

GONU14RS GEPON ONU with CATV and VoIP FXS



User's Guide

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1 Product Introduction

The GONU14RS is a GEPON ONU terminal, which complies with the IEEE 802.3ah standard and the CTC2.0 standard. The device provides one EPON interface, four 10/100BASE-T Ethernet interfaces, one CATV RF connector, and two FXS VoIP interfaces. The EPON interface provides passive Ethernet access and 1.25G symmetrical broadband data transmission. Each Ethernet interface provides 100M Ethernet data service. The CATV connector provides community antenna television (CATV) service. The FXS interfaces provide two channels of VoIP service. In this way, the GONU14RS integrates data network, video network, and voice network.

1.1 Application Scenario

The device applies to building or home (indoor) networks, and commercial (office, department, hotel, and warehouse) networks, in which FTTB/FTTH is established. Various service interfaces meet different requirements of customers.

1.2 Features

The device supports the following features:

- IEEE802.3ah-2004 and IEEE802.3u
- DBA algorithms, FEC codec
- OAM control compliant with EPON standards
- Up to 8 logical link IDs (LLIDs)
- 40 configurable queues
- VoIP management based on Web
- IEEE802.1p/q, highly flexible 802.1q VLAN
- IEEE802.1D QoS and STP
- IEEE802.3X flow control
- IGMP Snooping
- IPv6
- SC/APC interface
- Triple churning decryption key
- 47 MHz~870 MHz CATV RF bandwidth
- SIP RFC3261/3262/3263/3264/3265

- G.711, G.726, G.729 voice coding
- RFC2833 DTMF
- T.38, G711 FAX transparent pass-through mode
- Special service of VoIP
- UART CONSOLE port

1.3 LED Indicators and Interfaces

Front Panel



LED	Color	Status	Description	
Dannar	Green	On	The device is powered on.	
Power		Off	The device is powered off.	
	Croon	On	A system alarm occurs.	
Alam	Green	Off	The system is running normally.	
		On	The CATV port detects the signal.	
CATV	Green	Off	The system is powered off, or no	
			CATV service exists.	
	Green	On	The Ethernet interface is connected,	
			but no data is being transmitted.	
		Blinks	Data is being transmitted through the	
LAN4/3/2/1			Ethernet interface.	
		Off	The device is powered off or the	
			Ethernet interface is not connected	
			to the terminal.	
	Green	On	EPON connection is normal.	
		Dista	The system is trying to establish	
PON_LINK		DIITIKS	EPON connection.	
		Off	EPON connection is not established.	

LED	Color	Status	Description	
PON_LOS	Red	Blinks	The receiving optical power of the ONU is lower than the sensitivity of the optical receiver.	
		Off	The receiving optical power of the ONU is normal.	
	I Green	On	The phone is registered to the SIP Server.	
		Blinks slowly	The phone is hooked off.	
PHONE_2/1		Blinks quickly	The phone is ringing.	
		Off	The phone fails to register to the SIP Server.	

Rear Panel



Figure 2 Rear panel

Interface/Button	Description
PON	1 x SC/APC optical module interface
LAN1/2/3/4	4 x RJ45 10/100BASE-T Ethernet interfaces
CONSOLE	1 x RJ45 UART interface
CATV	1 x metric RF connector
Pnone1/2	2 x RJ11 interfaces
Power	Connect to an external adapter, with output of 12 V DC
on/off	The power switch

Interface/Button	Description	
Reset	Hardware reset	

1.4 Product Specifications

Item	Parameters	Specifications	
	Uplink/downlink	1.25 Gbps	
	transmission rate		
		 Uplink: 1310 nm 	
Optical	Central wavelength	 Downlink: 1490 nm 	
interface		 CATV: 1550 nm 	
	Transmission distance	Maximum: 20 km	
	Maximum number of	32 ONI Is within 20 km	
	connected ONUs	32 01403 Within 20 Km	
	RF bandwidth	47 MHz~870 MHz	
	RF output	22 dBmV	
	Carrier to noise ratio	> = 46 dB	
CATV	(CNR)		
interface	Carrier to composite		
	second order beat ratio	58 dB	
	(C/CSO)		
	Carrier to composite	58 dB	
	triple beat ratio (C/CTB)		
Electrical	Consumption	10 W	
specificatio	Adapter input voltage	100 V ~ 240 V AC, 50 Hz/60 Hz	
ns	Adapter output voltage	12 V ± 10%	
	Electromagnetic	FCC Part 5 Class B5	
EMC and	compatibility	• EN55022 Class B (CISPR 22B)	
Safety	companying	VCCI Class B	
Callety	ESD protection	 IEC 61000-4-2 	
		 GR-1089-CORE 	

ltem	Parameters	Specifications
		• FDA 21CFR 1040.10 and
	Laser eye safety	1040.11
		 EN (IEC) 60825-1
		• EN (IEC) 60825-2
	Green standard	RoHS
Physical	Rhygiaal dimonsion	L x W x H: 218 mm x 172 mm x 41
specificatio	Filysical dimension	mm
ns	Weight	580 g

1.5 System Requirements

Refer to the following instructions to ensure normal running of the ONU:

- The FTTB/FTTH service and the fiber connector must be available.
- Use the original adapter that is included in the product package. The power must meet the requirement.
- Use the single-mode fiber of the SC/APC connector for connection.
- Use the coaxial-cable that matches metric RF connector for TV connection.
- Use the original Console serial cable to connect the RJ45 serial interface.

