

FOREIGN COMPONENTS IN WEAPONS

that are delivered to the Russian Federation in violation or circumvention of sanctions¹

from People's Republic of China: 47 Manufacturers + for 3 components is Manufacturer not specified

- High-speed bus interface CAN SCM 3425ASA F8 AT MEGA 64 *for UAV-kamikaze Shahed-136 of Russian production*; Peretvoryuvach struma MORNSUN IB0503LS-1WR3 *for T-72B3 tank*; Current converter MORNSUN IB0512LS-1WR3; Current converter MORNSUN URB 2405LD-20WR3, URB 2412LD-20WR3 *for T-72B3 tank* (Manufacturer: **Mornsun**);
- P-channel MOS transistor F5210S, RP825Y, WR *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"* (Manufacturer: **INCHANGE Semiconductor**);
- 16-bit processor C188EAC20 *for Portable radio station R-392, code "Peanuts"* (Manufacturer: **JinYang Electronics Technology Limited**);
- Transistor 2T716B1 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Xiamen Weigao Communication Electronic Technology Co., Ltd.**);
- Current converter 99Z15HV 75933 *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; P-channel 60 V (DS) MOSFET FR5305 *for 3M-14 type cruise missile of the Kalibr missile complex* (Manufacturer: **VBsemi Electronics Co., Ltd**);
- Electric brushless cardan motors iFlight iPower GM5208-12 та GM3506 *for UAV "Supercam-S350"* (Manufacturer: **IFlight iPower**);
- Cellular communication module SIM800C; GSM/GPS module SIM300Z S2-1019H-A0030 *for UAV "Orlan-10"* (Manufacturer: **SIMCom Wireless Solution**);
- Electronic compass sensor module 1PCS LSM303DLH.5SRK HM55 123 ML T *for Granat-3 UAV* (Manufacturer: **Deyuan Technology**);
- electric motor Scorpion SII-4025-440KV 2000W 7S *for UAV "Supercam-S350"* (Manufacturer: **Scorpion Power System Ltd**);
- Battery *for Granat-3 UAV* (Manufacturer: **TCBWOR TH Battery Company**);
- ARM microcontroller LPC1768FBD100K *for UAV "Supercam-S350"* (Manufacturer: **Real Support Electronic Co., Ltd.**);
- Signal relay HFD4/12-LS; Signal relay HFD4/12-LS HFD4/12-LS; Signal relay for switching signals HFD4/12-LS XTO221 *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"* (Manufacturer: **Xiamen Hongfa Electroacoustic Co., Ltd.**);
- Control board FPGA Xilinx SPARTAN-6 *for Automated station for placing obstacles ASP R-330Zh "Zhitel"* (Manufacturer: **Alinx Electronic Technology**);
- Ultra-fast plastic straightener on B 06 B 310; Ultra-fast plastic straightener on 730 U1D *for Strategic aviation cruise missile of the X-101 type* (Manufacturer: **Yea Shin Technology Co., Ltd**);
- Impulse controller LTCYM, 9F19 e3 *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"* (Manufacturer: **Poccio Electronics Co., Ltd**);
- LM317/E-Tech Electronics LTD *for UAV "Mohajer-6"* (Manufacturer: **E-Tech Electronics LTD**);
- Bipolar transistor F5210S *for Automated station for placing obstacles ASP R-330Zh "Zhitel"* (Manufacturer: **All irf, Infineon Isc**);
- Bucket stretchers (orthopedic) YDC-4A/4B *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **Jiangsu Rixin Medical Equipment Co., Ltd.**);

¹ Source: The database of sanctions that were imposed after Russia's attack on Ukraine. The National Agency on Corruption Prevention / Ukraine. <https://sanctions.nazk.gov.ua/en/>

