



ezConfig Program Library for Visual Basic

2009-10-08

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1 Introduction

WARNING:

- All "reserved" or "not used" members of structure are NOT allowed use.
Please don't use "reserved" or "not used" members.
- Please check ezTCP's MAC Address or IP Address before using "write" function.
If you write wrong information to ezTCP, then it may does not work correctly.
- We DO NOT guarantee any damage occurred by illegal use of this library.



2 Data Structures

2.1 spe_env

2.1.1 Overview

Basic data structure for ezConfig Program Library Functions.

```
Private Type spe_env
    config(0 To 3) As Byte // Reserved. Never modify.
    eth_addr(0 To 5) As Byte // Reserved. Never modify.
    secure(0 To 17) As Byte // Reserved. Never modify.
    level As Long // Reserved. Never modify.
    eap_lock As Long // Reserved. Never modify.
    en_xonoff As Long // Reserved. Never modify.
    ezl50 As Long // Reserved. Never modify.
    dhcp_lock As Long // Reserved. Never modify.
    pppoe_lock As Long // Reserved. Never modify.
    to_lock As Long // Reserved. Never modify.
    lp_lock As Long // Reserved. Never modify.
    rp_lock As Long // Reserved. Never modify.
    wm_lock As Long // Reserved. Never modify.
    rip_lock As Long // Reserved. Never modify.
    en_databit As Long // Reserved. Never modify.
    en_parity As Long // Reserved. Never modify.
    major As Long // Reserved. Never modify.
    minor As Long // Reserved. Never modify.
    dhcp As Long
    bootp As Long // NOT USED. Never modify.
    arp As Long
    ssl As Long // Reserved. Never modify.
    ezcfg As Long
    nat As Long // Reserved. Never modify.
    pppoe As Long
    stat As Long // Reserved. Never modify.
    arp_probe As Long // NOT USED. Never modify.
    max_mux As Long // Reserved. Never modify.
    eapol As Long // Reserved. Never modify.
    t2s_peer As Long // Reserved. Never modify.
    pwr_down As Long
    en_rcfg As Long // READ ONLY. Never modify.
    rcfg As Long
    comment As Long // READ ONLY. Never modify.
    pad2a As Long // NOT USED. Never modify.
    mac_id As Long
    pad2b As Long // NOT USED. Never modify.
    sio_no_idle As Long
    sio_rx_drop As Long
    pad2c As Long // NOT USED. Never modify.
    local_ip As Long
    net_mask As Long
    gate_ip As Long
    poe_uid3(0 To 15) As Byte // NOT USED. Never modify.
    poe_uid2(0 To 7) As Byte // NOT USED. Never modify.
```

```

passwd(0 To 11)  As Byte
parity           As Long
databit          As Long
rtscts           As Long
xonoff           As Long
telnet           As Long
http             As Long // NOT USED. Never modify.
fcs              As Long // NOT USED. Never modify.
seq_ack          As Long // NOT USED. Never modify.
hdlc_emu         As Long // NOT USED. Never modify.
logo            As Long // NOT USED. Never modify.
oem              As Long // NOT USED. Never modify.
wlancfg          As Long // REAT ONLY. Never modify.
stype            As Long
stopbit          As Long
t2smc            As Long
parity2          As Long
tx_delay         As Long
pad3b            As Long // NOT USED. Never modify.
sio_baud         As Long
timeout          As Long
mux_type         As Byte
mux_pad          As Byte // NOT USED. Never modify.
water_mark       As Long
pad4             As Integer // NOT USED. Never modify.
remote_ip        As Long
remote_port      As Long
local_port       As Long
poe_uid(0 To 7)  As Byte
poe_pwd(0 To 7)  As Byte
id               As Long // Reserved. Never modify.
End Type

```

2.1.2 Parameters

- eth_addr
[out] Ethernet address.
RESERVED. NOT allowed write (READ-ONLY). We DO NOT guarantee any damage occurred by using illegal directions and also we DO NOT support any individual use.
eg. The MAC address 00:30:f9:12:34:56 is stored in eth_addr array like this.
eth_adr(0) = &H00, eth_adr(1) = &H30, eth_adr(2) = &Hf9,
eth_adr(3) = &H12, eth_adr(4) = &H34, eth_adr(5) = &H56
- major
[out] Major version number.
RESERVED. NOT allowed write (READ-ONLY). We DO NOT guarantee any damage occurred by using illegal directions and also we DO NOT support any individual use.
- minor
[out] Minor version number.
RESERVED. NOT allowed write (READ-ONLY). We DO NOT guarantee any

damage occurred by using illegal directions and also we DO NOT support any individual use.

