

# Protoss-PG46

## RS485/Ethernet to 4G Router

### User Manual

V 1.0



### Overview of Characteristic

- ◇ Use MIPS MCU (32MB SRAM) and 16MB Flash, based on Linux OS
- ◇ Support LTE-TDD, LTE-FDD, WCDMA, TD-SCDMA, cellular network, sub-type to support specific cellular network
- ◇ Support RS485 to 2G/3G/4G Data Transmission, UART baud rate Up to 460800bps
- ◇ Support 10/100M Ethernet to 2G/3G/4G Data Transmission
- ◇ Supports Max 5 Channel TCP/UDP connections, Each Connection Supports 1400 Bytes of Data Cache
- ◇ Support Multiple Working Modes: Network Transparent Transmission Mode, HTTP Mode, MQTT, WebSocket

- ◇ Support Modbus Master Function
- ◇ Support IOTService Tool, Remotely and Dynamically Modify Module Parameters
- ◇ Support APN
- ◇ Support VPN(PPTP, L2TP, L2TP+IPSEC)
- ◇ Supports Registration Packet, Heartbeat Packet Function, and Packet Supports Combination of ICCID, IMEI, IMSI, Software Version, cellular network Connection Status.
- ◇ Support NTP
- ◇ Support Modbus TCP to Modbus RTU
- ◇ Support IOTBridge for Remote Control and Config.
- ◇ Support IOTBridge working time, for example only works from 10:00 to 10:30 to save the data flow charge.
- ◇ Support Network OTA Upgrade Firmware.
- ◇ Multiple Type of Different Power Input:
  - Protoss-PG46-H: 100~240VAC@50~60Hz
  - Protoss-PG46-M: 9~48VDC@1A
- ◇ Size: 102.03 x 64.95 x 27.50 mm (L x W x H) , C45 rail installation

**TABLE OF CONTENTS**

**TABLE OF CONTENTS.....3**

**LIST OF FIGURES.....4**

**LIST OF TABLES .....4**

**1. PRODUCT OVERVIEW .....5**

**1.1. General Description.....5**

**1.2. Device Parameters.....5**

**1.3. Key Applications.....7**

**2. HARDWARE INTRODUCTION .....8**

**2.1. APPEARANCE.....8**

**2.2. Interface Definition .....9**

**2.3. RS485 Interface .....10**

**2.4. Mechanical Size .....10**

**2.5. Product Installation .....12**

**2.6. Product Order Information.....13**

**3. FUNCTION DESCRIPTION.....14**

**APPENDIX A: CONTACT INFORMATION.....15**

## LIST OF FIGURES

Figure 1.	Protoss-PG46 Appearance .....	8
Figure 2.	Protoss-PG46 Interface .....	9
Figure 3.	Protoss-PG46-H Interface Definition.....	9
Figure 4.	Protoss-PG46-H Interface Definition.....	10
Figure 5.	Protoss-PG46 Mechanical Size .....	12
Figure 6.	C45 Rail Installation .....	12
Figure 7.	Protoss-PG46 Product Order Information .....	13

## LIST OF TABLES

Table1.	Protoss-PG46 Series Defination.....	5
Table2.	Protoss-PG46 Technical Specifications.....	5

## HISTORY

**V 1.0** 05-29-2020. First Version

# 1. PRODUCT OVERVIEW

## 1.1. General Description

The Protoss-PG46 support LTE-TDD, LTE-FDD, WCDMA, TD-SCDMA, cellular network full network. 4G network support maximum download data rate 150Mbps, upload data rate 50Mbps.

The Protoss-PG46 supports TCP/IP protocol, with its RS485 interface, it makes traditional UART device easy connecting to IOT.

Protoss-PG46 include different sub-type, as following table.