- Linear voltage regulator 78M12 for UAV "Mohajer-6"; Microcircuit V237YA 817B for Aviation strategic cruise missile Kh-101 (Manufacturer: **Kexin**);
- Electrolytic capacitor 16V 330μF for UAV "Mohajer-6"; Electrolytic capacitor 16V 330μF for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Man Yue Technology Holdings Limited**);
- Fuse for UAV "Mohajer-6" (Manufacturer: **Cloukeu**);
- 74HC373A for UAV "Mohajer-6"; Shift register with serial input, parallel output 74HC1640; microcircuit 74HC164D; Analog jumper 74HCT4066D AR 589 08, UnG05 16E for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1" (Manufacturer: **Nexperia**);
- Spark plugs Torch for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Zhuzhou Torch Spark Plug**);
- Switches KN3C-202, LED indicators for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Daier Electron**);
- Network module 1000BASE-T for Autonomous signaling system "Radio Barrier"; Transformer PULSE HX0068ANL for UAV Takhion; Ethernet module PULSE HX1188NI 1231-C; Ethernet module PULSE HX1188 X for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; n/a Pulse HX1188NL 1346-PPCHINA for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; Ethernet transformer HX0068ANL; Pulse signal transformer HX0068ANL 1348-M for Granat-3 UAV; Transformer PULSE HX1188 for UAV "Orlan-10"; Telecommunication transformer H1102NL 1438-PP; Line interface module PULSE TM1062DVB2 1514-C CHINA; Line interface module PULSE TM1062DSB2 1443-C CHINA for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Pulse Electronics Corporation**);
- Cylinder assembly for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **ZOMAX Group**);
- DAS1575R1602H4 DOLIN01 for UAV "Zala 421-16E" (Manufacturer: **GLEAD Electronics**);
- Shrinkable tubes for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Shenzhen Woer Heat-shrinkable material**);
- Electrolytic capacitors VENT 35V 1000μF for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Jiaweicheng electronics**);
- MEMS gyroscope ER-MGZ-2067 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **ERICCO INERTIAL SYSTEM**);
- Antenna cable for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Horng Jih Cable Wire Enterprise Co Ltd**);
- Electrolytic capacitor 16V 330μF for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Yiyang Anxing Electronics Co., Ltd (AXBOOM)**);
- Operational amplifier BB OPA 234UA 82N8H for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **International standard**);
- Voltage regulator GH17P for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Evatronix (HK) Electronics Trade Inc**);
- Radial aluminum electrolytic capacitor with lead – JRB JRB1J470M02500630120000B for UAV Shahed-136 (Geran-2, 157 components); Capacitor JRB for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **JB Capacitors Company**);
- Hemisphere Phantom P34 OEM 10Hz RTK board. High-precision GNSS board module GPS receiver L1 L2 L5 BDs Glonass Galileo Unistrong GH17P for UAV Shahed-136 (Geran-2, 157 components); Navigation module UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **Jinyushi (People's Republic of China), Hemisphere (US headquarters)**);

- 32-bit microcontroller with ARM architecture on the Cortex-M4 core (F3xx series) RM F350K8 C017415 PJ2148 GD ARM for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **GigaDevice**);
- Transistor Wayon B60P03A 3003 AQK for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **Hongfa Technology**);
- Servomotor KST X30-12-165 for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **KST Brushless Motor**);
- High-speed transceiver SCM3425ASA, High-speed bus interface CAN SCM 3425ASA F0, Microcircuit RS64 E12129 SDH for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **Mornsun**);
- Electrical connector CONNFLY 48MabcR Mm08, Electrical connector CONNFLY 48MabcR Mm08 for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **CONNFLY**);
- Transistor Wayon B60P03A 3003 AQK, Transistor Wayon 060N10HS 4802 TYJ, Transistor Wayon WMM028N10HGD 0901 LYK, Schottky diode 2207 MBR3045CTS for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **Wayon Electronics Co., Ltd**);
- Individual RF isolator with coaxial isolator for The Silok-01 electronic warfare (EW) system (Manufacturer: **UIY Inc**);
- Hytera tangent SM18N2 for AR-2C "Arakhis" radio station (Manufacturer: **Hytera**);
- 70 MHz bandpass filter AE5528H-70; 100 MHz bandpass filter AE5528H-100 for Portable satellite communication station P-438-N (Manufacturer: **AEC**);
- Magnetic field sensor QMC5883 for UAV "Zala 421-16E" (Manufacturer: **QST Corporation**);
- Microcircuit of a rectifier with a Schottky barrier PS54356 OCT CHGK; Microcircuit of a rectifier with a Schottky barrier PS564357 29T AYVK for Strategic aviation cruise missile of the X-101 type (Manufacturer: **Chongqing Pingwei Enterprise co., Ltd**);
- Pulse voltage regulator 300kHz (DXSWYDRc4); Schottky rectifier/diode (MBR20100CS); Aluminum electrolytic capacitor (SMD 220 мкФ 50 В) for The Silok-01 electronic warfare (EW) system (Manufacturer: **not specified**);

