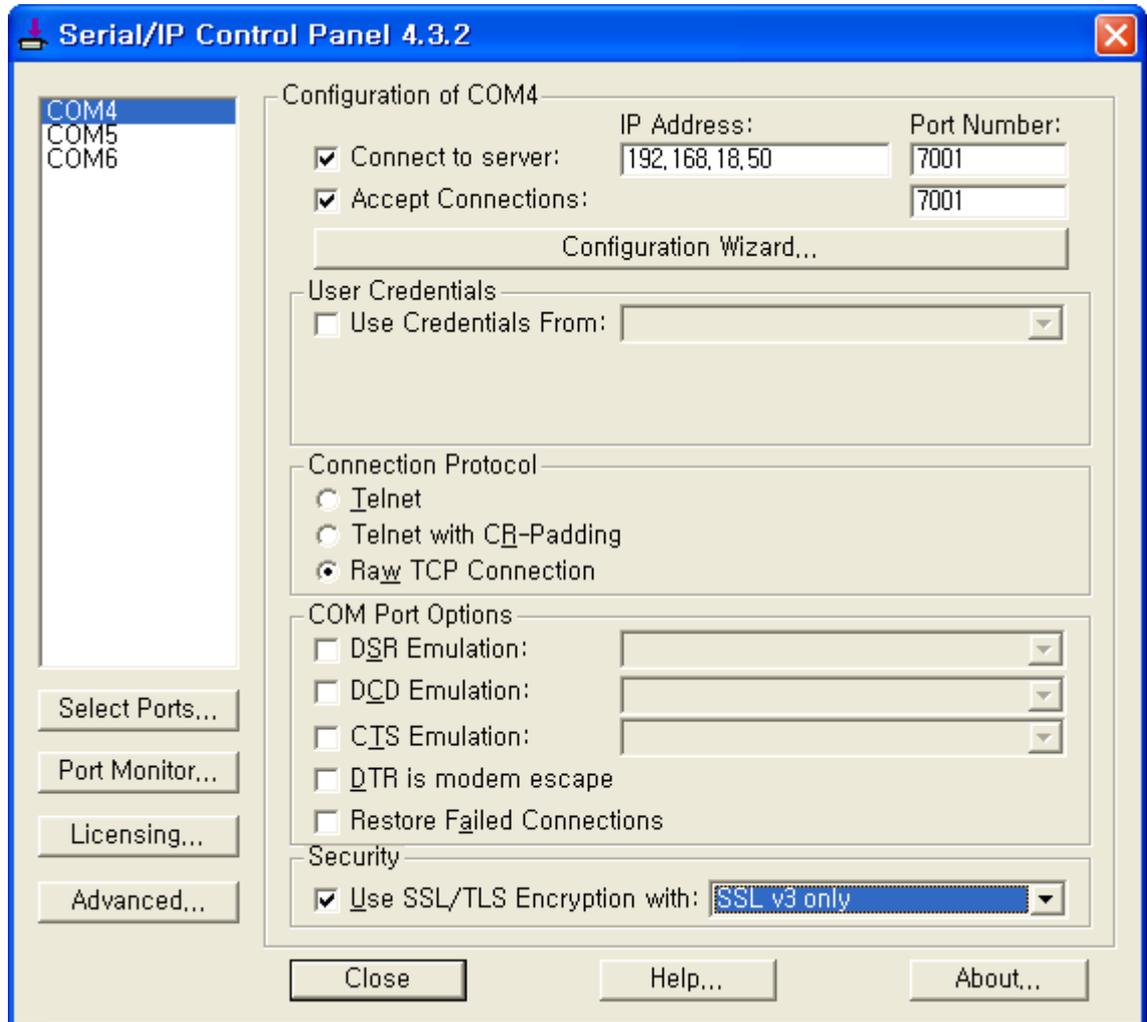
```
Tera Term Web 3.1 - 192.168.18.50 VT
File Edit Setup Web Control Window Help
8. Inactivity timeout: Disabled
9. Cryptography configuration
<ESC> Back, <Enter> Refresh
--> 9

-----
Serial port configuration - Port #1 -->
Host mode configuration --> Cryptography configuration
-----

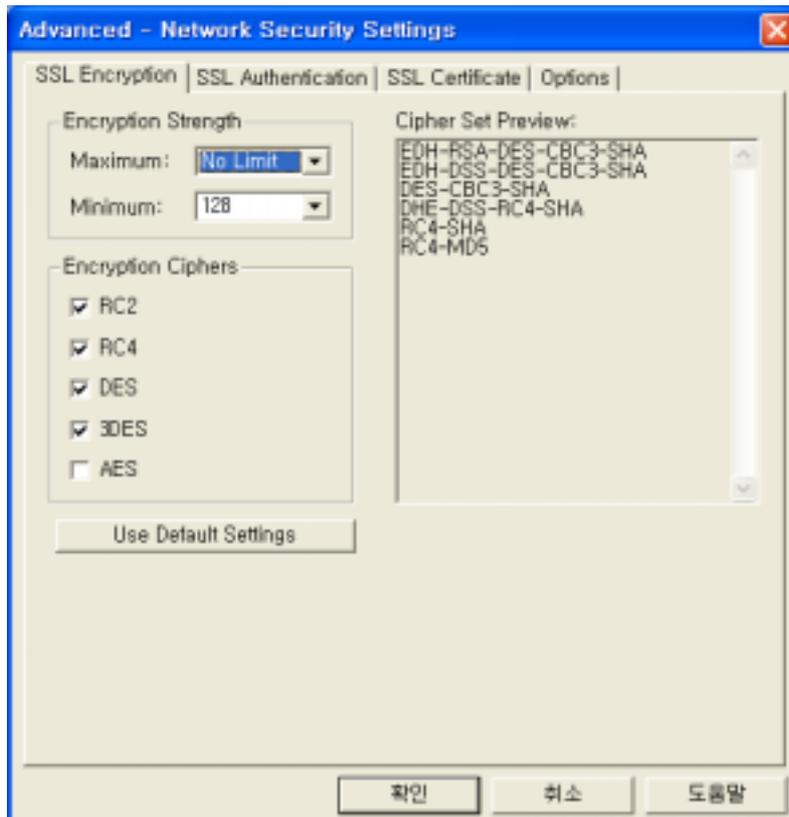
Select menu:
1. Encryption method: SSLv3
2. Upload certificate file
3. Display certificate file
4. Upload key file
5. Key file password: *****
6. Upload DH parameter file
7. Display DH parameter file
8. Upload CA certificate list file
9. Display CA certificate list file
10. Enable/Disable cipher suite
11. Verify client(server mode only): No
12. Verify certificate chain depth: 3
13. Compare the certificate CN and hostname: No
<ESC> Back, <Enter> Refresh
--> █
```