1.6 Environment Requirements

Item	Specifications	
Operating temperature	0°C~40°C	
Storage temperature	-40°C~75°C	
Operating humidity	10%~90%, non-condensing	
Storage humidity	5%~95%, non-condensing	
Power	Power adapter output: 10.8 V~13.2 V DC	

1.7 Safety Precautions

Refer to the following instructions to protect the device from risks and damage caused by fire and electric power:

- Use volume labels to mark the type of the power.
- Use the original adapter that is included in the product package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines or plugs may cause electric shock or fire accident. Check the power cable regularly. If you find any damage, replace the power cable at once.
- Keep proper grounding at the grounding end of the power outlet, to avoid any damage to the device caused by lightning.
- Keep proper space for heat dissipation, to avoid any damage to the device caused by overheating. The thin holes on the shell are designed for heat dissipation, to ensure that the device works normally. Do not cover the heat dissipation holes.
- Do not put this device close to a place where a heat source exits or high temperature occurs. Avoid the device from direct sunshine.
- Do not put this device close to a place where is too damp or watery. Do not spill any fluid on this device.
- Do not connect this device to any electronic product, unless our customer engineer or your broadband provider instructs you to do this, because any incorrect connection may cause power or fire risk.
- Do not place this device on an unstable surface or support.

1.8 Standard Compatibility and Compliance

- CCCA standard
- IEEE802.3ah-2004
- IEEE802.3u
- IEEE802.1Q
- IEEE802.1D
- IPv6
- SNMP V1/V2
- SIP RFC3261/3262/3263/3264/3265
- G.711, G.726, G.729 voice coding
- RFC2833 DTMF
- T.38, G711 FAX pass-through mode

2 Hardware Installation

2.1 Power Interface

The GONU14RS uses special external power adapter of 12 V DC.

2.2 PON Interface

The optical interface of the GONU14RS is an SC/APC interface and is on the right of the rear panel. During setup, remove the plastic dust cap of the SC/APC interface and keep it well for future usage. Clean the SC/APC connector of the fiber line with absolute alcohol and insert the SC/APC connector into the SC/APC interface. If there is a clear "da" sound, the connection is correct. Otherwise, remove the fiber connector and try again.

Perform the preceding operations at the PON interface every time you use the ONU. If the ONU is not in use, cover the optical interface of the ONU with the plastic dust cap, to prevent dust or other waste from falling into the optical interface, which may cause ONU failure.



The ONU has invisible internal laser, which may cause harm to eyes. During setup, avoid direct eye exposure to the optical interface of the ONU, the fiber connector of the fiber line, or the uncovered area of the fiber.

2.3 Ethernet Interface

The GONU14RS provides four channels of general Ethernet service interfaces of standard RJ45 connectors.

The general Ethernet service interface is of MDI/MDI-X self-adaptation. You can use either crossover cable or straight-through cable. Figure 3 shows the line order of the Ethernet cables.



Figure 3 Line order of Ethernet cable

Straight-through cable: Refer to Table 1 for the line order of both ends of the cable.

Crossover cable: Table 1 shows the line order of one end of the cable and Table 2 shows the line order of the other end.

No.	Definition	Color
1	TXD+	Orange and white
2	TXD-	Orange
3	RXD+	Green and white
4	Null	Blue
5	Null	Blue and white
6	RXD-	Green
7	Null	Brown and white

 Table 1
 Pinout of straight-through cable at Ethernet RJ-45 port

No.	Definition	Color
8	Null	Brown

Table 2 Pinout of crossover cable at Ethernet RJ-45 port

No.	Definition	Color
1	RXD+	Green and white
2	RXD-	Green
3	TXD+	Orange and white
4	Null	Blue
5	Null	Blue and white
6	TXD-	Orange
7	Null	Brown and white
8	Null	Brown

3 Web Configuration

Before configuring on the Web user interface, ensure that the IP range of PC network card is **172.24.107.xxx** and that the subnet mask is 255.255.0.0.

3.1 Login

- Step 1 Open the Web browser and enter the IP address of the VoIP configuration interface. The default IP address is 172.24.107.246.
- Step 2 Enter the user name and password and press the Enter key or click Log In to log in to the HOME page.

Please Log In to continue		
	Log In	-
	Username:	
	Password:	
		-
		Log In

- Username: Admin
- Password: Admin

3.2 Home Page

The **HOME** page is as follows.