from U.S.: 134 Manufacturers + for 2 components is Manufacturer not specified

– FPGA ALTERA Cyclone®II EP2C8Q208I8N K BBD9Y1801A (VDDSY696213 NSKA8COC) for Inertial measuring unit of the 9M544 MLRS Tornado-S rocket; Programmable gate matrix Altera Cyclone V 5CEFA7F2317N FBBGAU2231A, Memory card EPCQ64A 2147 for Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna); Programmable valve matrix Altera Cyclone V 5CEFA7F2317N FBBGAU2231A, Memory card with 67,108, 864 bits EPCQ64A for UAV-kamikaze Shahed-136 of Russian production; CPLD-Complex Programmable Logic Device CPLD –256MC 10NS 208RQFP ALTERA® MAX® EPM7256SRI208-10N W BDG241743A; An integrated circuit with a built-in complex programmable logic device EPM7256SRI208-10N for X-47M2 "Kinzhal"; Processor EP4CGX110DF31I7N, Microcircuit EPCS64N 9911E V5; Processor EP1K50QI208-2NQ; Memory management module EPC2LI20 U HAF481613A; Processor EPF10K30EQI208-2N Q for 3M-14 type cruise missile of the Kalibr missile complex; Integrated circuit ALTERA Cyclone V 5CEFA7F2317N F BBGAU2201 A for Autonomous signaling system "Radio Barrier"; Microcircuit FLEX EPF10K30AQ1240-3N S HCA511213A, Microcircuit ALTERA Cyclone EP1C3T14417N L HCE951049A; Microcircuit MAX EPM7160STI100-10N W HDC241281A VDC24842215 3N2WAQOL for Missile type 9M727 of the Iskander-K operational-tactical missile system; microcircuit XC4036XLA HQ208AKP0723 F2368107A, 09I for Operational-tactical missile complex "Iskander-K"; We program a logic integrated circuit EP1C4F32417N for Automated radio jamming station R-330 BMW; Microcircuit EPC2TC32N for Army self-propelled

gun 2S5M "Hyacinth-S"; Programmable gate array (PLA) FPGA ALTERA Cyclone IV EP4CE55U1917N C CCBA1343A COREA for Granat-3 UAV; Programmable logic integrated circuit Altera Flex EPF10K30RI208-4N U DBA 561043A; Programmable logic integrated circuit Altera Flex EPF10K30RI240-4 U DCA 560613A; Programmable logic integrated circuit Altera Flex EPF10K30ATI144-3 N HCA 51130; Programmable logic integrated circuit Altera Flex EPF10K10QI208-4N U BBA561107A; Memory block EPC2L120 UNAF481219A; ALTERA microprocessor MAX EPM7128SQ100-10N; Microcircuit EPM7256RI208-10N for UAV "Kartograph"; Processor 35M240BD01; Processor (programmable gate array) ALTERA Cyclone IV EP 4C6X110DF3117N G CAAA F1901E; Programmable gate matrix ALTERA FLEX EPF10K30EQI208-2N Q DAE581731A; Programmable logistic integrated circuit ALTERA EPC2LI20 U HAF481613A; Programmable logistic integrated circuit ALTERA Cyclone IV EP4CGX110DF3117N G CAAAF1901E KOREA; Programmable logistic integrated circuit EPCS64N G012W VS CHN839; We program a logical integrated circuit ALTERA ACEXTM EP1K50QI208-2 Q CBD581707A for 3M-14 type cruise missile of the Kalibr missile complex; Processor ALTERA Stratix II EP2S15F48414N K CBB9V1725A KOREA for Corsair UAV; Microcircuit (processor) ALTERA MAX II EPM1270714415N N BAQ9M1325A; Microcircuit (processor) 35M240BD01 for Aviation strategic cruise missile Kh-101; High performance programmable logic device ALTERA Cyclone II EP2C35F67218N K CBD9Y1425U KOREA VBD9Y62912 3R1KU41OD; Processor ALTERA Stratix EP1S25F102016 L CEA901419A; Processor ALTERA MAX EPM7128SQI100-10N HEU 241213A VE124843083 3N2WA200M; Processor (programmed gate array) ALTERA Cyclone EP1C12F324I7N L BCD9S1503A MALAYSIA VCD9S23706 3P3LA5E0K; Processor (programmed gate array) ALTERA Cyclone EP1C12F324I7N L BCD9S1507A MALAYSIA VCD9S88372 3P3LA5Y0K; integrated circuit EPC54N 9501X; Highly productive programming logic (PLD) based on CMOS ALTERA ERM3064A TI44-10N S BCB77 1503A for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Altera Corporation**);

- Divider / sumator 113A AXF; Divider / sumator 113B AXG for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Merrimac Industries Inc.**);

- Transceiver B1334-A2 3344J1A CTITW for Granat-3 UAV (Manufacturer: **Standard Microsystems**);

- Transceiver SMSC 8710A-EZK for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **SMC Corporation**);

- Microcircuit 336 E 60523 for Aviation strategic cruise missile Kh-101 (Manufacturer: **Molex Electronics Ltd.**);

- Power connector JST J-1100 for UAV "Orlan-10" (Manufacturer: **JST**);