- **dhcp**
[in/out] If this value is non zero, dhcp protocol is enabled.
- **arp**
[in/out] If this value is non zero, arp protocol is enabled.
- **ezcfg**
[in/out] If this value is non zero, ezCFG probe is enabled.
When this flag is not set, you can probe only in ISP mode.
- **pppoe**
[in/out] If this value is non zero, pppoe protocol is enabled.
- **pwr_down**
[in/out] If this value is non zero, power down mode is enabled.
- This parameter is for Wireless LAN product only.
- **en_rcfg**
[out] If this value is non zero, this product supports remote configuration.
*Please see ezConfig program's manual for more information about remote configuration.
- **rcfg**
[in/out] If this value is non zero, remote configuration is enabled.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

- **comment**
[out] If this value is non zero, this product supports comment function.
This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

- **mac_id**
[out] Send MAC Address
If this value is non zero, a ezTCP sends its MAC address to the remote host right after the connection is established.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L (Firmware v1.2c or higher) |
| Wireless LAN | |

- **sio_no_idle**
[out] Disable TCP Transmission Delay
If this value is non zero, a ezTCP sends data from serial port to the network immediately. Because of this, it may cause inefficiency with each TCP header when the data comes frequently.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L (Firmware v1.2c or higher) |
| Wireless LAN | |

- **sio_rx_drop**
[out] Drop SIO RX Data
If this value is non zero, a ezTCP drops the data which are received from SIO before TCP/IP connection is established. This flag is only considered when a ezTCP running as a TCP client.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L (Firmware v1.2c or higher) |
| Wireless LAN | |

- **local_ip**
[in/out] Local IP address.
- **net_mask**
[in/out] Subnet mask.
- **gate_ip;**
[in/out] Gateway IP address
- **password**
[in/out] If you set a password to a ezTCP then "*password*" parameter need for "write"

function.

- parity
[in/out] Serial parity bit.

| Parity | Description |
|--------|-----------------------|
| 0 | None |
| 1 | Even |
| 2 | Odd |
| 3 | Use parity2 parametr. |

The value 3 is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|-------------------|
| Wired LAN | EZL-220, EZL-200F |
| Wireless LAN | EZL-300S |

- databit
[in/out] Serial data bit.
- rtscts
[in/out] If this value non zero, flow control is enabled.
- xonoff
[in/out] If this value non zero, xonxoff is enabled.
- telnet
[in/out] If this value non zero, telnet connection is enabled for device setting.
This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-100, EZL-110, EZL-200A, EZL-220, EZL-200F |
| Wireless LAN | EZL-300S |

- wlancfg
[out] If this value non zero, this product is wireless LAN product.
- stype
[in/out] Serial port type.

| Stype | Description |
|-------|-------------|
| 0 | RS-232 |
| 1 | RS-422 |
| 2 | RS-485 |

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|-------------------|
| Wired LAN | EZL-220, EZL-200F |
| Wireless LAN | EZL-300S |

- stopbit
[in/out] Stop bit.

| Stop Bit | Description |
|----------|-------------|
| 0 | 1 Stop Bit |
| 1 | 2 Stop Bit |

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|-------------------|
| Wired LAN | EZL-220, EZL-200F |
| Wireless LAN | EZL-300S |

- t2mc
[in/out] If telnet flag is non zero and this flag is non zero then telnet multi connection is enabled for device setting.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--------------|
| Wired LAN | EZL-200F |
| Wireless LAN | EZL-300S |

- parity2



[in/out] Serial Parity Bit

| Parity | Description |
|--------|-------------|
| 0 | Mark |
| 1 | Space |

This parameter is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|-------------------|
| Wired LAN | EZL-220, EZL-200F |
| Wireless LAN | EZL-300S |

- tx_delay
[in/out] UART Slow Transmission
Please refer to EZL-50L user's manual for more information.