	T&W	HOME	SETUP	ADV	ANCED	VOICE	T00	LS	STATUS	HELP	
w	Welcome to the TI Router										
	Setup The Setup section allove you to create new connections, addr existing connections, and configure other basic settings.	Advance The Adv lets you advance RIP, Fin Voice, U LAN clies	ed anced sect configures id features rwall, NAT, PnP, IGMP nts.	lion like and	Tools The Too you can comma simple	ols section ry out syst nds and p system te	lets em erform sts.	State The 3 displi- statis for al interf	is Status sec ays status tical infor l connecti aces.	tion nog and mation ons and	Help The Help section provides information on configuration and settings for each section.
					Statu	is Informa	tion				
	LANI. Connexted WANI Connexted Software Version V (TV):1.7-7009012 Provisioning Status: Provisioned:Could not reach config server Voice Gervice: Down PORT1 RegStatus: unRegistered PORT2 RegStatus: unRegistered										
	Log Out										Refresh

Parameters in this page are described as follows:

Field	Description				
System Uptime	The interval since the last system start-up.				
	Connection status of the LAN interface. In this case,				
LAN	it is the connection status of the VoIP interface.				
	Connection status of the WAN interface. It is usually				
WAN	in the Connected state, unless the hardware				
	becomes faulty.				
Software Version	Current version of the software.				

Field	Description
Provisioning Status	Connection status of the Provision.
Voice Service	Whether the voice service is started. If at least one phone is registered to the SIP Server, the value of this field is UP . Otherwise, it is DOWN .
PORT1 RegStatus	Whether Phone1 is registered to the SIP Server.
PORT2 RegStatus	Whether Phone2 is registered to the SIP Server.

3.3 Basic Configuration of Network Interface

3.3.1 Main User Interface

Click **SETUP** at the top of the home page and the main configuration page shown as follows appears:

T&W ELECTRONICS	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP					
LAN Setup		Setup										
LAN Configuration	The Se conne	The Setup section allows you to create new connections, edit existing connections, and configure other basic settings.										
WAN Setup												
dhcp-voice					LAN Se	etup						
Log Out	-	Select to assign physical LAN Interfaces to LAN and configure Configuration LAN IP address, LAN DHCP Server.										
		WAN Setup										

3.3.2 LAN Configuration

Click LAN Configuration in the left pane and the following page appears:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP						
LAN Setup		LAN Group 1 Configuration											
LAN Configuration	O∪nr	IP Settings Services S OUnmanaged IP Filters											
WAN Setup dhcp-voice	O OB	Oobtain an IP address automatically U IP Address: IP A											
	⊙Use	• the follo 1 F Enabl	wing Static IF P Address: Netmask: Host Name: Domain: e DHCP Serv Start IP: End IP:	P address 192.168.15 255.255.25 mygateway INETV106 er 192.168.15 192.168.15	1 5.0 1 ISDB .2 .254	Koudhg S,SNTP							
		O Enabl	e DHCP Rela Relay IP: [r and Relay (20.0.0.3	Seconds]		Apply Cancel					

IP Settings

- Unmanaged: Do not configure the IP address information of the LAN interface.
- Obtain an IP address automatically: Obtain an IP address through DHCP from LAN side.
 - IP Address: The IP address obtained by DHCP.
 - Netmask: The subnet mask obtained by DHCP.
 - Release: Release the current IP address.
 - Renew: Obtain an IP address again.
- Use the following Static IP address: Configure the static IP address.
 - IP Address: Set the IP address of LAN interface.
 - Netmask: Set the Netmask of LAN interface.
 - Host Name: The name of the host.
 - **Domain**: The name of the domain.
- Enable DHCP Server: Enable DHCP Serve on the LAN side.
 - Assign ISP DNS,SNTP: Whether to enable assigning ISP DNS and SNTP when DHCP Server is enabled.
 - Start IP: The started IP address of DHCP Server.
 - End IP: The end IP address of DHCP Server.

- Lease Time: The lease time of DHCP Server.
- Enable DHCP Relay: Enable DHCP proxy function. Relay IP: The IP address of DHCP proxy.
- Server and Relay Off: Disable DHCP Server and DHCP proxy on the LAN side.
- Service Status
 - IP Filter: The status of the IP filter function. You can configure it in the ADVANCED page. Green means enabled and red means disabled.
 - UPnP: The status of the UPnP function. You can configure it in the ADVANCED page. Green means enabled and red means disabled.
 - LAN Clients: The status of the LAN clients function. You can configure it in the ADVANCED page. Green means enabled and red means disabled.
 - Static Routing: Link to the ADVANCED page for corresponding configuration.