- Memory module 3D plus FN64G08VB1388 MB 1611 0053 for Corsair UAV (Manufacturer: **3D plus**);

- 5th generation intelligent module SX-5 S2737E 01 R77705PY 1950 N TWN; Unidentified 12000080 NAH 2144+ for Unmanned aerial vehicle "Shahed-136" (GERAN-2) (Manufacturer: **Silex technology America, inc.**);

- Inductor FP3-4R7-1034 for UAV "Kartograph" (Manufacturer: **Eaton-Electronics**);

- Microcircuit IqAPI TxDAC® 9764ARUZ #1626 for Inertial measuring unit of the 9M544 MLRS Tornado-S rocket; 14-bit digital-to-analog converter TxDAC+ AD9789BBC2, DS+ 2431, RF driver amplifier ADL 5321, Signal generator module ADF 4351, F4106 BRUZ, max3378eeud, LTM8055Y, AD9517-3, ADC AD9361, a transceiver with a serial port ADM3315EA, Digital Synthesizer (DDS) ADF4351BCPZ, Amplifiers 8367 AROZ/8345 AREZ, Dual digital to analog converter AD9765, and Voltage converter ADP5054ACPZ for UAV "Mohajer-6"; Precision 16-bit digital SPI temperature sensor ADT7310, Clock frequency generator with 12 outputs and blown VCO 1,6 ГГц AD9517-4ABCPZ #2209 5713746.1, 14-bit high-speed digital-to-analog converter TxDAC+AD 9755 AST #2135 for Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna); 2-channel interface device RS-232/V.23 ADM 3202A

#127 for *Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS*; Clock frequency generator with 12 outputs and built-in VCO 2,0 ГГц AD9517-3 (ABCPZ #2046 5111540.1) and 2×2 RF transceiver with built-in 12-bit DAC and ADC AD9361BBCZ #2121 5357097.1, Accelerometer ADXL3578 #2133 458609, Micropower precision reference voltage source REF195, Microcircuits: ADM3232EARWZ #1822 4251668.1 for *UAV Shahed-136 (Geran-2, 157 components)*; Accurate 16 digit digital SPI temperature sensor ADT7310, Clock generator with 12 outputs and 1.6 GHz injected VCO AD9517-4ABCPZ, 14-bit high-speed digital-to-analog converter TxDAC+AD 9755, Low-power receiver/transmitter RS-232 ADM 3202A #217 for *UAV-kamikaze Shahed-136 of Russian production*; Video decoder ADV 7180W #2129 619437 1ADC 10Bit Automotive 40Pin LFCSP EP T/R, High-speed SD/HD video encoder 3 video 2.7/3.3V 10-bit DACs that support composite (CVBS), S-video (YC) or component (YPrPb/RGB) analog outputs in SD / HD video formats ADV 7391BCPZ #0752 13454901; Low-power stereo audio codec 48 kHz stereo recording, playback at 35 mW from a 3.3 V analog power supply. Stereo audio ADC and DAC support sampling rates from 8 kHz to 96 kHz, as well as a digital volume control. ADAU 1961WB #2225 5847236 PHIL, High Performance RF Agile Transceiver 1x1 RF transceiver with integrated 12-bit DAC/ADC AD 9364BBCZ #2116 5311566, Chip 1755 ADJ #215 72108, Accelerometer XL 326B #2203 2283F for *UAV "Lancet"*; 16-bit analog-to-digital converter AD 977A ARZ #1909; Broadband operational amplifier with high output power DAC842 #1549 2759301, Analog