

ST-58T8G

Digital wireless bridge

User manual

SUNTOR ELECTRONICS CO., LIMITED

• Product introduction

- •ST-58T8G digital wireless bridge is long range outdoor wireless bridge, working frequency is 5GHz. With long transmission distance, can avoid unnecessary the roam among the access point. It assures the stability of wireless connection and decease the products quantity.
- •It supports friendly user interface, including friendly distance control interface. Support convenient outdoor POE power supply.
- •ST-58T8G digital wireless bridge support the newest encryption mechanism, including 64/128/152bit, WEB、WPA and WPA2. It is built-in 19dB panel antenna or external high gain antenna. It is the best wireless solution product for small and large scale projects.
- •The design transmission distance is 30KM. It support multi media signal transmission, spanning tree protocol and bandwidth controllable. It supports at most one point to 8 points, writing 8 groups different MAC addresses. With AP mode, bridge mode, client mode and repeater mode, convenient to use and stable signals, make it the first choice product in projects.

Main parameters

Standards Compliance	IEEE 802.11a; IEEE802.3; IEEE802.3u;
SDRAM	32 M Byte
Flash	8 M Byte



Radio Frequency Type	OFDM
Modulation	IEEE 802.11a: OFDM with BPSK, QPSK, 16QAM, 64QAM
Frequency Band	IEEE 802.11a:
	5.15 ~ 5.25 GHz (lower band)
	5.25 ~ 5.35 GHz (middle band)
	5.725 ~ 5.825 GHz (hi-band)
Transmission Power	IEEE 802.11a: 26dBm
Transmission Rate	IEEE 802.11a: 6/9/12/18/24/36/48/54/108 Mbps
Access Point Interfaces	Auto sensing MDI/MDI-X Ethernet 10/100Base-T x 2: RJ-45
Sensitivity	IEEE 802.11a:-94dBm @ 6Mbps; -74dBm @ 54Mbps, PER<10%
Antenna Port	N-type female / External high gain antenna or Integrated 16 dBi directional
	antenna
Security Systems	64-bit/128-bit/152-bit WEP encryption; WPA/ WPA2 (-PSK or -EAP with
	TKIP/AES encryption); 802.1x Authenticator, EAP-PEAP/EAP-TTLS support for
	client mode; Hide SSID in beacons
Wireless Setting	Operation Mode – AP/ Client Bridge/ WDS Bridge PtP and PtMP (up to 16 links)/
	Auto/Fixed Channel Selection (Setting varies by Country)
	Adjustable transmit power by 10Bm step
Software/Firmware	Site Survey
	DHCP Server / Client
	Suppressed SSID
	Station Separation
	Shanning Tree settings
	Wireless access control by MAC address filter (up to 50 fields)
	Multiple SSID with 802 1g VI AN tagging (up to 4 SSIDs)
	Web-based configuration via popular browser (MS IF Netscape)
	Windows "Locator" program to help find IP in DHCP client mode
	Firmware upgrade and configuration backup via Web or Telnet
	Reset to default by WebUI
	VPN pass-through (PPTP, L2TP, IPSEC)
	SysLog
	SNMP v1/v2c
	MIB support: MIB I, MIB II (RFC-1213) and Private MIB
	Long distance transmission: up to1~30 Km (ACK timeout)
	Support Narrow Bandwidth 5/10/20 MHz adjustable
	Support PPPoE(Client Router) mode and PPTP
	Ping function and Trace Route function
	Support QoS(WMM)
	Support Time settings
Weight	1.2Kg(without packing); 2.05Kg(packed)
Size	270*270*55mm(without packing); 313*292*85mm(packed)

Reading object

This user manual suits for the following personnel:

- ♦ Engineers and technicians
- ♦ Equipment installation personnel
- ♦ Network managing personnel





• Product appearance



• Notice:

The basic connection of equipment

To keep the power supply stable when use the equipment. If there is outage all the time, it is easy to cause the equipment recover factory default.

Network methods and types

Straight-through line: Both ends adopt 568A or 568B, with same line sequence.

Crossover line: Network ends, one end use 568A, the other use 568B.