3.3.3 WAN Connection Configuration

Choose **WAN Setup** > **dhcp-voice** and the following page appears:

T&W	HOME SETUP ADVANCEO VOICE TOOLS STATUS HELP										
LAN Setup	Static Connection Setup										
LAN Configuration	Name: dhcp-voice Type: Static										
	Options: NAT Direwall PPPoE										
dhcp-voice	Static Settings DHCP										
Log Out	IP Address: 172.24.209.65 Enable:										
	Mask: 255.255.0.0 Username: username										
	MAC: 00:e0:a6:66:48:e0 Restore Password:										
	Default Gateway: Server IP: 192.168.15.20										
	DNS 1: MPPC:										
	DNS 2: MPPE: No Req'd Optional										
	DNS 3: Strength: 🗹 bit 🗹 bit										
	Stateless: 🕑										
	Autnentication: Auto										
	O MSCHAP O MSCHAP-v2										
	Debug: 🗌										
	Apply Cancel										

- Type: Select PPPoE.
- Name: The name of the connection. You can modify it.
- Options: Enable NAT and firewall. To access the Web page through the optical interface, deselect the Firewall check box.

The following page displays the function of obtaining IP address through PPPoE.

T&W ELECTRONICS	HOME <u>setup</u> advanced voice tools status help										
LAN Setup	PPPoE Connection Setup										
LAN Configuration											
	Name: pppoe-voice Type: PPPoE 🕶										
	Options: 🗹 NAT 🔲 Firewall										
WAN Setup											
dhcp-voice	PPP Settings										
Log Out	Username: username										
	Password: ••••										
	Keep Alive: 10 min										
	Authentication: Auto CHAP PAP 										
	MTU: 1492 bytes										
	MAC: 00:e0:a6:66:a4:e0 Restore										
	Default Gateway: 🗹										
	Enforce MTU: Debug: D										
	Connect Disconnect										
	Apply Cancel										

• PPP Settings:

- Username: User name of PPPoE
- **Password:** Password of PPPoE
- Keep Alive: Keep alive time of PPPoE.
- Authentication: Select the authentication mode of PPPoE.
- MTU: Maximum transmission unit of PPPoE
- **MAC**: Ethernet address of the WAN interface
- **Restore**: Restore the default Ethernet address.
- **Default Gateway**: Whether to set it to the default gateway.

After setting the parameters, click **Apply** to apply the settings immediately. Because the configuration is lost if the IAD is powered off, you must click **Save All** in the **System Command** page from the **Tools** menu. See the following figure:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP					
System Commands		System Commands										
Remote Log - Router	System Commands allow you to carry out basic system actions. Press											
Update Gateway		the button to execute a command.										
Ping Test		permanently save the current										
Log Out		configuration of the Gateway. If you do restart the system without saving your configuration, the Gateway will revert back to the previously saved configuration.										
	Use this button to restart the system. If you have not saved your configurations, the Gateway will revert back to the previously saved configuration upon restarting. NOTE: Connectivity to the unit will be lost. You can reconnect after the unit reboots.											
		Restore Factory Defaults										
				Prov	isioned Pa	rameters						
				□ Non-	Provisione	ed Paramet	ers					
				Re	store Defa	aults						

For setting the static IP address, see the following figure:

T&W ELECTRONICS	HOME SETUP ADVANCED VOICE TOOLS STATUS HELP										
LAN Setup	Static Connection Setup										
LAN Configuration											
	Name: staticyvoice Type: Static 🞽										
WAN Setup	Options: 🗹 NAT 🗋 Firewall										
dhcp-voice	Static Settings PPTP Settings										
Log Out	IP Address: 172.24.106.123 Enable:										
	Mask: 255.255.0.0 Username: username										
	MAC: 00:e0:a6:66:a4:e0 Restore Password: ••••										
	Default Gateway: Server IP: 192.168.15.21										
	DNS 1: MPPC:										
	DNS 2: MPPE: O No O Reg'd O C	ptional									
	DNS 3: Strength: ♂ ⁴⁰⁻ ♂ ⁵⁶⁻ √	128- bit									
	Stateless: 🗹										
	Authentication: Auto 										
	O CHAP O PAP										
	O MSCHAP O MSCH	AP-V2									
	Debug:										
	Apply	Cancel									

- Static Settings
 - IP Address: Set the IP address.
 - Mask: Set the subnet mask.
 - MAC: Ethernet address
 - Restore: Restore the default Ethernet address.

After setting the parameters, click **Apply** to apply the settings immediately. Because the configuration is lost if the IAD is powered off, you must click **Save All** in the **System Command** page from the **Tools** menu. See the following figure:



For obtaining IP address through DHCP, see the following figure:

T&W	HOME SETUP ADVANCED VOICE TOOLS STATUS HELP											
LAN Setup	DHCP Connection Setup											
LAN Configuration	Name: dhcp-voice Type: DHCP V Options: @NAT D Firewall											
dhcp-voice	DHCP Settings PPTP Settings											
Log Out	IP Address: Enable:											
	Gateway: Username: Username											
	Default Gateway:											
	MAC: 00:e0:a6:66:a4:e0 Restore Server IP: 192.168.15.21											
	MPPC:											
	Renew Release MPPE: No O Req'd O Optional											
	Strength: 🗹 ⁴⁰⁻ 🗹 ⁵⁶⁻ 🗹 ¹²⁸⁻											
	Stateless: 🗹											
	Authentication: Auto 											
	Debug:											
	Apply Cancel											

DHCP Settings

- Default Gateway: Whether to set it to the default gateway.
- **Restore**: Restore the default Ethernet address.
- Renew/Release: Renew or release the IP address.

