WizFi630 에서 AT Command 를 이용한 Security 설정 방법

Version 1.00

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Document Revision History

Date	Revision	Changes
2013-03-18	V1.00	Official Release

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1. 개요

WizFi630 에서 Security 관련 설정은 일반적으로 Web Page 에 접속하여 수정되지만
개발 환경에 따라서는 터미널에서의 AT Command 만을 이용하여 설정을 해야만 한다.
이러한 경우 본 문서의 설명과 예시를 참고하여 설정을 수행하도록 한다.
유의해야 할 점은 AP-Client 모드의 경우에는 'DU'/'GU', 'AU'/'PU'를 따로 설정해 줘야 하는데,
'DU'/'GU' 는 AP 의 Security 에 대한 설정으로 다른 모드와 설정 방법이 동일하며,
'AU'/'PU' 는 Client 로 Router 에 접속하게 되는 경우의 Security 설정이라는 것이다.

2. 'DU' / 'GU' 명령 - AP, Gateway, AP-Client 모드

A. Command 입력 및 Response 출력 형식

1. 'GU' Input Format

Authentication Method	Format
None	<GU(1)_(2)>
WEP / PSK	<GU(1)_(2)_(3)_(4)_(5)_(6)>
Radius / 802.1x	<GU(1)_(2)_(3)_(4)_(5)_(6)_(7)_(8)_(9)>

2. 'DU' Response Format

Authentication Method	Format
None	<S(1)_(2)>
WEP / PSK	<S(1)_(2)_(3)_(4)_(5)_(6)>
Radius / 802.1x	<S(1)_(2)_(3)_(4)_(5)_(6)_(7)_(8)_(9)>

3. Format Details

■ (1) Authentication Mode:

1	Open	2	802.1x	3	Shared
4	WPA-Radius	5	WPA-PSK	6	WPA2-Radius
7	WPA2-PSK	8	WEPAUTO	9	WPA1/2-Radius
a	WPA1/2-PSK				

■ (2) Encryption Mode:

0	None	1	WEP	2	TKIP
3	AES	4	TKIP_AES		

■ (3) Default Key Index:

Range	1 ~ 4

■ (4) Key Length mode:

0	None	1	WEP64	2	WEP128

■ (5) Key/Passphrase Format:

0	ASCII	1	HEX		

- (6) Default-Key/Passphrase Value
- (7) Radius Password
- (8) Radius IP
- (9) Radius Port

* (3) ~ (4): Available only at WEP mode,

* (7) ~ (9): Available only at Radius(Enterprise) mode.

B. 'DU' 응답 상세

1. 모드 별 출력

Auth	Encr	Response
Open	None	<S1_0>
Open	WEP	<S1_1_(DefKeyIdx)_(KeyLenMod)_(ASCII/HEX)_(DefKeyVal)>
Shared	WEP	<S3_1_(DefKeyIdx)_(KeyLenMod)_(ASCII/HEX)_(DefKeyVal)>
WEPAUTO	-	<S8_1_(DefKeyIdx)_(KeyLenMod)_(ASCII/HEX)_(DefKeyVal)>
802.1x	None	<S2_0_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
802.1x	WEP	<S2_1_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA-PSK	TKIP	<S5_2_(x)_(x)_(x)_(Passphrase)>
WPA-PSK	AES	<S5_3_(x)_(x)_(x)_(Passphrase)>
WPA2-PSK	TKIP	<S7_2_(x)_(x)_(x)_(Passphrase)>
WPA2-PSK	AES	<S7_3_(x)_(x)_(x)_(Passphrase)>
WPA1/2-PSK	TKIP	<Sa_2_(x)_(x)_(x)_(Passphrase)>
WPA1/2-PSK	AES	<Sa_3_(x)_(x)_(x)_(Passphrase)>
WPA-Radius	TKIP	<S4_2_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA-Radius	AES	<S4_3_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA2-Radius	TKIP	<S6_2_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA2-Radius	AES	<S6_3_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA1/2-Radius	TKIP	<S9_2_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>
WPA1/2-Radius	AES	<S9_3_(x)_(x)_(x)_(x)_(Password)_(RadiusIP)_(RadiusPort)>

* (x): Don't Care

* Notice:
  - [Open] + [None] is the 'Disabled' mode in the web page.
  - [Open] + [WEP] is the 'OPENWEP' mode in the web page.
    64/128 Key length is determined by the key user input.
  - 'WEPAUTO' means [Open/Shared]

C. 'GU' 입력 상세

1. 모드 별 입력

'DU'모드 별 출력에서 S 를 GU 로 바꾸면 된다.