568A: white-green, green, white-orange, blue, white-blue, orange, white-brown, brown 568B: white-orange, orange, white-green, blue, white-blue, green, white-brown, brown



The lights indicate power to the power _____ supply box connected to normal

This network port can be connected to the switches, routers, computers, digital cameras, and so on.

This network port to



P+DATE port connect with network bridge LAN port (This port can supply power to network bridge through network cable, transmit data signal at the same time.). The network cable is straight-through line made in over CommScope network line.

DATA IN port can connect with switch, PC, network camera, network video server, and other terminal equipment. The network cable is Crossover line made in over CommScope network line.



Network bridge is fixed by standard U snap and L angle iron.



• Equipment operation interface and instructions:

Equipment operation interface and common working mode

First, we should change the computer webmaster into the same network segment of wireless equipment. The equipment original IP address is:192.168.2.254, subnet mask is:255.255.255.0, gateway: 192.168.2.1, then the computer IP need to be: 192.168.2.X (X=2~253 any digital among this), equipment default user name is : Admin no password.

网络 共享	受知	
注接时使用: 愛 Realtek PCIe GBE Family Controller	如果网络支持此功能,则可以获 您需要从网络系统管理员处获得	取自动指派的 IP 设置。否则, 适当的 IP 设置。
此连接使用下列项目 (0):	○ 自动获得 IP 地址(0)	
✓ ➡ Microsoft 网络客户端 ✓ ■ 0.cs 粉掘句计划程序	IP 地址(I):	192 .168 . 2 . 3
☑ ■ Wicrosoft 网络的文件和打印机共享	子网摘码(0):	255 . 255 . 255 . 0
 ✓ ▲ Internet 协议版本 6 (TCP/IPv6) ✓ ▲ Internet 协议版本 4 (TCP/IPv4) 	默认网关 (0):	192 .168 . 2 . 1
 ✓ ▲ 链路层拓扑发现映射器 I/O 驱动程序 ✓ ▲ 链路层拓扑发现响应程序 	● 自动获得 DMS 服务器地址	ይ) በተ (፪) :
安装 (M) 卸载 (U) 属性 (R)	首选 DNS 服务器 (P):	
描述 TCP/TP。该协议是默认的广博网络协议,它提供在不同	备用 DNS 服务器(A):	
的相互连接的网络上的通讯。	□ 退出时验证设置 (L)	高级(V)

After finish the computer gateway modify, you can set up the parameter by entering the IE browser and input the equipment IP address:

Input the correct IP which is marked on the network bridge in the IE browser, then enter the equipment inner.





市戸石也	🖸 root	~
密码(E):	****	

user name is : Admin no password

After this, click the "confirm" to enter the main interface

These are relevant information of system on the main interface, including: equipment operation mode,

version information, network operating status, IP information, MAC address, etc.

stem	System Info	¢ 🗙	Device Info		¢ ×	LAN Monitor	
	Host Name	Outdoor Wireless solution				600.00	0
m Info 🛛 🗕 e Info 🚽	Operating Mode	ClientBridge+RepeaterAPMode		N1 LAN2		500.00	Vin
nfo 🕂	Location					300.00	
ry Info 🛛 🕂	Description	802.11A/N Wireless AP				200.00	0-0-0 b-0-
	Firmware Version	Cen-CPE-N5H5A V1.0.6	АР	ESSID	Status	100.00	
	Firmware		Repeater AP	Repeater AP	Off	Bps 0	
	Date	2012/10/30 16:57:47	Band: 80	2.11a/n Channel:	36	Mode	Static IP Mode
	Device Time	1970/01/01 00:04:25	Txpower:	30 dBm (1000 m	W)	MAC Address	00:C0:CA:67:69:76
	System Up	04-25				IP Address	192.168.1.15
	Time	04:25				Netmask	255.255.255.0
	Default	192,168,1,1				Gateway	192.168.1.1
	Gateway					RX(Bytes)	71.7KB
	Primary DNS					TX(Bytes)	114.8KB

Choose the changing operation mode in the default:



Operating M	1ode	
Setup Wizar	rd	
LAN Setup		
Managemer	nt	Mode
Time Serve	r	S Mode
SNMP		ntBridge+RepeaterAP Mode

Click: "operation mode", then popup the following menu:

Operating Mode

WDS Mode	
WDS Mode	
	2
ClientBridge+RepeaterAP Mode	

CopyRight © 2012. All Rights Reserved



After 30 seconds, save over.