After setting the parameters, click **Apply** to apply the settings immediately. Because the configuration is lost if the IAD is powered off, you must click **Save All** in the **System Command** page from the **Tools** menu. See the following figure:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP					
System Commands	System Commands											
Remote Log - Router	Syste	System Commands allow you to carry out basic system actions. Press										
Remote Log - Voice Update Gateway	ine buillon lo execute a command.											
Ping Test	Press this button in order to permanently save the current											
Log Out		9	ave All	con do i	figuratio restart t	on of the he syste	e Gatei em wit	way. If you hout saving				
		your configuration, the Gateway will revert back to the previously saved configuration.										
		Restart Use this button to restart the system. If you have not saved your configurations, the Gateway will revert back to the previously saved configuration upon restarting. NOTE: Connectivity to the unit will be lost. You can reconnect after the unit reboots.										
	Restore Factory Defaults											
				Prov	isioned Pa	rameters						
				Non-	Provisione	d Paramet	ters					
				Re	store Defa	aults						

3.4 Advanced Configuration of Network Interface

Omitted.

3.5 Voice Configuration

Click **VOICE** in the top menu and the main configuration page appears:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP	
Setup O Provisioning	Voice							
Port 1 Port 2	Configure Voice for different							
Log Out		Pr	ovisioning	conne Config				
		Po	rt 1	Config				
		Pa	rt 2	Config	jure Por	t2 Parar	neters	

3.5.1 Provision Configuration

With the provision function, the IAD can automatically upgrade configuration files and system IMAGE in the specified address. Click **Provisioning** in the left pane and the **Provision Configuration** page appears:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP		
Setup 🔍		Provisioning							
Provisioning					(Current		Default	
Port 2		Provisio	oning Profile I	Base URL:	http://pro	file.ti.net:80),8080 ht	tp://profile.ti.net:80,8080	
Log Out		Imag	ge Firmware I	Base URL:	http://ima	age.ti.net:80	0,808C ht	tp://image.ti.net:80,808C	
			Provisioning	File Path:	:				
	Polling Interval				1			1	
		Image Do	wnload Retry	y Interval:	60 60				
	Restore Defaults								
	Provisioning Status: Provisioned:Could not read							ac	
	Voice DNS Server1:								
		Voice DNS Server2:							
								Apply Cancel	

Parameters are described as follows:

Description

Field	Description
Provisioning Profile Base URL	Storage path of the configuration file for upgrade. The value of this field can be HTTP or TFTP address.
Image Firmware Base URL	Storage path of the Image file for upgrade. The value of this field can be HTTP or TFTP address.
Polling Interval	Interval for polling, the unit is minute. After the interval is overtime, the IAD queries the configuration file. If configuration file updates, IAD downloads the file and updates it.
Image Download Retry Interval	The time of Image querying, After overtime, the IAD queries the Image file. If Image file updates, IAD downloads the file and updates it.
Provisioning Status	Connection status of the Provision, read only.
Voice DNS Server1	IP address of the primary voice DNS server.
Voice DNS Server2	IP address of the secondary voice DNS server.

3.5.2 Port 1 Configuration (SIP)

Click Port 1 in the left pane and the Port 1 Configuration page appears:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP		
Setup O		Voice Parameters							
Provisioning	Port 1 Configuration								
Port 1	REG_STATUS:unRegistered					Pa	cket_TIM	E: 20ms 💌	
Port 2	1	TX_GAIN: 0					RX_GAI	N:0	
Log Out	1	DIGIT_MA	NP:x.#4[x.t		PR	F_CODING	_PROFIL	E: PCMU 💙	
		CID_NAM	1E: 160			CID	_NUMBE	R: 160	
	AUTH_	USER_NAM	16:			WTH_USER	PASSW	D:	
	Р	ROXY FOD	N: 172.24.10	7.2		PRO	XY POR	T: 5060	
		REG FOD	N: 172.24.10	7.2			EG POR	T: 5060	
		OUTB FOD	NI-				ITB DOR	τ.	
		BOYY FOR			_		DID_FOR	· ·	
	DR_P	ROX1_FQD	ATM :		_	DK_PRO	DAT_POR		
	BK	_REG_FQD	201		_	BK_F	EG_POR	T:	
	BK_	OUTB_FQD	141			BK_O	JTB_POR	T:	
		RING_I	(D: 1			F	AX_MOD	E: Pass_Through 💌	
	TRANS,	_PROTOCO	DL: TCP 💌			DT	MF_RELA	Y: Rfc2833 💌	
	OPTI	ONS_TIME	R: 0						
		VAD_ENAB	LED			E	C_ENABL	E	
		MWI_STATE					NWAY_CONF		
		CK DEFAU				CIL	ONE DU		
	RE	G_RINGPI	NG			MS	G_DISPL/		
	EMERGENCY_CALL					CALL_RETURN			
	REPEAT_DIAL					DO_NOT_DISTURB			
	NET_	REG_CHE	СК			ANON_CA	LL_BLOG	K	
		CALLER_	ID			CALL	WAITIN	IGM IS	
	CAL	L TRANSF	FRI			CALL	FORWAR		
								Apply Cancel	