This flag is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-200L, EZL-50M, EZL-70 (Firmware v1.1k or higher) |
| Wireless LAN | |

- sio_baud
[in/out] Serial baud rate.
- timeout
[in/out] Time out value.
In T2S, COD and ATC mode, after time-out value seconds without communication, ezTCP will disconnect the connection automatically. If this value is zero, ezTCP will not disconnect automatically. In the other mode, this value can be set for customization.
- mux_type
[in/out] Mode setting value.

| mux_type | Mode | Product Name |
|----------|------|---|
| 0 | T2S | Server mode. ezTCP will wait for connection. |
| 1 | ATC | AT command mode. ezTCP can sever or client mode by using AT commands. |

| | | |
|---|-----|---|
| 2 | COD | Client mode. ezTCP will connect to specified peer IP address and peer port, when amount of water mark data on serial port is arrived. |
| 3 | U2S | UDP mode. ezTCP will use UDP. |

In case of EZL-50L, EZL-50M, EZL-200, EZL-200L, EZL-220, EZL-200F, EZL-300S, EZL-300L, EZL-80, EZL-80c and EZL-90 assigning this value is allowed. However EZL-50 and EZL-60 are set this value by using a HOTFLASH.

- **water_mark**
[in/out] Amount of data that can allow to start connection.
This value is only considered in COD or U2S mode.
- **remote_ip;**
[in/out] Target IP address.
This value is only considered in COD or U2S mode.
- **remote_port**
[in/out] Target port number.
This value is only considered in COD or U2S mode.
- **local_port**
[in/out] Local IP address.
This value is only considered in T2S mode.
- **poe_uid**
[in/out] PPPoE log-in ID.
- **poe_pwd**
[in/out] PPPoE log-in password.

2.1.3 Remarks

- Not mentioned value is reserved. DO NOT modify the type, name and order of not mentioned parameters.
- All parameters are stored by using Little Endian(Host Byte Order) except below **parameters. The local_ip, net_mask, gate_ip and remote_ip are stored by using Big Endian(Network Byte Order).** You should use Big Endian to set above parameters up.

2.2 wlan_env

2.2.1 Overview

wlan_env structure is for wireless LAN products.

| LAN type | Product Name |
|----------|--------------|
|----------|--------------|



Wireless LAN

EZL-80 / 80c / 90 / 300W Lite / 300L

Basic data structure for ezConfig Program Library Functions.

```

Private Type wlan_env
    cctype           As Long
    channel          As Long
    wep              As Long
    wep_id           As Long
    cfg_ahc          As Long
    cfg_ifs          As Long
    auth             As Long
    pad1             As Long // NOT USED. Never modify.
    pad2             As Long // NOT USED. Never modify.
    pad3(0 To 11)    As Byte // NOT USED. Never modify.
    target_ssid(0 To 31) As Byte
    new_ssid(0 To 31)  As Byte
    key64(0 To 5, 0 To 3) As Byte
    key128(0 To 13, 0 To 3) As Byte
End Type