2. 모드 별 입력 예시

Auth	Encr	Response
Open	None	<GU1_0>
Open	WEP	<GU1_1_1_1_0_12345> :ASCII <GU1_1_1_1_1_3132333435> :HEX <GU1_1_1_2_0_1234567890123> :ASCII <GU1_1_1_2_1_31323334353637383930313233> :HEX
Shared	WEP	[Open]+[WEP] 에서 GU1 -> GU3 만 바뀜
WEPAUTO	-	[Open]+[WEP] 에서 GU1 -> GU8 만 바뀜
802.1x	None	<GU2_0_0_0_0_0_12345_101.102.103.104_1812>
802.1x	WEP	<GU2_1_0_0_0_0_12345_101.102.103.104_1812>
WPA-PSK	TKIP	<GU5_2_0_0_0_12345678>
WPA-PSK	AES	<GU5_3_0_0_0_12345678>
WPA2-PSK	TKIP	<GU7_2_0_0_0_12345678>
WPA2-PSK	AES	<GU7_3_0_0_0_12345678>
WPA1/2-PSK	TKIP	<GUa_2_0_0_0_12345678>
WPA1/2-PSK	AES	<GUa_3_0_0_0_12345678>
WPA-Radius	TKIP	<GU4_2_0_0_0_0_12345_101.102.103.104_1812>
WPA-Radius	AES	<GU4_3_0_0_0_0_12345_101.102.103.104_1812>
WPA2-Radius	TKIP	<GU6_2_0_0_0_0_12345_101.102.103.104_1812>
WPA2-Radius	AES	<GU6_3_0_0_0_0_12345_101.102.103.104_1812>
WPA1/2-Radius	TKIP	<GU9_2_0_0_0_0_12345_101.102.103.104_1812>
WPA1/2-Radius	AES	<GU9_3_0_0_0_0_12345_101.102.103.104_1812>

* Reference:: 1812 포트는 IANA 에 등록된 Official Radius Protocol 포트이다.

3. 'AU' / 'PU' 명령 - AP-Client 모드

A. Command 입력 및 Response 출력 형식

1. 'PU' Input Format

Authentication Method	Format
None	<PU(1)_(2)_(3)>
WEP / PSK	<PU(1)_(2)_(3)_(4)_(5)>

2. 'AU' Response Format

Authentication Method	Format
None	<S(1)_(2)_(3)>
WEP / PSK	<S(1)_(2)_(3)_(4)_(5)>

3. Format Details

■ (1) Authentication Mode:

1	Open	3	Shared	5	WPA-PSK	7	WPA2-PSK

■ (2) Encryption Mode:

0	None	1	WEP	2	TKIP	3	AES

■ (3) WiFi Channel

■ (4) Default Key Index:

Range	1 ~ 4

■ (4) Default-Key/Passphrase Value:

WEP	5(10), 13(26) characters
WPA-PSK	8-63 characters

* (4): Available only at WEP mode,

B. 'AU' 응답 상세

1. 모드 별 출력

Auth	Encr	Response
Open	None	<S1_0_(Channel)>
Open	WEP	<S1_1_(Channel)_(DefKeyIdx)_(DefKeyVal)>
Shared	None	<S1_0_(Channel)> : same with [Open]+[None]
Shared	WEP	<S3_1_(Channel)_(DefKeyIdx)_(DefKeyVal)>
WPA-PSK	TKIP	<S5_2_(Channel)_(x)_(Passphrase)>
WPA-PSK	AES	<S5_3_(Channel)_(x)_(Passphrase)>
WPA2-PSK	TKIP	<S7_2_(Channel)_(x)_(Passphrase)>
WPA2-PSK	AES	<S7_3_(Channel)_(x)_(Passphrase)>

* (x): Don't Care

* ASCII/HEX 를 구분하는 변수는 없지만 HEX 로 입력된 값은 HEX 로 출력된다.

C. 'PU' 입력 상세

1. 모드 별 입력

'AU'모드 별 출력에서 S 를 PU 로 바꾸면 된다. ([Shared]+[None] 제외)

2. 모드 별 입력 예시

Auth	Encr	Response
Open	None	<PU1_0_11>
Open	WEP	<PU1_1_11_1_12345> : WEP64 <PU1_1_11_1_1234567890123> : WEP128
Shared	None	Not Available
Shared	WEP	<PU3_1_11_1_12345> : WEP64 <PU3_1_11_1_1234567890123> : WEP128
WPA-PSK	TKIP	<PU5_2_11_0_12345678>
WPA-PSK	AES	<PU5_3_11_0_12345678>
WPA2-PSK	TKIP	<PU7_2_11_0_12345678>
WPA2-PSK	AES	<PU7_3_11_0_12345678>

* HEX 값으로 입력하는 방법은 없음.