switches, multiplexers ADG509F8 #1333 26900281, and Analog switches, multiplexers ADG409BR #1346 7493301, Amplifier ADUM1300 BRWZ #1106 2054259.1, Amplifier REF192 F#432 3502, and Amplifier OP1776 #1426 4700, Integrated circuit ADUM1300 BRWZ #1106 2054259.1; Integrated circuit ADG509AK #1408, Integrated circuit OP484E #1341 265149; 0 MSPS 100 MSPS 3V A/D converter AD9283 BRSZ-50 #1748 40746226; Transceiver, Uzhivl, B = 3.0...5.5, Max. Swiss per, kbit/c = 460, Texp, °C = -40...+85, Input type interf. = Full Duplex ADM3202 ARNZ #1914, 3GHz Surface Mount Frequency Synthesizer -40°C ~ 85°C 1899/12/30 2:01:00 16-TSSOP Clock/Frequency (RF) Synthesizer 2.7V ~ 5.5V ADF 4112 BRUZ; 12-bit serial DACPORT AD7243BR; 12-bit analog-to-digital converter AD7450BRZ; Integrated circuit 8138A; 3-channel digital isolator ADUM1301 CRWZ; Three-channel digital isolator ADUM1300 BRWZ #1333 2677991.1*; Three-channel digital isolator ADUM1300 C #1344 2736425.1*; Component ADG 1409Y #326; Component ADR43I B#233 3826; Component ADR01B #599 5958; Component AMPO3G #1345 P44242; Component ADT 7310 TRZ; 4/8-channel high-performance analog multiplexer ADG409BR #1346; 24-bit high-precision ADC with high bandwidth AD7734 B#1347 2749122.1 for *X-47M2 "Kinzhal"*; a single-chip microcomputer optimized for digital signal processing AD9218BSTZ-105; Transistor 8138A; Microcontroller AD8016ARP; Microcircuit AD7450; Microcircuit AD7243BR; Microcircuit REF195; Transistor LT1185IT; Microcircuit AD780; Microcircuit OP276; Microcircuit AD7243; IC ADC driver 8138A #2040; Transformer AD9218 BSTZ-105 #2015; Digital analog converter AD8016ARP; Integrated circuit AD7243BR; Integrated circuit AD7450 BRZ; Microcircuit AD7243 for *3M-14 type cruise missile of the Kalibr missile complex*; Transceiver MAX3221 EUE, Transceiver ADM3202 ARNZ, Transceiver AD9361; Linear CMOS regulator with low drop AD1755 ADJ, 10-bit video decoder ADV7180 #2201 5632902, Linear CMOS regulator with low drop AD1755 ADJ, 10-bit video decoder ADV7180 #2201 5632902, for *Autonomous signaling system "Radio Barrier"*; Microcircuit ADM 3491AR 0736 for *Electronic computer "BAGET-43"*; Microcircuit (Blackfin processor with a clock frequency of up to 600 MHz) ADSP-BF534 BBCZ-4A 3556784.1 0.3 #1630 SINGAPORE; Microcircuit (intermediate frequency subsystem of the low-power receiver/ARU/RSSI 3 Volts, works at input frequencies up to 500 MHz and IF from 400 kHz to 12 MHz) AD607 764 643440; Microcircuit (8-pole precision active filter with a fixed frequency at a user-specified corner frequency in the range from 1 Hz to 100 kHz, operating range: from ± 5 to ± 18 V DC, operation at temperatures from 0 to + 70°C) D68; Microcircuit (ultra-low power operational amplifier with Rail-to-Rail output, unipolar power supply from 2.7 to 12 Volts, low elimination voltage of 1.5