```

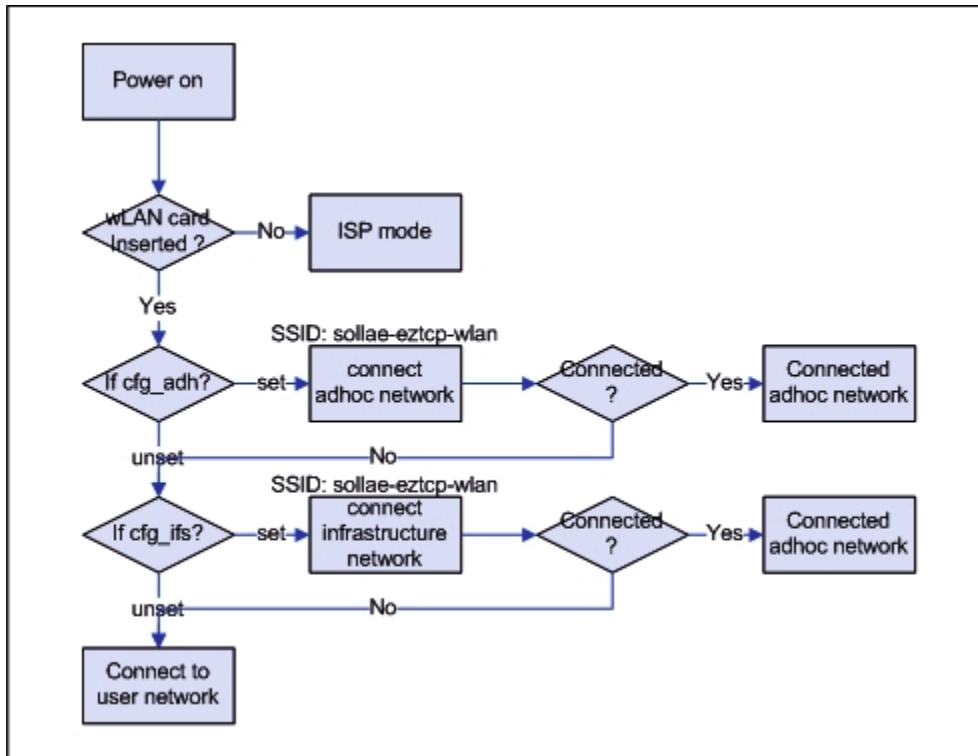
2.2.2 Parameters

- cctype
[in/out] Connection Control Type (0 - adhoc, 1 - infrastructure)
- channel
[in/out] Wireless LAN channel
- wep
[in/out] WEP(Wired Equivalent Privacy) setting (0-no WEP, 1 - 64bit, 2 - 128 bit)
- wep_id
[in/out] WEP index number (0, 1, 2, 3)
- cfg_ahc
[in/out] if this flag is set, ezTCP connects to default adhoc network during several seconds after booting. See below figure.
- cfg_ifs
[in/out] if this flag is set, ezTCP connects to default infrastructure network during several seconds after booting. See below figure.
- auth
[in/out] Authentication mode for infrastructure network. (0 - Open system, 1 - Shared key)
- target_ssid
[in/out] SSID for infrastructure network
- new_ssid



[in/out] SSID for adhoc network

- key64
[in/out] 4-sets of 64 bits key value
- key128
[in/out] 4-sets of 128 bits key value



2.3 etc_opt

2.3.1 Overview

etc_opt structure is for ezTCP products, which are supports etcetera options.

This structure is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

```
Private Type etc_opt
    comment(0 To 31) As Byte
End Type
```

2.3.2 Parameters

- comment
[in/out] When use multiple ezTCP, the comments option help you distinguish ezTCP.

2.4 stat_env

2.4.1 Overview

Basic data structure for ezConfig Program Library Functions.

```
Private Type stat_env
    ver                As String * 8
    freq              As String * 6
    boot_ver(0 To 7) As Byte
    mac_addr(0 To 5) As Byte
    ip_addr(0 To 3)  As Byte
    sub_mask(0 To 3) As Byte
    gate_addr(0 To 3) As Byte
    uptime_day       As Long
    uptime_hour      As Long
    uptime_minute    As Long
    uptime_second    As Long
    sio_rx           As Long
    sio_tx           As Long
    eth_rx          As Long
    eth_tx          As Long
    eth_crc         As Long
    eth_align       As Long
    eth_lost        As Long
    text            As String * 256
End Type
```

2.4.2 Parameters

- ver[8]
[out] Major version.
- freq[6]
[out] Frequency of ezTCP.
- boot_ver[8]
[out] Boot version. Only available in EZL-50 and EZL-60.
- mac_addr[6]



[out] MAC address.

- ip_addr[4]
[out] Local IP address.
- sub_mask[4]
[out] Subnet mask.
- gate_addr[4]
[out] Gateway IP address.
- uptime_day
[out] ezTCP's alive days since the last boot up of ezCFG.
WriteEzTCP or RemoteWriteEzTCP function will make EzTCP reboot.
- uptime_hour
[out] ezTCP's alive hours since the last boot up of ezCFG.
WriteEzTCP or RemoteWriteEzTCP function will make EzTCP reboot.
- uptime_minute
[out] ezTCP's alive minutes since the last boot up of ezCFG.
WriteEzTCP or RemoteWriteEzTCP function will make EzTCP reboot.
- uptime_second
[out] ezTCP's alive seconds since the last boot up of ezCFG.
WriteEzTCP or RemoteWriteEzTCP function will make EzTCP reboot.
- sio_rx
[out] Received bytes from serial connection.
- sio_tx
[out] Transmitted bytes to serial connection.
- eth_rx
[out] Received packets from ethernet connection.
- eth_tx
[out] Transmitted packets to ethernet connection.
- eth_crc
[out] The number of CRC error occurred packets.
- eth_align
[out] The number of align error occurred packets.
- eth_lost
[out] The number of lost packets.
- text[256]
[out] Reserved.