Here according to your requirements, you can choose different operation mode:

AP mode (mainly refer to coverage, one mail equipment transmits signals all around, and the other client

equipment use Client bridge mode to communicate with it.)

WDS mode (mainly refer to wireless bridge function, make both ends data for bridge communication, like a bridge, connect the ends, so it is also called bridge mode. Main application: point-to-point, point-to

multipoint)



ClientBridge+RepeaterAP mode (add relay mode at client, client mode mainly communicate with AP mode [master transmitter], one AP mode equipment can work with multi-client mode terminal. The **RepeaterAP** is mainly used as relay. That is, with thus setting up, the equipment can do signal(which is received from main AP equipment) coverage to all around, thus, the signal coverage area is increased.)

IP option

Modify IP is to make the device more convenient to be interviewed by computer, at the meantime ,to avoid conflicts between the IP of these device with the others in LANs

Operating N Setup Wiza	1ode rd		
LAN Setup			
VLAN Setup)	Mode	
Managemer	nt	S Mod	e
Time Serve	r	ntBridg	ge+RepeaterAP Mode
SNMP			

Static IP IP Address: 192.168.2.254 IP Netmask: 255.255.255.0 IP Gateway: 192.168.2.1 Note gateways rewrite Save Note here c		Mode : 💿 Static IP 🛛 🔿 D	ynamic IP		DNS : 💿 No Default [
IP Address: 192.168.2.254 Here rewrite IP IP Netmask: 255.255.0 Note gateways rewrite IP Gateway: 192.168.2.1 Note gateways rewrite Save Note here c	Static ID				Primary DNS :
IP Netmask: 255.255.255.0 IP Gateway: 192.168.2.1 Note gateways rewrite 802.1d Spanning Tree Service: Enable Save Note here c	Static IF	IP Address : 192.168.2.254	Here rewrite IP	-	Secondary DNS :
P Gateway: 192.168.2.1 Note gateways rewrite Service: Enable		IP Netmask : 255.255.255.0		F 802.1d S	panning Tree
Save Note here c		IP Gateway : 192.168.2.1	Note gateways rewrite		Service : 💽 Enable
				Save	Note here cho

Click storage after choosing

After the restart will enter a new interface, input the user name and password

Change the user password of device

Save&Reboot



System	Wireless	Utilities	Status
Operating M Setup Wizar LAN Setup VLAN Setup	lode rd	ıglish	¥
Managemer	nt		
Time Serve SNMP	r	itdooi	r Wireless solu
	Descr Loc	iption : 802.11A	A/N Wireless A

Click "system management"

- System Language	
Language : English 💌	
-System Information	
System Name : Outdoor Wireless solution	
Description : 802.11A/N Wireless AP	
Location :	
root Password	
New root Password :	
Check root Password :	

Information inside the red boxes can be modified according demand

Practical use and operation mode

AP mode and Client Bridge+RepeaterAP communications setting

Select one device first, and change into AP mode

♠ Operating Mode

AP Mode	
O WDS Mode	
ClientBridge+RepeaterAP Mode	



click Save&Reboot, and mak	ke it AP mode
	Please Wait
	ASystem will restart after 48 seconds

Equipment will enter into the status of countdown

General setup

★ Wireless Setup



Here is mainly to set the device's band model, nation and channel

MAC Address : 00:c0:ca:67:69:76	TX/RX Stream : O 1	0 2
Band Mode : 802.11a/n	Channel BandWidth : O 20	20/40
Country : US	Extension Channel : O Upper	• Lower
Channel: 161 (5805 Mhz) 🔽 Auto Scan AP List	MCS : Auto 💌	
Tx Power : Level 9	Short GI : O Disable	• Enable
	Aggregation : O Disable	Enable
	Aggregation Frames : 32]
	Aggregation Size : 50000	1

