X1/A1/C1

Ethernet Configuratuon

This document briefly describes the Ethernet configuration of X1/A1/C1.

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CONTENT

1 DEFAULT CONFIGURATION

The default Ethernet configuration is as below:

Table1 Default configuration

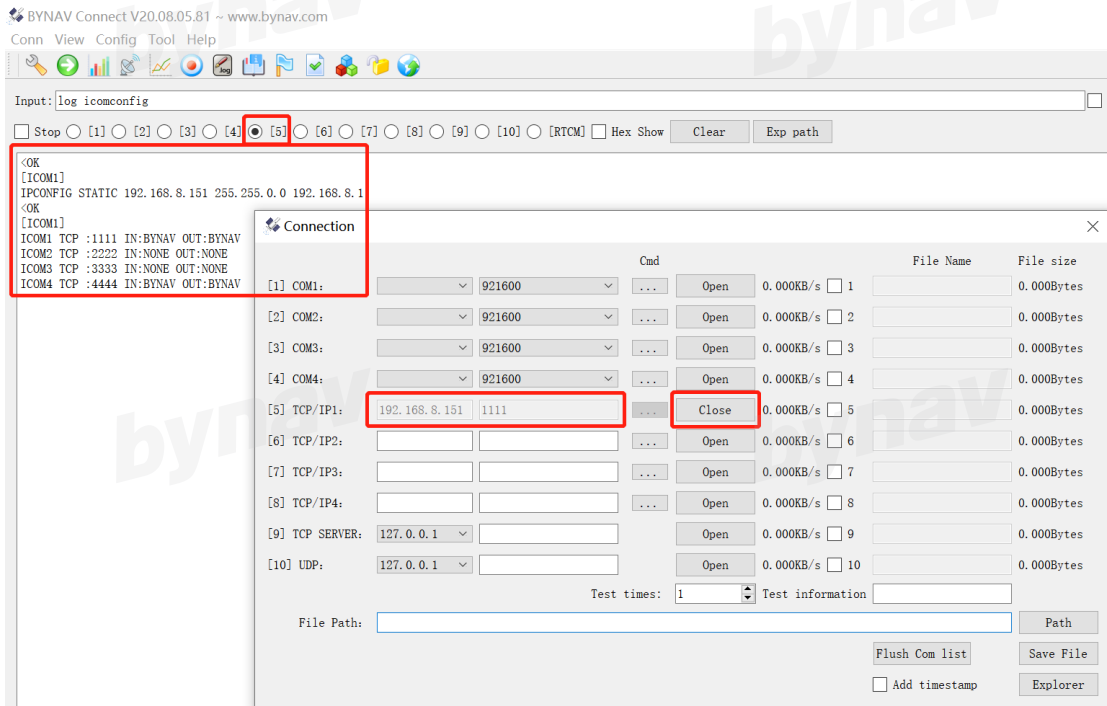| IP		Subnet Mask	Gateway	
192.168.8.151		255.255.0.0	192.168.8.1	
ICOM Ports	**Mode**	**Port Number**	**Input**	**Output**
ICOM1	TCP	1111	BYNAV	BYNAV
ICOM2	TCP	2222	NONE	NONE
ICOM3	TCP	3333	NONE	NONE
ICOM4	TCP	4444	BYNAV	BYNAV
Port	**Output**		**Frequency**	
ICOM4	BESTPOSA		5Hz	
	HEADINGA		5Hz	
	GPGGA		5Hz	
	GPRMC		5Hz	

NTRIP	Connection	NTRIP Protocol	NTRIP IP&Port	NTRIP Mountpoint	User Name	Password	Binding port	Input	Output
NCOM1	DISABLED	V1	--	--	--	--	ALL	Rtcm	Rtcm
NCOM2	DISABLED	V1	--	--	--	--	ALL	None	None

2 ETHERNET CONNECTION

The default IP address of X1/A1/C1 is 192.168.8.151. You need to reset the IP address of the base or rover receiver in order to access to the local network, the steps are as below:

1）Connect the receiver to the computer using a cross-over Ethernet cable. Set the computer IP address to 192.168.8.X, the X can not be the same with the receiver.