2.4.3 Remarks

- All members of this structure are NOT allowed write (READ-ONLY).
We DO NOT **guarantee any damage occurred by using illegal directions.**
We DO NOT **support any individual use.**



3 Functions

3.1 ProbeEzTCP

3.1.1 Overview

The ProbeEzTCP function can find ezTCP in local network. Each ezTCP can discriminate by MAC address.

3.1.2 Prototype

```
Private Declare Function ProbeEzTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv As spe_env,
    ByRef pseudo_eztcpwenv As wlan_env,
    ByRef pseudo_eztcptopt As etc_opt,
    ByRef nResultCount As Long,
    ByRef nErrNum As Long
) As Long
```

3.1.3 Parameters

- pseudo_eztcpenv
[out] Pointer to spe_env structure which ezTCP environment values will be stored in.
- pseudo_eztcpwenv
[out] Pointer to wlan_env structure which ezTCP wireless environment values will be stored in
- pseudo_eztcptopt
[out] Pointer to etc_opt structure which ezTCP etcetera option values will be stored in.
- nResultCount
[out] Pointer to integer which the number of founded ezTCP will be stored in.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.1.4 Return Value

- If no error occurred, ProbeEzTCP returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *eErrNum*.

3.1.5 Remarks

- Before using this function, you have to reserve enough space for *eztcpenv*, *eztcpwenv*, *eztcptopt* structure.



```

eg. Private env_base(256)      As spe_env
     Private wenv_base(256)    As wlan_env
     Private etc_base(256)     As etc_opt

```

- Above example shows that env_base, wenv_base and etc_base can store 256 ezTCP environment. It means the maximum count of probe result is 256.
- This function take at least 2 seconds to complete running and may take longer if **the local network has a lot of ezTCP.**

3.2 ProbeEzTCP

3.2.1 Overview

The ProbeEzTCP function can find ezTCP in local network. Each ezTCP can discriminate by MAC address.

3.2.2 Prototype

```

Private Declare Function ReadEzTCP Lib "eztcpdll" (
    ByRef mac_addr As Byte,
    ByRef pseudo_eztcpenv As spe_env,
    ByRef pseudo_eztcpwenv As wlan_env,
    ByRef pseudo_eztcpopt As etc_opt,
    ByRef nErrNum As Long
) As Long

```

3.2.3 Parameters

- mac_addr
[in] The ezTCP's MAC address to read environment values.
- pseudo_eztcpenv
[out] Pointer to spe_env structure which ezTCP environment values will be stored in.
- pseudo_eztcpwenv
[out] Pointer to wlan_env structure which ezTCP wireless environment values will be stored in
- pseudo_eztcpopt
[out] Pointer to etc_opt structure which ezTCP etcetera option values will be stored in.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.2.4 Return Value

- If no error occurred, *ReadEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *eErrNum*.

3.2.5 Remarks

- Before using this function, you have to reserve enough space for *eztcpenv*, *eztcpwenv*, *eztcpopt* structure.

eg. Private env_base(256) As spe_env
 Private wenv_base(256) As wlan_env
 Private etc_base(256) As etc_opt

- Above example shows that env_base, wenv_base and etc_base can store 256 ezTCP environment. It means the maximum count of probe result is 256.
- This function take at least 2 seconds to complete running and may take longer if the **local network has a lot of ezTCP**.

3.3 WriteEzTCP

3.3.1 Overview

Write environment value to ezTCP specified MAC address in *eztcpenv*.

3.3.2 Prototype

```
Private Declare Function WriteEzTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv      As spe_env,
    ByRef pseudo_eztcpwenv    As wlan_env,
    ByRef pseudo_eztcpopt     As etc_opt,
    ByRef nErrNum As Long
) As Long
```

3.3.3 Parameters

- pseudo_eztcpenv
[in] Pointer to spe_env structure containing environment value to be written.
- pseudo_eztcpwenv
[in] Pointer to wlan_env structure containing wireless environment values to be written.
- pseudo_eztcpopt
[out] Pointer to etc_opt structure containing etcetera option values to be written.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.3.4 Return Value

- If no error occurred, *WriteEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------------|---|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in <i>spe_env.passwd</i> . |
| EZTCP_ERR_RES | When error occurred during write operation, EZTCP_ERR_RES is stored into <i>nErrNum</i> . |

3.3.5 Remarks

- Before using this function, you have to call *ProbeEzTCP* function for reliable data transmitting.
- This function takes at least 3 seconds to complete running.