mV, operating temperature range -40...+85 °C) OP 481 #714 3774073; Microcircuit (operational amplifier with unipolar power supply, power supply from +1.7 to ±18 Volts, operating temperature range: -40...+125 °C) OP293E #1840 6480; Microcircuit (four-channel amplifier with unipolar power supply, works with voltage from 2.7 to 12 Volts) OP481 G 714 3774073; Microcircuit (four-channel amplifier with unipolar power supply, works with voltage from 2.7 to 12 Volts) OP481G M1645; Microcircuit (four-channel amplifier with unipolar power supply, works with voltage from 2.7 to 12 Volts) OP481 #407 28123; Microcircuit (operational amplifier with unipolar power supply, power supply from +1.7 to ±18 Volts, operating temperature range: -40...+125 °C) OP293E #1615 62548; XL chip (3-axis accelerometer with signal-converting voltage outputs, measures acceleration with a minimum full-scale range of ±3g, measures free-fall static acceleration in tilt-sensing applications, as well as dynamic acceleration due to motion, shock, or vibration, supply voltage of 1.8 V to 3.6 V) 330K #1623 8875P *for Complex 1K144-E "Sectant"*; Transistor ADUM1301; Microcircuit ADM211 *for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Miniature analog-digital converter (AD5681) *for The Silok-01 electronic warfare (EW) system*; Analog-digital converter (AD 7864AS-2); Digital signal processor (ADSP-2187L); Signal processor (ADSP-2189M BSTZ-266); Charge controller (ADM705) *for Portable satellite communications station R-438-M "Belozher"*; Digital attenuator (HMC624A); 8-bit DAC (AD7305); Operational amplifier (AD8032); Operational amplifier (ADA4665-2); Power detector (AD8361); Signal gain and phase detector (AD8302); DC/DC converter (LT8640S); ADC (AD9226); GOAT (AD9717); GOAT (AD5348); Electronic identifier (DS2401); SPDT switch (544AE); Quadrature modulator (AD8345); Digital attenuator (HMC624A); One-channel synthesizer with PLL (AD8345); DDS synthesizer (AD9912) *for AR-2C "Arakhis" radio station*; Analog-digital converter AD 7864AS-2; Multiplexer AD607; Broadband synthesizer with built-in VCO ADF4350; Broadband synthesizer with built-in VCO ADF4360-9; Clock generator ADF4360-9; Digital-analog converter AD9717; RS485/RS422 µModule Transceiver LTM2882V-3; Dual Isolated RS232 µModule Transceiver LTM2881V-3; Quadrature generator 3J 5598 N1172; Digital-analog converter AD9958; Signal processor ADPS 2191-M BSTZ-140 3032467.1 -1.0; Signal processor ADPS 2189-M BSTZ-266 2986781.1 -1.0; ADC AD73311 *for Portable satellite communication station P-438-N*; DC/DC controller LTC3735EG; DC/DC controller LT1537CG; Built-in processor ADSP-TS201S; Radio frequency mixer AD 6636 CBCZ; Analog-digital converter AD 9461 BSVZ; Integrated microcircuit AD 9511 BCPZ; Synchronous regulator 640 MY LTC3414 EFE *for Automated radio jamming station R-330 BMW*; Gyroscope; Microcircuit ADAU1961; Microcircuit ADV7180; Microcircuit; Microcircuit ADM3315EA; Temperature sensor TMP36GZ; Microcircuit ADM3202 *for UAV "Zala 421-16E"*; Processor ADSP-BF534; Microcircuit ADM3202 *for UAV Takhion*; Chip ADM3222 *for UAV "Eleron-3SV" and for UAV "E95M" air target type (No. 816)*; 8-Bit Microcontroller ADUC831BS; operational amplifiers QUAD, LOW PWR RAIL/RAIL OP AMP *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"*; 8-Bit Microcontroller ADuC8xx 8052 CISC 62KB Flash 3.3V/5V 52-Pin MQFP. Microconverter, 12-bit ADCs and DACs with built-in 62KB Flash MCU. Analog Devices ADUC831BS; operational amplifiers QUAD, LOW PWR RAIL/RAIL OP AMP Analog Devices AD8544 *for ZSA-T "Linza" No. Z87539490M0000034*; Microcircuit ADSP-2181; Microcircuit ADUM1400, and Microcircuit MAX211EEA1 *for Army self-propelled gun 2S5M "Hyacinth-S"*; Digital-analog converter DACS68171 TI 853 PF 12 G4 *for Automated station for placing obstacles ASP R-330Zh "Zhitel"*; Microcircuit AD8402; Microcircuit AD73311; Microprocessor ADSP-2186M *for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"*; Microcircuit MAXIM MAX3233EEWP 1014 + *for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"*; Low-voltage two-channel single-pole switch for two directions ADG736 SAB; ADC driver AD8138A 8138A; Radio signal power detector AD8361 J 3A; Digital potentiometer AD8400 A10; Digital potentiometer AD8400 AD8400; Signal processor ADSP-2185M BSTZ-266; Signal processor

