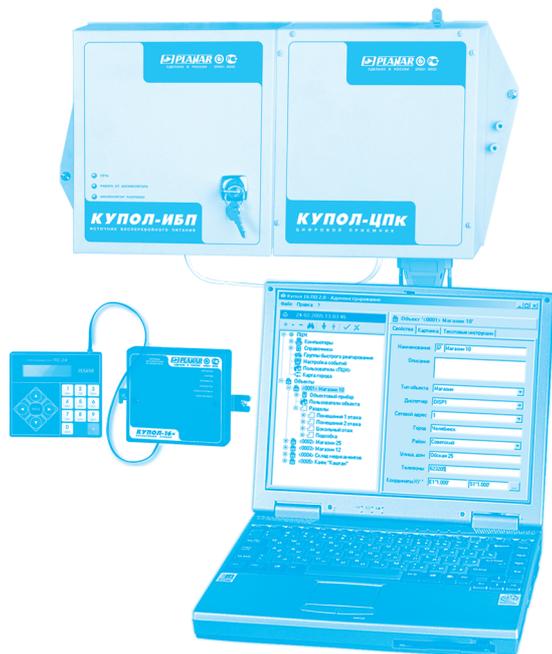


CATV DATA TRANSMIT RADIO SYSTEM «CUPOL»



- OPERATING FREQUENCY:
 - TRANSMITTING EQUIPMENT 11-65 MHz;
 - RECEPTION EQUIPMENT 300-400 MHz.
- GUARDING UP TO 2000 OBJECTS.
- TRANSMITTING OVER 200 NOTIFICATIONS.
- CONTINUOUS COMMUNICATION CHANNEL CONTROL.
- DIGITAL SIGNAL PROCESSING.
- HIGH CLASS PROTECTION OF COMMUNICATION CHANNEL.

«Cupol» radio system of notification transmission over CATV networks (CATV DTRS) is intended for centralized guarding of remote objects, telemetric information collecting, object execution device controlling. CATV DTRS «Cupol» is intended also for managing of the object fire guarding. DTRS «Cupol», being developable and tunable system, allows to ensuree object guard demands in totally.

DTRS «Cupol» equipment features round-clock operation at environment temperature + 5 °C ... + 40 °C (optional - 40 °C ... + 50 °C);

Main DTRS «Cupol» application:

- guarding of commercial offices, warehouse and industrial buildings, shops etc.;
- guarding with help of «alarm» buttons;
- object fire guarding;
- monitoring of water and heat supply systems in industry.

«Cupol» system contains:

I Object equipment:

- control panel «Cupol-4c», «Cupol-16c»;
- programmer PS-24;
- control panel console PS-25;
- back-up power supply «Cupol-BPS»;
- guard, alarm sensors;
- measuring sensors, execution devices (while object monitoring).

II Centralized supervision console (CSC) equipment:

- digital receiver «Cupol-DRC»;
- back-up power supply «Cupol-BPS»;
- IBM compatible computer;
- computer back-up power supply equipment;
- software «Cupol-16SW».

DTRS «Cupol» is a network, which units guarded objects.

Objects are subdivided into:

- objects with uni-directional data transmitting (objects equipped by «Cupol-4c» or «Cupol-16c»);
- CSC objects.

Information transmitting is made in packet mode, the packet length is variable and depends on transmitted information volume. The channel transmission speed is 4800 bps.

While information transmitting, an error coding and data transmission integrity are performed, that allows to provide interference high protection and the protection from unauthorized access to the information. All information entering from guarded objects are subdivided into telemetric and event information.

Telemetric information enters to CSC with programmed period and is used for signal pass checking from a real object and representing its current status.

While event information transmitting, multiple its repetition with programmed period and transmission time spreading over the communication channel by accidental law are performed.

While each exchanging with CSC, all information about the object status is transmitted to provide reliable operating of DTRS «Cupol» while signal missing.

The system operating frequency is defined while the equipment ordering in range 11-65 MHz for transmitting and 300-400 MHz for receiving equipment.

CSC of «Cupol» system is a hardware-software complex based on IBM compatible computer and digital receivers «Cupol-DRc». Digital receivers are made a reception and preprocessing of the signal.

At large number of serviced objects, it is possible the separation them between several operators, at this, CSC is based on several computers united in the local network.

CATV DTRS «CUPOL» TECHNICAL SPECIFICATION

System capacity	up to 2000 objects
System address capacity	up to 4096
Number of transmitted notifications	over 200
Data transmission uni-directional	from objects to CSC
Signal coding while over the channel transmitting	error coding
Communication channel separation method between different objects	accidental access with separation over the time
Operating frequency range, MHz control panel reception equipment	11-65 300-400
Signal modulation type	FM
Operative frequency adjustment range, MHz (with help of built-in software)	±3 from the central frequency
Radio channel quality control	continuous, at each communication seance with objects

CONTROL PANEL TECHNICAL SPECIFICATION

Equipment information capacity (number of GFS zones) «Cupol-4c» «Cupol-16c»	8 16
Equipment informativeness (number of transmitted notifications) total number over	200
Summary resistance of a zone and termination resistor, kOhm	0,5...5
Control panel reaction time while breaking any zones (programmed with time interval 50 msec. for each line individually)	50 msec ... 60 sec
Delay time of alarm notification delivery while breaking any zones (programmed with time interval 1 sec for each zone individually)	1...255 sec
Measuring current in zones, mA, or less	1
Types of supported electronic keys	DALLAS DS199X
Number of execution outputs of them relay switching contact "open" collector type	4 1 3
Number of programmed functions for each output	43
Operating frequency range, MHz	11-65
Signal modulation type	FM
Frequency step setting, kHz	250
Operative frequency adjustment range, MHz	±3 from the central frequency
Modulator emission frequency bandwidth at the level minus 30 dB, kHz, or less	250
Information transmitting period over the communication channel, min (or by object event)	1..255
HF connector type	F
Maximal deviation of control panel modulator frequency, kHz, or less	50
Information transmission time over the communication channel, s, or less	0,3
Operating voltage	+12 V +10% -15%
Control panel dimension, mm, or less	160x130x45
Weight, kg, or less	0,4

CSC EQUIPMENT TECHNICAL SPECIFICATION

«Cupol-DRC» operating frequency range, MHz	300...400
Number of serviced frequency channels	1
Operative frequency adjustment range, MHz	±3
Receiver frequency deviation from nominal value, or less	10×10^{-6}
HF connector type	F
«Cupol-DRC» receiver sensitivity at S/N ratio 12 dB, uV, or less	2,0
«Cupol-DRC» receiver selectivity in adjacent channel at channel difference 250 kHz, not less	70
«Cupol-DRC» receiver selectivity in side receiver channels, dB, not less	80
«Cupol-DRC» intermodulation receiver selectivity, dB, not less	70
Communication channel with computer	RS232
Communication channel exchange speed, bps	19200
Communication protocol with computer	Hayes compatible
Receiver non-volatile memory capacity	up to 500 notifications from objects
Operating voltage	+12 V +10% -15%
«Cupol-DRC» dimension, mm, or less	255x220x70
Weight, kg, or less	1,4