Parameters are described as follows:

Field	Description					
	Register status of the channel. That is,					
REG_STATUS	whether the channel is registered to the					
	SIP Server.					
	Time of RTP packaging. The value can be					
Packet_TIME	10 ms, 20 ms, or 30 ms. The default value					
	is 20 ms. You need not modify it.					
	DSP transmit gain. The value range is -14					
TX_GAIN	dB~6 dB.					
DV CAIN	DSP receive gain. The value range is -14					
RX_GAIN	dB~6 dB.					
	System dialup rules. You need not					
DIGIT_MAP	configure it.					
PREF_CODING_PROFILE	Preferential coding.					
CID_NAME	User name. It is the Display Name.					
	Set the caller number. It must be a number					
CID_NUMBER	of 0~9.					
AUTH_USER_NAME	Set the user name of authentication.					
AUTH_USER_PASSWD	Set the password of authentication.					

Field	Description					
	IP address or domain name of the SIP					
PROXY_FQDN	proxy.					
PROXY_PORT	Port number of the SIP proxy.					
	IP address or domain name of the SIP					
REG_FQDN	registered server.					
REG_PORT	Port number of the SIP registered server.					
	IP address or domain name of the					
	Outbound server.					
OUTB_PORT	Port number of the Outbound server.					
	IP address or domain name of the standby					
	SIP proxy.					
BK_PROXY_PORT	Port number of the standby SIP proxy.					
	IP address or domain name of the standby					
	SIP registered server.					
BK REG PORT	Port number of the standby SIP registered					
	server.					
BK OUTB FODN	IP address or domain name of the standby					
	Outbound server.					
BK OUTB PORT	Port number of the standby Outbound					
	server.					
	Set the type of ring cadence. The value					
	can be an integer of 0~7. 0 indicates to ring					
RING_ID	for one second and pause for four					
	seconds. 1 indicates to ring for two					
	seconds and pause for four seconds.					
FAX MODE	Set the FAX mode, that is, T.38 or					
	transparent pass-through.					
TRANS PROTOCOL	SIP carrying protocol. The value can be					
	UDP, TCP, or TLS.					
DTMF_RELAY	DTMF relay mode.					
	Set the time interval for sending the					
OPTIONS TIMER	OPTIONS message. The value of 0					
	indicates to disable this function. A value					
	greater than 6 indicates to enable this					

Field	Description					
	function, and the value indicates the					
	specific time interval.					
VAD_ENABLE	Enable voice activity detection (VAD).					
EC_ENABLE	Enable echo cancellation.					
MWI_STATE	The status of MWI.					
	Enable multi-way conference. This function					
	is not supported.					
	Enable call waiting, when working with					
	CALL_WAITING.					
	Enable outgoing call with a hidden ID,					
	when working with CALLER_ID.					
	Enable refusing incoming call with a hidden					
ACBLOCK_DEFAULT	ID, when working with					
	ANON_CALL_BLOCK.					
	Work with NET_REG_CHECK. When the					
	VoIP service is unavailable, a prompt tone					
	is played. The default prompt tone is busy					
	tone.					
	If this function is enabled and the VoIP					
	service is available, ring once.					
MSG_DISPLAY	This function is not supported.					
EMERGENCY CALL	Enable emergency call. The default					
	number of the emergency call is 110.					
CALL_RETURN	Enable call return.					
REPEAT_DIAL	Enable re-dial when busy.					
DO_NOT_DISTURB	Enable do not disturb.					
	Work with TONE_PLAY. When the VoIP					
NET_REG_CHECK	service is unavailable, a beep tone is					
	played. The default is busy tone.					
	Enable refusing incoming call with a hidden					
ANON_CALL_BLOCK	ID, when working with					
	ACBLOCK_DEFAULT.					
	Enable outgoing call with a hidden ID,					
	when working with CID_DEFAUL.					

Field	Description
	Enable call waiting when working with
CALL_WAITING	CW_DEFAULT.
	If this service is enabled and a NOTIFY
	message is received in the voice mailbox,
MWI	you can hear intermittent dialing tone after
	picking up the receiver. Otherwise, you
	hear the normal dialing tone.
CONFERENCING	Enable three-way conference.
CALL_TRANSFER	Enable call transfer.
CALL_FORWARD	Enable call forward.

Click **Apply** and the settings of voice port take effect immediately. You need not click **Save All** in the **TOOLs** menu.

3.5.3 Port 2 Configuration

Refer to section 4.5.2 "Port 1 Configuration".