- Encryption method : SSL v3, SSLv3 rollback to V2, TLS v1
- 2. Upload certificate file: Serial/IP Samplecert.pem
- 4. Upload key file: Serial/IP Samplecert.pem
- 5. Key file password: password
- 8. Upload CA certificate list file: Serial/IP Sampleca.pem
  
- 10. Enable/Disable cipher suite:
- Server Client Host Mode .

### 4.2.3 Serial/IP



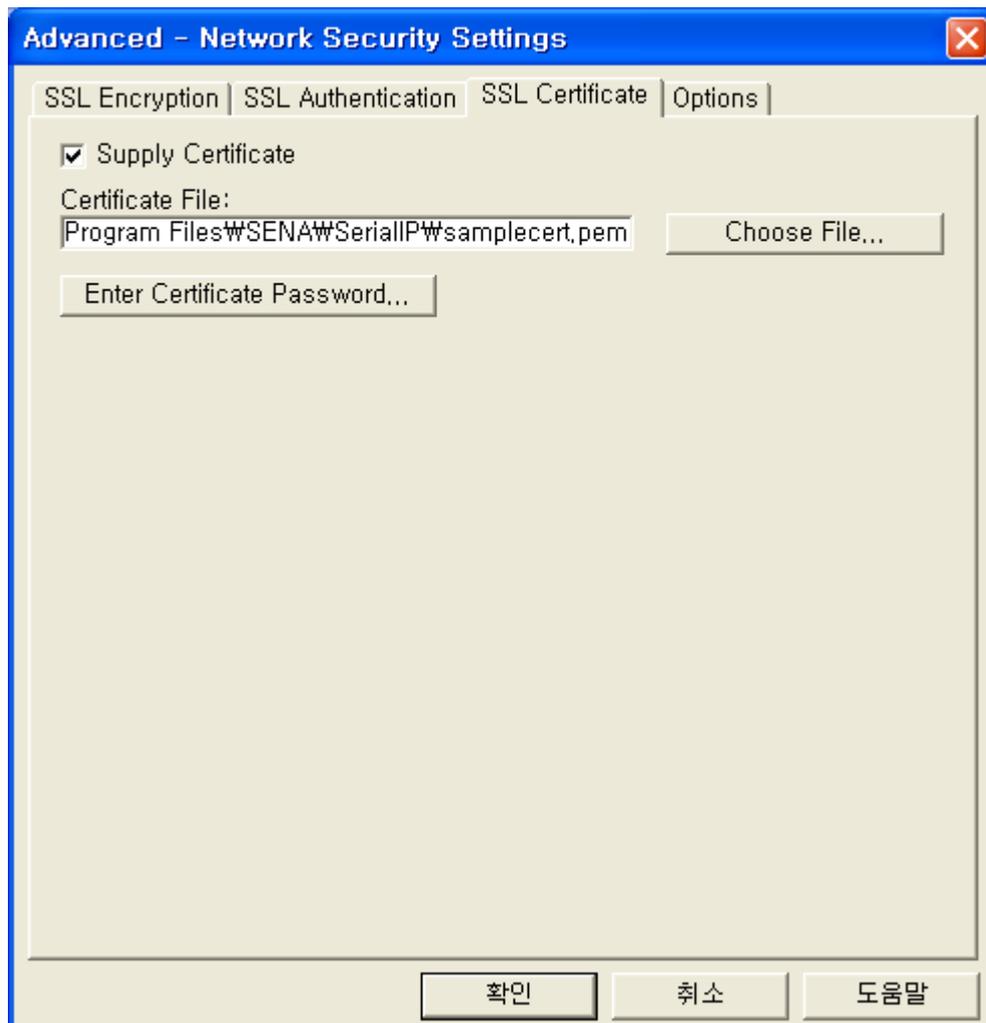
- Security .(SSL V3 or TLS V1, SSL v3 Only, TLS v1 Only)
- Encryption Cipher .-
- [Advanced...] .