ADSP-BF533; Signal processor ADSP-21364; microphone amplifier SSM2167 B 11; Multiplexer ADG704 S 9B; LDO stabilizer ADP3335 L FC; LDO stabilizer ADP3335 ADP3335 L FC; Subsystem for digitization frequency converter AD9874 AD9874ABST; Logarithmic detector AD8313 J 1A; ADG736 two-channel switch S AB; Sigma-delta codec AD74111 74111; Quadrature digital converter AD9957 AD9957BSVZ; Single-channel synthesizer ADF4110 ADF 4110B; Single-channel synthesizer ADF 4110B; AD9958 direct digital synthesis synthesizer AD9958 BCPZ; Direct Digital Synthesizer AD9958 BCPZ 1923 807592.1, SINGAPORE; Absorbing (matched) wrench with shunt supports 50 ADG918 W 4B; Digital Signal Processor ANALOG DEVICES ADSP-2185M BSTZ-266, 4600183.1-21; microcontroller ANALOG DEVICES ADSI 5BBC1 4567045.1 0.6 1917 SINGAPORE; Memory controller ANALOG DEVICES ADSP-21384, BBCZ 1AA, 4537812.1 0.5 1612 SINGAPORE; Memory controller ANALOG DEVICES ADSP-BF512 BBCZ – 3 4457343.1 0.2 Analogue extensions AD9874ABST 1936 4G91937.1 *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; Operational amplifier AD822 AR718 60069; microcircuit AD820 AR 732 7118; microcircuit OP27 G0711 P544; A single-chip microcomputer optimized for digital signal processing (DSP) and other high-speed numerical processing applications *for Portable VHF radio station R-168-5UN-2*; High speed linear driver/receiver ADM232AA 1246, 2501070; Frequency synthesizer ADF 4110B 323; Microcomputer ADSP2185L *for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"*; Four-channel multiplexer ADG774BR; Voltage controller ADM708RARZ; Voltage controller ADM706TARZ; microcircuit 1201BRZ 16464; microcircuit ADUM1400 CRWZ №1914; microcircuit ADM3202 ARNZ; microcircuit AD1100A R№803 112708; microcircuit AD7818 ARZ №918; Integrated microcircuit AD2S80AUD; Analog-digital converter AD7891ASZ-1; CMOS transistor ADG436BR; Controller of digital signals ADSP-2191M BSTZ-140; Differential data transmitter ADM3491ARZ *for T-72B3 tank*; programmable digital gyro sensor ADIS16265; Two-axis accelerometer with an interface ADIS16006 SPI; Blackfin processor with CAN connection for automotive and industrial applications Analog devices ADSP-BF534 BBCZ-4A; Monolithic two-channel analog-digital converter AD9251[33] BCPZ-65 #1402 2786311.1; Amplifier with variable gain, digital control 8369 ARUZ #336; Digital-analog converter TxDAC AD9717 BCPZ #1330 2672176.1 *for Granat-3 UAV*; 8-channel 12-bit data acquisition system with the possibility of choosing a parallel or serial interface structure AD7891; high-speed, low-power 12-bit analog-to-digital converter that operates from a single 5V power supply AD7892; analog-to-digital converter AD9243ASZ; 512K x 8-Bit/256K x 16-Bit CMOS 5.0 Volt-only Boot Sector Flash memory AM29F400BB-90EI-4; microcomputer optimized for digital signal processing (DSP) and other high-speed numerical processing applications ADSP-2183; programmable 32-bit general-purpose DSP ADSP-21065L; Microcircuit ADF4112BRUZ; Microcircuit DAC8420E; Microcircuit AD977AARZ; Chip AD8561; Chip REF192 *for UAV "Kartograph"*; Processor (ADSP-2101); Integrated radio frequency transceiver with surveillance path (ADS9); Operational amplifier (AD822A); Low-voltage temperature sensor (TMP36G); Power amplifier (SSH2211); Power amplifier (SSH2211) *for Portable radio station R-392, code "Peanuts"*; 2 × 2 RF transceiver with built-in 12-bit DAC and ADC AD9361BBCZ (#2121 5387097.1); Clock generator with 12 outputs and built-in 2.0 GHz VCO AD9517-3 9 (ABCPZ #2046 5111540.1); 800-1000MHz GaAs InGaP HBT Medium Power MMIC Amplifier adesi1517 450Q161 SSHF; 1755 Low Dropout Linear CMOS Regulators (ADJ #117 330290; 16-bit analog-to-digital converter (AIPI) 7689 (BCPZ #1727 8025); Output voltage/current driver with output signal range 8231 ACPZ #1748 67812 *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Analog Devices signal processor ADSP-BF537 BBCZ-5B 3811412.1 0.3; Operational amplifier AD823A #1652 9515; Quadrature digital converter with frequency increase Analog Devices AD9957BSVZ 3774481.1 #1712 *for 170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (IJI2.209.029)*; Four-channel 2.5 kV isolators with a built-in DC-DC converter ADUM 5404 CRWZ #0931 1670885.1 *for Corsair UAV*; Universal transceiver chip AD9361; Processor ADSP-BF561; Voltage conversion module THN 30-1212 Gyroscope ADIS16488BMLZ *for UAV "Orlan-10"*; Microcircuit (dual 12-bit DAC-PORT) AD7247AAR