3.6 Saving all Configurations and Restoring Default Configurations

3.6.1 Saving Configuration

Click System Commands > TOOLS and the following page appears:

T&W	HOME SETUP ADVANCED VOICE tools status help								
System Commands	System Commands								
Remote Log - Router Remote Log - Voice	System Commands allow you to carry out basic system actions. Press								
Update Gateway	Press this button in order to								
Ping Test Log Out	permanently save the current configuration of the Gateway. If you								
	save All do restart the system without saving your configuration, the Gateway will revert back to the previously saved configuration.								
	Use this button to restart the system. If you have not saved your configurations, the Gateway will revert back to the previously saved configuration upon restarting. NOTE: Connectivity to the unit will be lost. You can reconnect after the unit reboots.								
	Restore Factory Defaults								
	Provisioned Parameters								
	Non-Provisioned Parameters Restore Defaults								

Click Save All to save all configurations.

3.6.2 Restoring Default Configuration

Click **System Commands > TOOLS** and the following page appears:

T&W	HOME	SETUP	ADVANCED	VOICE	TOOLS	STATUS	HELP		
System Commands	System Commands								
Remote Log - Router Remote Log - Voice	Syste	System Commands allow you to carry out basic system actions. Press the button to execute a command.							
Update Gateway Ping Test Log Out			iave All	Pres perr cont do r you reve cont	ss this b manentl figuratic estart t r configu art back figuratic	button in y save t on of the he syste uration, to the p on.	he cur he cur Gater am wit the Ga previou	to °ent way. If you hout saving ateway will isly saved	
			Restart	Use If yo coni bad coni Con You rebo	this bu ou have figuratic k to the figuratic nectivit can rec pots.	itton to not sav ons, the previou on upon y to the connect	restart 'ed you Gatew Isly sav restart unit w after ti	the system. # ay will revert /ed :ing. NOTE: /ill be lost. he unit	
			C	Rest Provi	ore Factor isioned Pa Provisione store per	ry Default rameters id Paramet	s ers		

Parameters are described as follows.

Field/Button	Description						
Provisioned Parameters	Relevant voice configuration.						
Non-Provisioned							
Parameters	Other conliguration parameters.						
Destare Defaulte	Restore the selected configuration to						
Restore Defaults	factory default configuration.						

3.7 Online Update of Image/Configuration

Choose **TOOLS** > **Update Gateway** and the following page appears:



Click Browse and the following page appears:

GONU14RS User's manual



Select the Image file or configuration file for update and click **Update Gateway**. The update process is as shown in the following page:

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T&Y Syste Remo	V ECTRONICS I'M Commands I'M Log - Router Ite Log - Voice	HOME	SETUP To u	ADVANCED pdate your (VOICE gateway f	TOOLS irmware, Jpdate Ga	STATUS click the bu	HELP	ow.			
Upda 🗿 http://172.24.106.123 - >Tools> - Microsoft Internet Explorer												
Ping Log (Update	Gateway						4
	To update your g	jateway firr	nware, cho click the U, o file from Select a The syst the Files will need setup.	iose an updat pdate Gatewa the system by (Max file: [Z:\TNR (Max fil Firmwa image sem will be res ystem image to reconnect	ed firmware y button. A v clicking G el_VTPv1. le size 3, are Image with or w Upd tarted auto is successf again to co	a image or dditionally, et Configur Digeneric-N 75 MB) e can be tl ithout dig order Coster ormatically, fully update onfigure yo	configuratio you may ration. /TPv1.0-r ital signatu /by/ after rd. You will r ur	n file in "S Browse ad single ure.	connect	ile", and th	en dick th	e Upda
	Status:		- l	Jpgråde in	i progre	ss, Plea	se wait					
	<					The						~

After the upgrade is complete, the page shown in the following figure appears:



If you update the Image file, the system automatically reboots after the update is complete. If you update the configuration file, you need to manually reboot the system.

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4 VoIP – Supplementary Services

Feature codes of the supplementary services are as follows:

Suppleme	entary Service Type	Feature Code
Call transfer with	no consultation	#90
Call transfer with	third-party consultation	#91
Three-way confer	encing	-
Call return		*69
Redial when busy	,	#5
Cancel call waitin	g	*70
	Unconditional	*72
	When busy	*74
Call forwarding	No reply	*75
	Cancellation	*73
Do not disturb		*78
Anonymous call	Enable	*77
block	Cancel	*87
Anonymous outgo	ping call	*67

4.1 Call Holding

- Description: Hold the two parties of a conversation. It is part of call waiting, call transfer, and three-way conferencing services.
- Operation: In the conversation, press the cradle or the flash key.

4.2 Call Transfer with No Consultation

• Description:

A and B are in a conversation. A presses the Flash key to hold the conversation with B, and dials a feature code to call C. After A gets through C, B and C start a conversation, and A quits.

• Operation:

- (1) In the Voice Parameters page, enable CALL_TRANSFER.
- (2) In the conversation, press the cradle to hold B.
- (3) Press <#90>+<transferred number> to transfer the call.

4.3 Call Transfer with Third-Party Consultation

• Description:

A and B are in a conversation. A presses the Flash key to hold the conversation with B, and dials a feature code to call C. After A gets through C, A hangs up the phone to quit. B and C start a conversation.