3.4 StatusEzTCP

3.4.1 Overview

Read status value from ezTCP specified MAC address in *eztcpenv*.

3.4.2 Prototype

```
Private Declare Function StatusEzTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv As spe_env,
    ByRef pseudo_stat_env As stat_env,
    ByRef nErrNum As Long
) As Long
```

3.4.3 Parameters

- *pseudo_eztcpenv*
[in] Pointer to *spe_env* structure which has target MAC address.
- *pseudo_eztcpstat*
[out] Pointer to *stat_env* structure which stores ezTCP status information.
- *nErrNum*
[out] Pointer to integer which the error number, when error is occurred.

3.4.4 Return Value

- If no error occurred, *StatusEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *eErrNum*.

3.4.5 Remarks

- Before using this function, you have to call *ProbeEzTCP* function for reliable data transmitting.
- This function takes at least 2 seconds to complete running.

3.5 ChangePwdEzTCP

3.5.1 Overview

Change or erase password of ezTCP specified MAC address in *eztcpenv*.

3.5.2 Prototype

```
Private Declare Function ChangePwdEzTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv As spe_env,
    ByRef ChangePwd As Byte,
    ByRef nErrNum As Long
) As Long
```

3.5.3 Parameters

- pseudo_eztcpenv
[in] Pointer to spe_env structure which has target MAC address.
- ChangePwd
[in] Pointer to new password string.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.5.4 Return Value

- If no error occurred, *ChangePwdEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

3.5.5 Remarks

- Before using this function, you have to call *ProbeEzTCP* function for reliable data transmitting.



- This function take at least 3 seconds to complete running and may take longer if the **local network has a lot of ezTCP**.

3.6 ResetEzTCP

3.6.1 Overview

The ResetEzTCP function can reset specific ezTCP in network.
Before using this function you have to set a password to ezTCP.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-200L, EZL-70 (Firmware v1.1k or higher) |
| Wireless LAN | |

3.6.2 Prototype

```
Private Declare Function ResetEzTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv As spe_env,
    ByRef PWD As Byte,
    ByRef nErrNum As Long
) As Long
```

3.6.3 Parameters

- **eztcpenv**
[in] Pointer to spe_env sturction which has target MAC address.
- **pwd**
[in] Pointer to password of ezTCP.
- **nErrNum**
[out] Pointer to integer which the error number, when error is occurred.

3.6.4 Return Value

- If no error occurred, *ResetEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------|-------------|
|---------|-------------|

| | |
|---------------|--|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in spe_env.passwd. |
| EZTCP_ERR_RES | When error occurred during wirte operation, EZTCP_ERR_RES is stored int nErrNum. |

3.7 CloseTCP

3.7.1 Overview

The CloseTCp function can terminate a TCP/IP connection of specific ezTCP in network. Before using this function you have to set a password to ezTCP.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-200L, EZL-70 (Firmware v1.1k or higher) |
| Wireless LAN | |

3.7.1 Prototype

```
Private Declare Function CloseTCP Lib "eztcpdll" (
    ByRef pseudo_eztcpenv As spe_env,
    ByRef PWD As Byte,
    ByRef nErrNum As Long
) As Long
```

3.7.2 Parameters

- eztcpenv
[in] Pointer to spe_env sturction which has target MAC address.
- pwd
[in] Pointer to password of ezTCP.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.7.3 Return Value

- If no error occurred, *CloseTCP* returns 1. When error is occurred, the return value



is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------------|---|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in spe_env.passwd. |
| EZTCP_ERR_RES | When error occurred during write operation, EZTCP_ERR_RES is stored into nErrNum. |

3.8 RemoteReadEzTCP

3.8.1 Overview

The RemoteReadEzTCP function can find ezTCP in local or remote network. Each ezTCP can discriminate by IP address.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

3.8.2 Prototype

```
Private Declare Function RemoteReadEzTCP Lib "eztcpdll" (
    ByVal ip                As Long,
    ByRef pseudo_eztcpenv  As spe_env,
    ByRef pseudo_eztcpenw  As wlan_env,
    ByRef pseudo_eztcptopt As etc_opt,
    ByRef nResultCount      As Long,
    ByRef nErrNum           As Long
) As Long
```

3.8.3 Parameters

- ip
[in] The ezTCP's local ip address to read environment values.
This parameter should be passed by using Little Endian. It changes to Big Endian(Network Byte Order) before use it inside of this function.
- pseudo_eztcpenv



[out] Pointer to `spe_env` structure which ezTCP environment values will be stored in.

