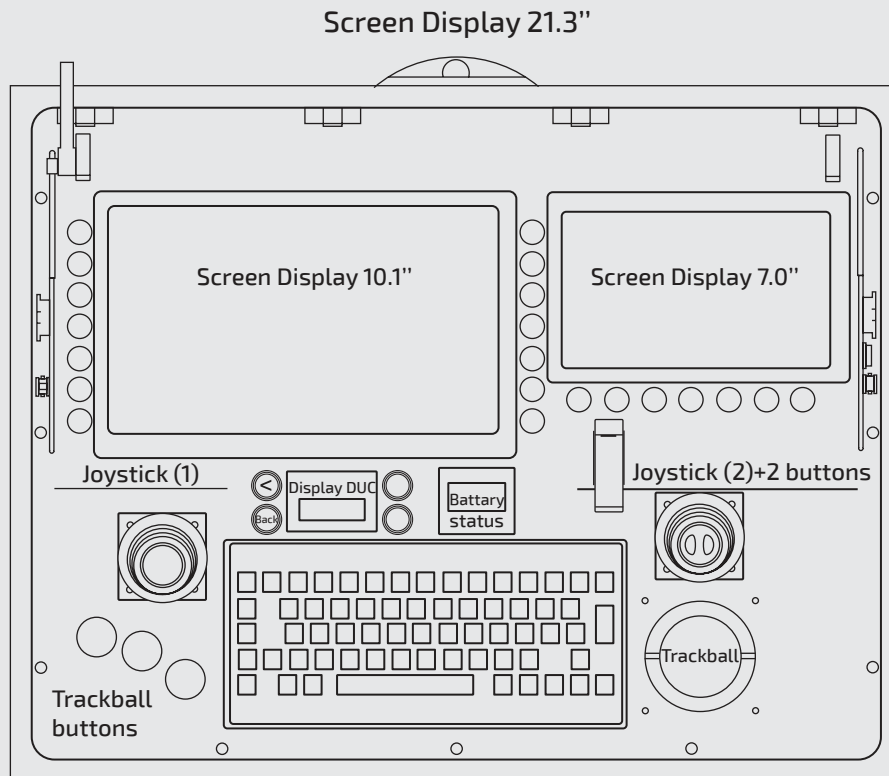# Universal ground control station of the unmanned aerial system

Technical data sheet

System overview

Universal ground control station (GCS) of the unmanned aerial system (UAS) is intended for the unmanned aerial vehicle (UAV) autopilot control, storage and processing of telemetry data; display and record of the video, received from the UAV board.

GCS is developed for being used in the field, has built-in autonomous power supply to UAV's ground transceivers.

Screen Display 21.3"
Screen Display 10.1"
Screen Display 7.0"
Joystick (1)
Display DUC
Battery status
Joystick (2)+2 buttons
Trackball
Trackball buttons

Supply kit content

#	Name	Quantity
1	Ground control station, packed in protected case	1 pcs.
2	Plug-in accumulator battery, Li-Ion	2 pcs.
3	Geodetic tripod with a magnetic connector of GCS	1 pcs.

Key features

- 2 reliable 3-axis joysticks with Hall's sensors
- Moistureproof and compact trackball replaces PC mouse in the field conditions
- Full-fledged waterproof keyboard for data entry
- Multifunctional assignable buttons around the display
- 3 displays contain ultrabright screens with the anti-glare surface and can be switched via software
- Long endurance battery life
- 2 Ethernet ports 48V 100W
- Compact size for comfortable transportation and usage
- A high degree of protection against external factors
- A powerful computer for data processing and real-time video transmission
- Suitable for installing any software
- Tripod with magnetic connectors

Technical specifications

Name	Value
Weight (total with one battery):	22.9 kg
• ground control station	15.0 kg
• plug-in accumulator battery	4.5 kg
• geodetic tripod	3.4 kg
Outer dimensions, mm:	
• ground control station	473 x 160 x 396
• plug-in accumulator battery	360 x 237 x 43
• geodetic tripod	990 x 140 x 140
Run time (expenditures on the outer devises PoE are not considered)	8 hours *
Charging time, total	225 minutes
Input AC power supply (of a charged device)	180..264V 47..63Hz 4A
Characteristic of an in-built power supply PoE	48V 100W
Operating temperature	0 ~ 45°C
Storage temperature	-15 ~ 55°C
Relative humidity, RH	< 90%
Protection level of GCS when closed	IP67
Protection level of GCS when opened	IP52

* The operating time is indicated for a new 100% charged a battery with an ambient temperature of 23°C ± 2°C. In case the temperature is different from the mentioned one and/or battery aging due to its exploitation, the operating time is adjusted in accordance with the reduction of the battery cells capacity specified in the relevant LG Chem LTD ICR18650D1 Li-Ion specification.

Universal ground control station of the unmanned aerial system

The list of units and assemblies that constitute the GCS*

#	Name	Description
1	Major screen	21.3» 4:3 900 кд/м2 UXGA 1600x1200 1400:1 WLED LVDS
2	Computer's screen	10.1» 650 кд/м2 1280x800 800:1 WLED LVDS
3	Additional screen	7.0» 690 кд/м2 1280x800
4	Battery controller screen	1.3» 128x64 OLED
5	Joystick 1	3-axis with Hall's sensors
6	Joystick 2	3-axis with Hall's sensors and two buttons
7	Dzus-82 set	
8	DUC (Scaler / Cross-converter)	6G SDI + SDI Loop / HDMI + HDMI Loop
9	SBC (single-board computer)	- Intel Core i5-4300U, 2xHDMI, LVDS, RS232, RS485, 4xUSB 3.0, 2xUSB 2.0
10	/------/	- 8GB DDR3L-1600 SODIMM
11	/------/	- mSATA SSD 250GB
12	/------/	- mPCIE WiFi/W
13	Trackball	Laser 50mm with 3 separate buttons
14	Keyboard	Digital 64-button
15	Plug-in accumulator battery	Li-Ion 6S11P 24V
16	Battery management system (BMS)	Вбудоване побаночне балансування
17	Power controller	Battery charging current, discharge current, operating time, voltage, power, ventilation
18	Joystick and buttons controller	Two 3-axis joysticks, 30 buttons, USB
19	Charger 220V 10A	In-built CC/CV
20	DC/DC modulator 24V	Buck 12V 20A
21	DC/DC modulator 24V	Buck 5V 10A
22	DC/DC modulator 24V	48V 5A Step Up
23	Connector (port) Ethernet.	RJ-45 with injector 48V POE
24	Connector (port) external	HDMI Out, SDI Out, USB 3.0 x 2, 24V, 220V In
25	Screen fans	Vapo (MagLev) Blower 60x60x15 5 pcs.
26	Boxed fan	Vapo (MagLev) 60x60x15 1 pcs.
27	Case	Case 470x360x196 with protection level IP68, 5.0 kg

* The units and assemblies may be replaced by the supplier to any other units with the relevant technical characteristics without prior notice.

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