Table1. Protoss-PG46 Series Definition

Model	Function	Main Function		Interface					Band					
		Country	Input Voltage	4G	3G	2G	Serial	Support Serial Mode	TDD-LTE	FDD-LTE	TD-SCDMA	WCDMA	CDMA2000 1X/EVDO	GSM
Protoss-PG46-H		just China	100~240VAC	√	√	√	1	RS485	B38/39/40/41	B1/3/5/8	B34/39	B1/8	—	B3/8
Protoss-PG46-GL-H		global	100~240VAC	√	√	√	1	RS485	B38/39/40/41	B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28	—	B1/2/4/5/6/8/19	—	B2/3/5/8
Protoss-PG46-CE-H		China	100~240VAC	√	√	√	1	RS485	B34/38/39/40/41	B1/3/5/8	B34/39	B1/8	BC0	B3/8
Protoss-PG46-EU-H		Europe, Israel, South Korea, Southeast Asia India, Russia, Middle East, etc.	100~240VAC	√	√	√	1	RS485	B38/40/41	B1/3/7/8/20/28A	—	B1/8	—	B3/8
Protoss-PG46-EC-H		Europe, Israel, South Korea, Southeast Asia India, Russia, Middle East, etc.	100~240VAC	√	√	√	1	RS485	—	B1/3/7/8/20/28A	—	B1/8	—	B3/8
Protoss-PG46-AF-H		Canada, USA	100~240VAC	√	√	—	1	RS485	—	B2/4/5/12/13/14/66/71	—	B2/4/5	—	—
Protoss-PG46-AU-H		Australia, Latin America, Taiwan(China), New Zealand, etc.	100~240VAC	√	√	√	1	RS485	B40	B1/2/3/4/5/7/8/28	—	B1/2/5/8	—	B2/3/5/8
Protoss-PG46-JP-H		Japan	100~240VAC	√	√	—	1	RS485	B41	B1/3/8/18/19/26	—	B1/6/8/19	—	—
Protoss-PG46-M		just China	9~48VDC	√	√	√	1	RS485	B38/39/40/41	B1/3/5/8	B34/39	B1/8	—	B3/8
Protoss-PG46-GL-M		global	9~48VDC	√	√	√	1	RS485	B38/39/40/41	B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28	—	B1/2/4/5/6/8/19	—	B2/3/5/8
Protoss-PG46-CE-M		China	9~48VDC	√	√	√	1	RS485	B34/38/39/40/41	B1/3/5/8	B34/39	B1/8	BC0	B3/8
Protoss-PG46-EU-M		Europe, Israel, South Korea, Southeast Asia India, Russia, Middle East, etc.	9~48VDC	√	√	√	1	RS485	B38/40/41	B1/3/7/8/20/28A	—	B1/8	—	B3/8
Protoss-PG46-EC-M		Europe, Israel, South Korea, Southeast Asia India, Russia, Middle East, etc.	9~48VDC	√	√	√	1	RS485	—	B1/3/7/8/20/28A	—	B1/8	—	B3/8
Protoss-PG46-AF-M		Canada, USA	9~48VDC	√	√	—	1	RS485	—	B2/4/5/12/13/14/66/71	—	B2/4/5	—	—
Protoss-PG46-AU-M		Australia, Latin America, Taiwan(China), New Zealand, etc.	9~48VDC	√	√	√	1	RS485	B40	B1/2/3/4/5/7/8/28	—	B1/2/5/8	—	B2/3/5/8
Protoss-PG46-JP-M		Japan	9~48VDC	√	√	—	1	RS485	B41	B1/3/8/18/19/26	—	B1/6/8/19	—	—

## 1.2. Device Parameters

Table2. Protoss-PG46 Technical Specifications

Item	Parameters
<b>System Information</b>	
Processor/Frequency	320MHz
Flash/SDRAM	16MB/32MB
Operating System	OpenWRT Linux
<b>2G/3G/4G Interface</b>	
Transmit Power	LTE-TDD: Class 3(23dBm+1/-3dB) LTE-FDD: Class 3(23dBm±2dB) WCDMA: Class 3(24dBm+1/-3dB) TD-SCDMA: Class 3(24dBm+1/-3dB) GSM900: Class 4(33dBm±3dB) DCS1800: Class 1(30dBm±3dB) GSM900 8-PSK: Class E2(27dBm±3dB) DCS1800 8-PSK: Class E2(26dBm±3dB)

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