- `pseudo_eztcpenv`
[out] Pointer to `wlan_env` structure which ezTCP wireless environment values will be stored in
- `pseudo_eztcptopt`
[out] Pointer to `etc_opt` structure which ezTCP etcetera option values will be stored in.
- `nResultCount`
[out] Pointer to integer which the number of founded ezTCP will be stored in.
- `nErrNum`
[out] Pointer to integer which the error number, when error is occurred.

3.8.4 Return Value

- If no error occurred, *RemoteReadEzTCP* returns 1. When error is occurred, the return value is `EZTCP_ERR(-1)` and the error number is stored in *eErrNum*.

3.8.5 Remarks

- Before using this function, you have to reserve enough space for *eztcpenv*, *eztcpenv*, *eztcptopt* structure.
eg. Private `env_base(256)` As `spe_env`
 Private `wenv_base(256)` As `wlan_env`
 Private `etc_base(256)` As `etc_opt`
- Above example shows that `env_base`, `wenv_base` and `etc_base` can store 256 ezTCP environment. It means the maximum count of probe result is 256.
- This function take at least 2 seconds to complete running.

3.9 RemoteWriteEzTCP

3.9.1 Overview

Write environment value to ezTCP specified IP address.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

3.9.2 Prototype

```
Private Declare Function RemoteWriteEzTCP Lib "eztcpdll" (
    ByVal ip                As Long,
    ByRef pseudo_eztcpenv  As spe_env,
    ByRef pseudo_eztcpenv  As wlan_env,
    ByRef pseudo_eztcptopt As etc_opt,
    ByRef nErrNum           As Long
) As Long
```

3.9.3 Parameters

- ip
[in] The ezTCP's local ip address to write environment values.
This parameter should be passed by using Little Endian. It changes to Big Endian(Network Byte Order) before use it inside of this function.
- pseudo_eztcpenv
[in] Pointer to spe_env structure containing environment value to be written.
- pseudo_eztcpenv
[in] Pointer to wlan_env structure containing wireless environment values to be written.
- pseudo_eztcptopt
[out] Pointer to etc_opt structure containing etcetera option values to be written.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.9.4 Return Value

- If no error occurred, *RemoteWriteEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------------|--|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in spe_env.passwd. |
| EZTCP_ERR_RES | When error occurred during wirte operation, EZTCP_ERR_RES is stored int nErrNum. |

3.9.5 Remarks

- Before using this function, you have to call *RemoteReadEzTCP* function for reliable data transmitting.



- This function takes at least 3 seconds to complete running.

3.10 RemoteStatusEzTCP

3.10.1 Overview

Read status value from ezTCP using specified IP address. This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

3.10.2 Prototype

```
Private Declare Function RemoteStatusEzTCP Lib "eztcpdll" (
    ByVal ip                As Long,
    ByRef pseudo_eztcpenv  As spe_env,
    ByRef pseudo_stat_env  As stat_env,
    ByRef nErrNum           As Long
) As Long
```

3.10.3 Parameters

- ip
[in] The ezTCP's local ip address to write environment values.
This parameter should be passed by using Little Endian.
It changes to Big Endian(Network Byte Order) before use it inside of this function.
- pseudo_eztcpenv
[in] Pointer to spe_env structure which has target ezTCP's environment values.
- pseudo_eztcpstat
[out] Pointer to spe_env structure which ezTCP status values will be stored in.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.10.4 Return Value

- If no error occurred, *RemoteStatusEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *eErrNum*.



3.10.5 Remarks

- Before using this function, you have to call *RemoteReadEzTCP* function for reliable data transmitting.
- This function take at least 2 seconds to complete running.