2）Open the CONNECT as figure4-1, if the input box becomes grey and can not be entered, it means the Ethernet communication between the receiver and computer is normal. If prompt Open Failure, you need to change computer IP

address to ensure they are in the same network segment.

Figure 1 Ethernet Connection

3 IP Configuration

3.1 Introduction

You can configure static or dynamic TCP/IP parameters using IPCONFIG commands.

3.2 IPCONFIG

Format:

IPCONFIG [InterfaceName] AddressMode [IPAddress [Netmask [Gateway]]]

Example:

IPCONFIG ETHA STATIC 192.168.8.151 255.255.0.0 192.168.8.1

Description:

ID	Example	Format	Description
0	ETHA	InterfaceName	Ethernet interface name (default ETHA)
1	STATIC	AddressMode	DHCP, use dynamic IP address
			STATIC, use static IP address
2	192.168.8.151	IPAddress	IP address (default 192.168.8.151)
3	255.255.0.0	Netmask	Subnet mask (default 255.255.0.0)
4	192.168.8.1	Gateway	Gateway (default 192.168.8.1)

3.3 Query IP Configuration

3.3.1 IPSTATUS

Output the configuration of IP address, subnet mask, gateway and DNS servers.

Format:

LOG Port IPSTATUSA ONCE

Return:

#IPSTATUSA,ICOM4,0,0.0,FINESTEERING,2106,444455.800,00000000,0000,68;1

,ETHA,"192.168.8.130","255.255.0.0","192.168.1.9",0*f276973e

Description:

ID	Field	Description
1	IPSTATUS header	Log header
2	#IPRec	Number of the network interface
3	Interface	Name of the network interface
4	IP Address	IP address
5	Netmask	Subnet mask
6	Gateway	Gateway
7	#DNSServer	DNS server number
8	IP Address	DNS server IP address
9	xxx	32-bitCRC checksum
10	[CR][LF]	Message terminator

3.3.2 IPCONFIG

Output Ethernet configuration

Format:

LOG IPCONFIG ONCE

Return:

IPCONFIG STATIC 192.168.8.151 255.255.0.0 192.168.8.1

Description:

IPCONFIG [AddressMode] [IPAddress] [NetMask] [GateWay]

ID	Example	Format	Description
1	STATIC	AddressMode	DHCP, use dynamic IP address
			STATIC, use static IP address
2	192.168.8.151	IPAddress	IP address (by default 192.168.8.151)
3	255.255.0.0	Netmask	Subnet mask (by default 255.255.0.0)
4	192.168.8.1	Gateway	Gateway (by default 192.168.8.1)

4 ICOM CONFIGURATION

4.1 Introduction

You can disable or enable the Ethernet transmission/application layer, configure the protocol type (TCP/UDP), IP addressa and port number using ICOMCONFIG

First you can configure ICOM work mode using INTERFACEMODE.

➢ INTERFACEMODE ICOM1 RTCM BYNAV

\\ Set ICOM1 input RTCM output BYNAV

（note: RTCM is differential correction data input or output, BYNAV is command input and NMEA output, LOG is debug log output)

4.2 ICOMCONFIG

Configure the Ethernet transport/application layer. (Note: there must be a space between Protocol and Endpoint)

Format:

ICOMCONFIG Port Protocol Endpoint

Example:

ICOMCONFIG ICOM1 TCP :2000

Description:

ID	Example	Format	Description
0	ICOM1	Port	Port number, ICOM1/2/3/4
1	TCP	Protocol	DISABLED: disable Ethernet service
			TCP

			UDP
2	2000	Endpoint	host: port number, If host field is blank, X1 will act as a server to monitor the port number, if not blank, X1 will act as a client to connect actively to the configured address (There must be a blank space between Protocol and Endpoint)

4.2.1 TCP Configuration

● **Set ICOM as TCP server**

➢ ICOMCONFIG ICOM2 TCP :2222   *there must be a space between TCP and ":"

\\ set ICOM2 as TCP server, port number 2222

● **Set ICOM as TCP client**

➢ ICOMCONFIG ICOM2 TCP 192.168.8.123:2222

\\ set ICOM2 as TCP client, can communicate to TCP server IP address 192.168.8.123, port number 2222

4.2.2 UDP Configuration

● **Set ICOM as UDP server**

➢ ICOMCONFIG ICOM2 UDP :2222   *there must be a space between TCP and ":"

\\ set ICOM2 as UDP server, if without IP address, can receive messages from all communications, but only return to the last communication.

