HOPF 7515

HOPF 7515 communication protocol

Supported device types and versions

HOPF 7515 communication protocol communicates with the card Mains Voltage Analysis Board 7515, which is an optional part of GPS system HOPF System 7001. The card 7515 includes the system for measuring and monitoring of the network frequency (between 45 and 65 Hz). The communication is simplex. Data are sent via serial line. These data are sent:

- GPS system time
- network time
- the difference between system and network time
- network frequency
- system time and GPS date (once per minute)

Communication line configuration

- Communication line category: Serial, SerialOverUDP Device Redundant.
- The parameters of SerialOverUDP Device Redundant line are described here.
  Note: You can configure IP address and port of backup device and use the redundant connection of two HOPF servers.
- The parameters of serial line:
  - Baud rate: 9600 Baud
  - Parity: None (none, otherwise according to the setting of the card 7515)
  - Number of data bits: 8
  - Handshaking: none
- The defined parameters are standard. They may be changed by DIP switches on the card 7515).
- Card 7515 directly supports the output to a serial port, or you can use RS422 interface together with RS244/RS232 converter.

Communication station configuration

- The communication protocol HOPF 7515 Mains Voltage Analysis Board (the protocol is described in the instructions of HOPF Large Scale Display 4985).
- The address of station must be 0.

Station protocol parameters

Non

I/O tag configuration

I/O tag types: **Ai, Ci, TiA, TiR, TxtI**.

You can configure the following I/O tags:

Table 1

Address	Type	Meaning
0	all	A system time that is sent in the format hh:mm:ss. Depending on I/O tag type, it contains: • Ai, Ci - system time which is converted into seconds (hh*3600 + mm*60 + ss) • TiA - system time which also contains a current day, month and year • TiR - system time as interval • TxtI - system time as received text
1	all	Network time that is sent in the format hh:mm:ss. This time is calculated from the network frequency (if the frequency is optimal, i.e. 50Hz or 60 Hz, network time is equal to the system one). There are the same rules for both the system time and network time.

2	TiR,TxtI	Difference between the system time and network one.
3	Ai,Ci, TxtI	Network frequency in Hz. Depending on I/O tag type, it contains: • Ai - frequency as a decimal number (e.g. 49.998) • Ci - frequency which is multiplied by 1000 as an integral number (e.g. 49998) • TxtI - frequency in the format *xx,xxx Hz* (e.g. *49,998 Hz*)

7	TiA,TxtI	System time and date that are sent once a minute. Depending on I/O tag type, it contains:
		• TiA - time and date
		• TxtI - a received text in the format SWhhmmssDDMMRRXxyy:
		  • S - status
		  • W - day of a week
		  • hh - hour
		  • mm - minute
		  • ss - second
		  • DD - day of a month
		  • MM - month
		  • RR - year
		  • Xxyy - hours (Xx) and minutes (yy) of time difference (max. +/-12:59) between the sending time and UTC. Bit 4 (in tens of hours (X)) indicates a sign. If it is set, a local time overtakes UTC by the defined time difference, e.g. *8130* -> local time at 1:30 a.m. overtakes UTC, *03 00* -> local time is 3 hours behind UTC.
		
		Meaning of the bit status S:
		
		• bit 1: if 1, announcement hour (the change of winter/summer time will come next)
		• bit 2: if 1, summer time
		• bit 3: if 1, announcement second
		• bit 4: if 1, the time is obtained from GPS; if 0, the time is obtained from an internal source

Literature

- Documentation - www.hopf.com

Changes and modifications

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Document revisions

- Ver. 1.0 - October 21, 2004 - Creating of document

Related pages:

Communication protocols