Virtual AP Setup

AP





Overview

★ Virtual AP Overview

"Virtual

Click

VAP	List					
VAP	MAC Address	ESSID	Status	Security Type	MAC Filter Setup	VAP Edit
VAP0	00:C0:CA:67:69:76	AP00	On	Disabled	Disable	Edit
VAP1		AP01	Off	Disabled	Disable	Edit
VAP2		AP02	Off	Disabled	Disable	Edit
VAP3		AP03	Off	Disabled	Disable	Edit
VAP4		AP04	Off	Disabled	Disable	Edit
VAP5		AP05	Off	Disabled	Disable	Edit
VAP6		AP06	Off	Disabled	Disable	Edit
VAP7		AP07	Off	Disabled	Disable	Edit

The status of default "VAPO" is "Enable", click "edit" and into setting interface

Dia Charle

Sec	curity			WPA General -		
		ESSID : AP00		Ciph	er Suite : 🔘 AES	
	Hidd	en SSID : O Enable	Oisable	Group Key Update	e Period : 600	
	Client	solation : O Enable	Disable	Master Key Update	e Period : 83400	
		IAPP : O Enable	Disable	K	ey Type : 💿 ASCII	OHEX
	Maximun	Cliente : 32		Dre eha	red Key :	
	maximun	Gildina . Jz		ric-alla	reu key .	
	VLAN	ID(Tag) : LAN VL	AN ID:	Pro-sita		
	VLAN	ID(Tag) : LAN VL/ Ity Type : WPA2-PSK	AN ID:			
WE	VLAN Secur	ID(Tag) : LAN VL/	AN ID:			
WE	VLAN Secur	ID(Tag) : LAN VL/ Ity Type : WPA2-PSK Service : O Enable	AN ID:		ieu key .	
WE #	VLAN Secur DS Setup — Enable	ID(Tag) : LAN VL ty Type : WPA2-PSK Service : O Enable WDS Peer's MA	AN ID:	Description	ieu key .	
WE # 01	VLAN Secur DS Setup — Enable	ID(Tag) : LAN VL ty Type : WPA2-PSK Service : O Enable WDS Peer's MA	AN ID: Disable C Address	Description	ieu key .	
WE # 01 02	VLAN Secur DS Setup	ID(Tag) : LAN VL ty Type : WPA2-PSK Service : O Enable WDS Peer's MA	Disable C Address :	Description	ieu key .	
WE # 01 02 03	VLAN Secur DS Setup	ID(Tag) : LAN VL ty Type : WPA2-PSK Service : O Enable WDS Peer's MA	Disable C Address : : : : : : : : : : : : :	Description	ieu key .	





Input corresponding identification in ESSID window, if you need encryption, choose different encryption

in the relevant "security type" Maximum Clients : | 32 VLAN ID: VLAN ID(Tag) : LAN Security Type : WPA2-PSK V Disable WEP WPA-PSK etup WPA2-PSK VPA-Enterprise Service isab WPA2-Enterprise ble WEP 802.1X ess Save After the set of this page, click A Press " Reboot " after all configurations to enable new setting. Click "restart"" Reboot A Press "Reboot " after all configurations to enable new setting Sometimes it may be necessary to reboot the system if it begins working improperly. Rebooting the system will 8 not delete any of your configuration settings. Click reboot button to reboot the system Reboot Reboot Enter into countdown interface after clicking **Please Wait** System will restart after 48 seconds... Enter into main interface after the restart, the setting of AP mode is basically end Then choose another equipment, mode make its

ClientBridge+RepeaterAP



C Operating Mod	e ———			
	O AP Mode			
	O WDS Mode			
	OlientBridge	+RepeaterAP Mode		
Click	, make the dev	rice ClientBridge+Re ase Wait	epeaterAP	mode。

The device enter into countdown status

Relevant parameter setting

Into system interface, click "wireless setting", appear drop-down menu, choose "available network search"



Appear the window of "search network ":

Wireless Scan	ning	

After the search, there will be a list of "find network", find out the setting RSSID name in another AP mode



device, click "choose"

▲ AP Site Survey List

	ESSID	MAC Address	Signal/Noise, dBm	RSSI	Signal Quality, %	Channel	Security	Select
	JovySys	00:1D:73:BA:D6:C0	-87 / -95	8	15%	2	WPA-PSK/TKIP	Select
	SZWX	00:C0:CA:60:32:6E	-73 / -95	22	62%	4	WPA2-PSK/AES	Select
	hcay	F4:EC:38:42:BF:EA	-83 / -95	12	28%	9	WPA-PSK/AES	Select
0	default_wds	00:C0:CA:67:DB:09	-83 / -95	12	28%	1	NONE	Select
0	default_wds	00:C0:CA:67:DB:55	-84 / -95	11	25%	1	NONE	Select