- CA File .(sampleca.pem )



- Certificate file .(samplecert.pem )

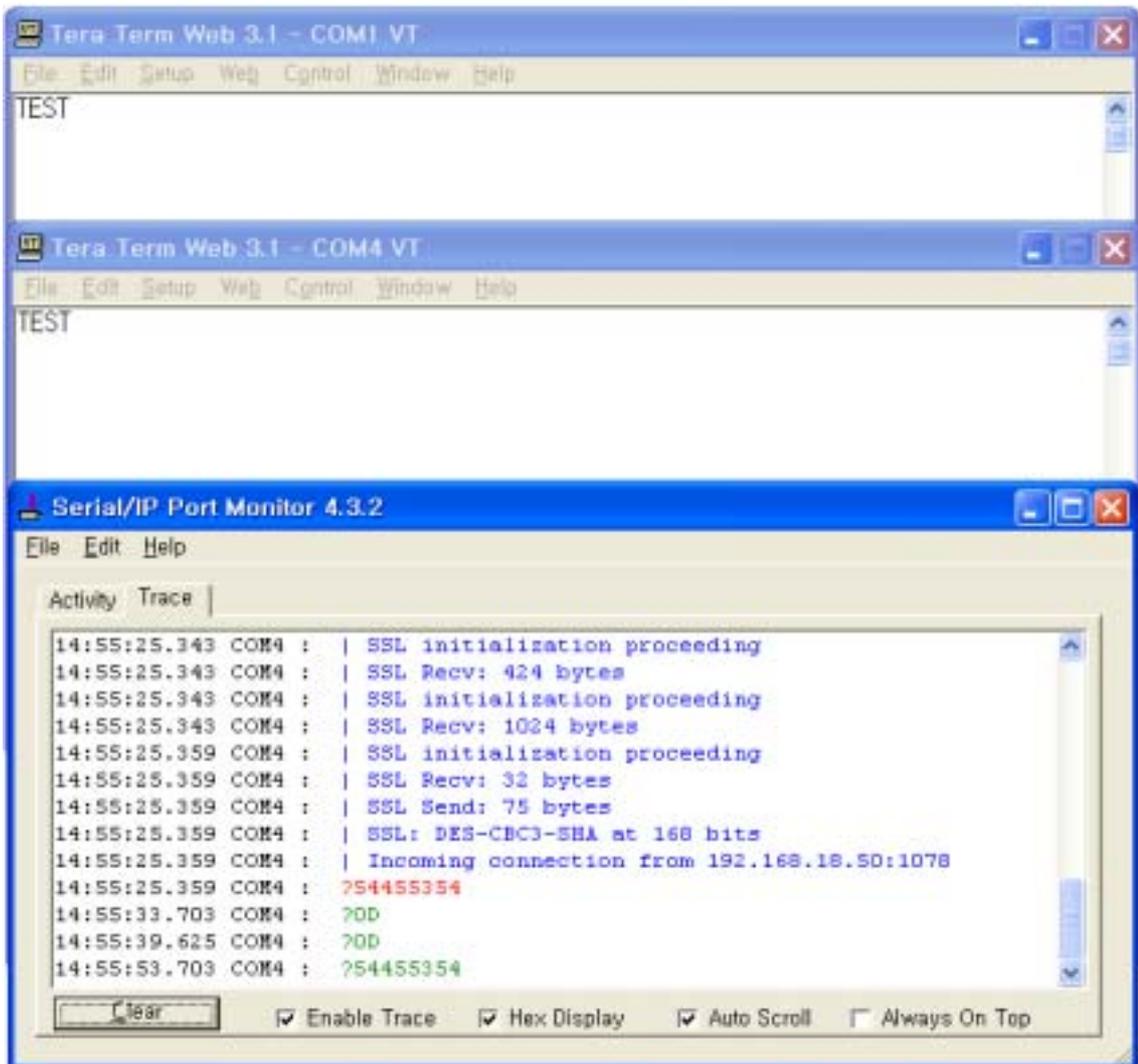


- Password                    .(password                    )



#### 4.2.4

- Virtual COM Port COM4
- Device Server COM1
- Device Server Serial/IP Listen Port
- SSL SS Serial/IP



## 5.

- Serial/IP Device Server Client Server  
가 TCP TCP  
Client가
- Client Server
- Port Monitor
- Serial/IP Device Server  
가
- : Ethernet
- (VirtualCOM 가 )
-