3.11 RemoteChangePwdEzTCP

3.11.1 Overview

Change or erase password of ezTCP using specified IP address. This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|---|
| Wired LAN | EZL-50L, EZL-50M, EZL-70, EZL-200L, EZL-220, EZL-200F |
| Wireless LAN | EZL-300L, EZL-300S, EZL-80 / 80c / 90 / 300W Lite (Firmware v1.3i or higher) |

3.11.2 Prototype

```
Private Declare Function RemoteChangePwdEzTCP Lib "eztcpdll" (
    ByVal ip           As Long,
    ByRef pseudo_eztcpenv As spe_env,
    ByRef ChangePwd    As Byte,
    ByRef nErrNum      As Long
) As Long
```

3.11.3 Parameters

- ip
[in] The ezTCP's local ip address to change password.
This parameter should be passed by using Little Endian. It changes to Big Endian(Network Byte Order) before use it inside of this function.
- pseudo_eztcpenv
[in] Pointer to spe_env structure which has target ezTCP's environment values.
- ChangePwd
[in] Pointer to new passwords string.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.11.4 Remarks

- Before using this function, you have to call *RemoteReadEzTCP* function for reliable data transmitting.
- This function take at least 3 seconds to complete running.

3.12 RemoteResetEzTCP

3.12.1 Overview

The RemoteResetEzTCP function can reset specific ezTCP in network. Before using this function you have to set a password to ezTCP.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-200L, EZL-70 (Firmware v1.1k or higher) |
| Wireless LAN | |

3.12.2 Prototype

```
Private Declare Function RemoteResetEzTCP Lib "eztcpdll" (
    ByVal ip As Long,
    ByRef pseudo_eztcpenv As spe_env,
    ByRef PWD As Byte,
    ByRef nErrNum As Long
) As Long
```

3.12.3 Parameters

- ip
[in] The ezTCP's local ip address.
This parameter should be passed by using Little Endian. It changes to Big Endian(Network Byte Order) before use it inside of this function.
- eztcpenv
[in] Pointer to spe_env sturction which has target MAC address.
- pwd
[in] Pointer to password of ezTCP.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.



3.12.4 Return Value

- If no error occurred, *RemoteResetEzTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------------|---|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in spe_env.passwd. |
| EZTCP_ERR_RES | When error occurred during write operation, EZTCP_ERR_RES is stored into nErrNum. |

3.13 RemoteCloseTCP

3.13.1 Overview

The CloseTCP function can terminate a TCP/IP connection of specific ezTCP in network. Before using this function you have to set a password to ezTCP.

This function is currently considered in below ezTCP products.

| LAN type | Product Name |
|--------------|--|
| Wired LAN | EZL-50L, EZL-50M, EZL-200L, EZL-70 (Firmware v1.1k or higher) |
| Wireless LAN | |

3.13.2 Prototype

```
Private Declare Function RemoteCloseTCP Lib "eztcpdll" (
    ByVal ip As Long,
    ByRef pseudo_eztcpenv As spe_env,
    ByRef PWD As Byte,
    ByRef nErrNum As Long
) As Long
```

3.13.3 Parameters

- ip
[in] The ezTCP's local ip address.
This parameter should be passed by using Little Endian. It changes to Big Endian(Network Byte Order) before use it inside of this function.
- eztcpenv



[in] Pointer to spe_env sturuction which has target MAC address.

- pwd
[in] Pointer to password of ezTCP.
- nErrNum
[out] Pointer to integer which the error number, when error is occurred.

3.13.4 Return Value

- If no error occurred, *RemoteCloseTCP* returns 1. When error is occurred, the return value is EZTCP_ERR(-1) and the error number is stored in *nErrNum*.

| nErrNum | Description |
|---------------|--|
| EZTCP_ERR_PWD | If you configured a password, then you should set a password in spe_env.passwd. |
| EZTCP_ERR_RES | When error occurred during wirte operation, EZTCP_ERR_RES is stored int nErrNum. |

3.14 GetLibVerEzTCP

3.14.1 Overview

Get library version information.

3.14.2 Prototype

```
Private Declare Function GetLibVerEzTCP Lib "eztcpdll" () As Long
```

3.14.3 Parameters

3.14.4 Return Value

- If no error occurred, GetLibVerEzTCP returns pointer of string.
See example code for more information.

3.14.5 Remarks