- Operation:
 - (1) In the Voice Parameters page, enable CALL_TRANSFER.
 - (2) In the conversation, press the cradle to hold B.
 - (3) Press <#91>+<transferred number> to transfer the call.

4.4 Three-Way Conferencing

• Description:

A and B are in a conversation. A calls C, to let A, B and C be in a conversation.

- Operation:
 - (1) In the Voice Parameters page, enable CONFERENCING.
 - (2) In the conversation, press the cradle and press <third-party number> to call the third-party.
 - (3) Press the cradle to start the three-way conference.

4.5 Call Return

• Description:

Call the number of the last incoming call, no matter whether the call is received.

- Operation:
 - (1) In the **Voice Parameters** page, enable **CALL_RETURN**.
 - (2) Press <*69>.

4.6 Redial when Busy

- Description: A calls B, B is busy, A hangs up, and waits for some time, and automatically calls B.
- Operation:
 - (1) In the Voice Parameters page, enable REPEAT_DIAL.
 - (2) Perform an outgoing call and the other party is busy. Press<#5> and hang up.

4.7 Call Waiting

• Description:

This function enables you to receive an incoming call from the third party in a conversation.

- Operation:
 - (1) In the Voice Parameters page, enable CALL_WAITING and CW_DEFAULT.
 - (2) If you do not want to use call waiting, press <*70>. The service is cancelled in this conversation. If you do not press <*70>, you hear a beep tone when a third-party calls. At this time, you can press the cradle to switch the party in the conversation.

4.8 Call Forwarding

4.8.1 Unconditional Call Forwarding

• Description:

This function forwards all incoming calls to a preset number.

- Operation:
 - (1) In the Voice Parameters page, enable CALL_FORWARD.
 - (2) Pick up the phone and press <*72>+<forwarding number>, to activate unconditional call forwarding. All incoming calls are forwarded to the set forwarding number.

4.8.2 Call Forwarding when Busy

• Description:

This function forwards incoming calls to a preset number when the local party is busy.

- Operation:
 - (1) In the Voice Parameters page, enable Call forwarding.
 - (2) Pick up the phone and press <*74>+<forwarding number>, to activate call forwarding when busy. When the local party is busy, incoming calls are forwarded to the set forwarding number.

4.8.3 Call Forwarding No Reply

• Description:

This function forwards incoming calls to a preset number when the local party does not reply.

- Operation:
 - (1) In the Voice Parameters page, enable CALL_FORWARD.
 - (2) Pick up the phone and press <*75>+<forwarding number>, to activate call forwarding no reply. When the local party does not reply an incoming call, the incoming call is forwarded to the set forwarding number.

4.8.4 Call Forwarding Cancellation

• Description:

This function cancels the call forwarding function.

• Operation: Pick up the phone and press <*73> to cancel call forwarding.

4.8.5 Do Not Disturb

- Description: This function prevents the local party from receiving incoming calls.
- Operation:

Acronyms and Abbreviations

- (1) In the Voice Parameters page, enable **DO_NOT_DISTURB**.
- (2) Pick up the phone and press <*78>, to activate the do not disturb function.
- (3) Pick up the phone and hang up, to deactivate the do not disturb function.

4.9 Anonymous Call Block

• Description:

This function blocks anonymous incoming calls.

- Operation:
 - (1) In the Voice Parameters page, enable ANON_CALL_BLOCK and ACBLOCK_DEFAULT.
 - (2) Pick up the phone and press <*77>, to activate the anonymous call block function.
 - (3) Pick up the phone and press <*87>, to deactivate the anonymous call block function.

4.10 Anonymous Outgoing Call

Description:

This function enables anonymous outgoing call, which is applicable to some special cases.

- Operation:
 - (1) In the Voice Parameters page, enable CALLER_ID and CID_DEFAULT.
 - (2) Pick up the phone and press <**call number**>. The outgoing call is with the number of the caller.
 - (3) Pick up the phone and press <*67>+<call number>. The outgoing call is anonymous.

Appendix A Acronyms and Abbreviations

CATV	Community Antenna Television
EPON	Ethernet Passive Optical Network
DBA	Dynamic Bandwidth Allocation
FEC	Forward Error Correction
FTTB	Fiber to The Building
FTTH	Fiber To The Home
IGMP	Internet Group Management Protocol
OLT	Optical Line Terminal
ONU	Optical Network Unit
PON	Passive Optical Network
QoS	Quality of Service
SLIC	Subscriber Line Interface Controller
UNI	User Network Interfaces
VLAN	Virtual LAN
VoIP	Voice over Internet Protocol
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DoS	denial-of-service
EPON	Ethernet Passive Optical Network
FTTB	Fiber To The Building
FTTH	Fiber To The Home
ISP	Internet Service Provider
MAC	Media Access Control
ONU	Optic Network Unit
VCI	Virtual Channel Identifier
VPI	Virtual Path Identifier