● **Set ICOM as UDP client**

➢ ICOMCONFIG ICOM2 UDP 192.168.8.123:2222

\\ set ICOM2 as UDP client, can only communicate to the UDP server with IP address 192.168.8.12, port number 2222

4.3 Query ICOM configuration

Format:

LOG ICOMCONFIG

Return:

ICOM1 TCP :1111 IN:RTCM OUT:RTCM

ICOM2 TCP :2222 IN:NONE OUT:NONE

ICOM3 TCP :3333 IN:NONE OUT:NONE

ICOM4 TCP :4444 IN:BYNAV OUT:BYNAV

Description:

Field	Field Value	Description
Port	ICOM1	Port number
	ICOM2	
	ICOM3	
	ICOM4	
Protocol	DISABLED	Ethernet service disabled
	TCP	TCP
	UDP	UDP
Endpoint	Host:Port	host: port number, If host field is blank, X1 will act as a server to monitor the port number, if not blank, X1 will act as a client to connect actively to the configured address (There must be a blank space between Protocol and Endpoint)

5 NTRIP CONFIGURATION

5.1 Introduction

You can configure the built-in NTRIP to get direct access to network correction data, no need to forward via software.

5.2 NTRIPCONFIG

Format:

NTRIPCONFIG [PORT] [TYPE] [PROTOCOL] [ENDPOINT] [MOUNTPONIT]

[USER NAME] [PASSWORD] [BINDINTERFACE]

Example:

NTRIPCONFIG NCOM1 CLIENT V1 192.168.1.88:8888 NTRIP USER PASSWORD

ALL

Description:

ID	Example	Format	Description

0	NTRIPCONFIG	NTRIPCONFIG	NTRIP port（NCOM1/NCOM2）
1	NCOM1	PORT	NTRIP mode
2	CLIENT	DISABLED	NTRIP protocol（V1/V2）
		SERVER	
		CLIENT	
3	V1	PROTOCOL	NTRIP IP address and port
4	192.168.1.88:8888	ENDPOINT	NTRIP Mount point
5	NTRIP	MOUNTPOINT	Username
6	USER	USER NAME	Password
7	PASSWORD	PASSWORD	Interface, fixed to ALL
8	ALL	BINDINTERFACE	NTRIP port（NCOM1/NCOM2）

5.3 Configure NCOM

Generally use NCOM1, input RTCM and output BYNAV

INTERFACEMODE NCOM1 RTCM BYNAV

Generally configure output GPGGA at 5Hz.

LOG NCOM1 GPGGA ONTIME 0.2

5.4 Query NTRIP Configuration

Output NTRIP configuration.

Format:

LOG NTRIPCONFIG

Return:

NCOM1 CLIENT v1 192.168.1.88:8888 NTRIP BYNAV BYNAV IN:RTCM

OUT:RTCM

NCOM2 DISABLED v1 IN:NONE OUT:NONE

Description:

ID	Example	Format	Description
0	NCOM1	PORT	NTRIP port（NCOM1/NCOM2）
1	CLIENT	DISABLED	NTRIP mode
		SERVER	
		CLIENT	
2	V1	PROTOCOL	NTRIP protocol（V1/V2）

3	192.168.1.88:8888	ENDPOINT	NTRIP IP address and port
4	NTRIP	MOUNTPOINT	NTRIP Mount point
5	BYNAV	USER NAME	Username
6	BYNAV	PASSWORD	Password
7	ALL	BINDINTERFACE	Interface, fixed to ALL