Operate on the presented interface

▲ Station Profile

	Connecti	on Setup —					1
		Connection Mode	: 💿	Force	O Cycle		
			Sa	ive			
	Profile C		· 00·C	0.CA-67-D9-89	Set	the	name of the
		Profile Name	: 123	3	conf	igur	ration file
		ESSID	: szv	<i>i</i> x		-0	
		Lock to AP MAC	: 00:	c0:ca:60:32:	6e (0	otional)	
		Security Type Cipher Suite	: WP			Enter	r the password se
		Pre-shared Key	: sur	itor%060518	(on ai	nother device
				[Save		
	Save ofte	r the set of th	ie na	00			
	, and		io pu	ge			
Remo	te AP				AP	ress " Reboot	" after all configurations to enable new setting.
Cor	nection Informat	ion					
ESSID	MAC Address 00:c0:ca:60:32:6e	Signal/Noise, dbm 0 / 0	RSSI	Signal Quality, %	TX/RX Rate	Status Unlinked	
			-				

The new configuration files will work after clicking "restart"



Click "restart"



		Press "Reboot " after all configurations to enable new setting.
Sometimes it may be neces not delete any of your configured of the second se	ssary to reboot the system if it begins working impri iguration settings. Click reboot button to reboot the	operly. Rebooting the system will -
		Reboot
Reboot and infe	o the countdown interface of	"restart"
	Please Wait	
	ASystem will restar	rt after 48 seconds

Enter into main interface after the restart, the setting of AP mode is basically end

Point to point communications setting in WDS mode between two devices WDS

C Operating Mo	de
	O AP Mode
	WDS Mode
	ClientBridge+RepeaterAP Mode

Choose "Operating Mode" In the drop-down menu of "system setting", and choose "WDS mode" in the

popping interface

click Save&Reboot , system will into countdown status of restart



ystem will restart after 18 seconds	n will restart	after 18 seconds	
-------------------------------------	----------------	------------------	--

Login in again, click on "wireless setup", choose "general setup" in the drop-down menu

Choose "General Setup" in the "wireless"

Operati	General Setup	
r Operau	Advanced Setup	
- Oper	WDS Setup	
	WDS Status	
L	WDS	S Mode
	O Clien	tBridge+RepeaterAP Mode

Parameter selection in 802.11a mode

Genera	I Setup		07.00.70					- H	Physical Mode -
	MAC Addres	ss:UU:cU:ca	167169176	_	MAC address	or the	machin		TX/RX Strea
	Band Mor	de: 802.11	a/n		Here mode	e select	ion req	uires	Channel BandWid
	Count	ry. US			wo device	s			Extension Chann
	Chann	nel: 161 (5	805 Mhz)	Aut	to Scan AP List				MC
	Tx Pow	er : Level 9	9	 * 					Short
			Fre	eque	ency select	ion, to c	ommu	nicate	Aggregatio
			VVIL	i ue	vices				Aggregation Frame
									1
In 802	2.11n n	node	, th	е	communicatio	n bar	ndwidth	is	150M(ideally)



Select here on behalf



In 802.11n mode, the communication bandwidth is 300M(ideally)802.11a/n



This setting, mainly to adjust frequency, wireless video mode, this two parameters need to be consistent with the relevant equipments(emission receiving)! Usually 802.11a mode is enough for equipment to transfer video, choose the proper mode according the amount of information

WDS setting

Notes in filling in WDS parameter WDS



#	Enable	WDS Peer's MAC Address	Description
)1			
12			
03			
04			
05			· · · · · · · · · · · · · · · · · · ·
06			
07			
08			

After completing the parameter, click storage and restart. Do the same set in its communication device, the two equipment can communicate normally. Bridge of WDS bridge, can do point-to-point, point to multi-point(one-to-four at most), according to different angle .microwave transmission need no barrier with liner transmission, but in 30 degree angle of receiver, can launch more than one ,do point to multi-point.