1306 2547465.1; Microcircuit (RON SPST switch) ADG453BR #1231 2422507.1; Microcircuit (double input amplifier on field-effect transistors at 17 MHz) AD823A #1303 8264; Microcircuit (8-channel analog multiplexer with fail-safe protection) ADG508FB #1332 2676700.1; Microcircuit ADM485 (+5 V low-power receiver) ARZ 3407 *for Aviation strategic cruise missile Kh-101*; Microchip ADV7180 BSTZ; Digital-analog converter SMCADV7123; Triple high-speed digital-to-analog converter on one monolithic chip ADV7123KSTZ140 1416; SWID-coded two-channel interface component RS232/V.28 ADM322121 ARUZ 1345; Integrated circuit, as recognized for duplex communication MAXIM MAX1480AEPI 1052; Analog - digital 12 bit converter AD2S90 APZ 0834 1503712.1; Programmable sinusoidal generator AD2899A 1103 AF76172; Dual low-power video amplifier AD828A #1140 36156; Video codec ANALOG DEVICES ADV212BBCZ SURF -150 #1541 3304394.1 0.2 SINGAPORE *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Analog Devices**);

- Last programmed clock speed ICS307M-02 CL6000070 1027 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Integrated Circuit Systems**);

- Digital magnetic field sensor AD022A LBN0751 40533 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **NVE Corporation**);

- Oscillators series AE 803 32.0000MHz 1604; Oscillators MA02391 *for Strategic aviation cruise missile of the X-101 type*; Microcircuit 33. 00DA MS08400; Microcircuit 48. 00CJ MA04345; Microcircuit 24. 00CM MA06032; Microcircuit 64. 00CM MS07639 *for Aviation strategic cruise missile Kh-101* (Manufacturer: **Anderson Electronics**);

- LattePanda mini computer (computing unit) *for UAV "Supercam-S350"* (Manufacturer: **DFRobot Electronics**);

- air pressure receiver LPC4337JBD144 *for UAV "Supercam-S350"*; Microprocessor MCIMX6L2EVN10AC XAA2138 TA1W RLAXN *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)* (Manufacturer: **NXP Semiconductors**);

- Microcircuit 106D 10744 *for Aviation strategic cruise missile Kh-101* (Manufacturer: **Illinois Capacitor, Inc.**);

- Transceiver CORTINA WJLXT971ALE A4 C448D00A *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Cortina Systems**);

- Microcircuit ALLIANCE C (integrated circuit of asynchronous memory 4 Mbit, parallel, 12 ns, 36-SOJ) AS7C4096A-12JIN 1310 RN-52N T200801.1 *for Aviation strategic cruise missile Kh-101*; High performance CMOS static storage attachment ALLIANCE AS7C34096-15TC 1026 VT-401N 715001A *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Alliance Memory Inc.**);

- Double-Data-Rate-3 DRAM *for Autonomous signaling system "Radio Barrier"*; ALLIANCE D microcircuit AS7C34098F-10TIN 1631 XN-31N T500790.1 *for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (IQT2.209.029)* (Manufacturer: **Alliance Semiconductor**);

- RAM chip CY62157EV30L – 45ZSXI S13 614000 04 *for Inertial measuring unit of the 9M544 MLRS Tornado-S rocket*; 32-bit microcontroller Japan MB91F467BA *for UAV "Mohajer-6"*; FBGA-48 Flash memory for 16 MB SPANSION AL016J70BFI01 201BB389 L THA 4HYV7G *for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS*; Microcircuit CY7C1381KV33-133AXI; Microcircuit CY7C10490; Integrated circuit CY7C1011DV33 10ZSXI 2013; Integrated circuit CY7C1381KV33 1334 TWN 2019; Memory module CY7C1381KV33-133AXI TWN2113; Microcircuit CY62157EV30L L-45ZSXI 1813 614000 F 04 *for 3M-14 type cruise missile of the Kalibr missile complex*; Microcircuit CY7B991V-5JC, Microcircuit CY7C1041G30-10ZSXI, Microcircuit CY7C1069G30-10ZSKI *for Strategic aviation cruise missile of the X-101 type (IQ2023)*; Microcircuit CY7C1069DV33 - 10ZSXI, 1231 627029, N 04; Microcircuit S29GL236P117F102 22988609 B, Microcircuit CY7C10490 – 10VXI 1137 04 645988 *for Missile type 9M727 of the Iskander-K operational-*

tactical missile system; RAM memory chip CY62157EV30LL-45ZSXI; RAM memory chip CY7C1245G-100AXI for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; 128 KB × 36 cache memory is designed for interaction with high-speed microprocessors CY7C1345G-100AXI 1913 X 04 613357; SRAM is a parallel integrated circuit of 4 Mbit asynchronous memory CY7C1041DV33-10BVI for X-47M2 "Kinzhal"; Microcircuits CY7C1069DV33-10ZSXI; Microcircuit (16-megabit static RAM) CY7C10690V3-10ZSXI 1349 646874 N 04; Microcircuit (16-megabit static RAM) CY7C1069DV33 -10ZSXI 1349 647173 N 04; Microcircuit 4488 AD W32C; Microcircuit CY7C1069DV33-10ZSXI (16Mbit (2Mx8) SRAM); Flash memory SBC chip SRAM 16Mb CY7C1069DV33-10ZSXI for Aviation strategic cruise missile Kh-101; integrated circuit CY7C1069DV33 -10ZSXI 1525 622721 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Cypress Semiconductor Corporation**);

- Signal relay V23079-A1005-B301 for T-72B3 tank (Manufacturer: **AXICOM**²);
- Solid state relay LCB127S for T-72B3 tank (Manufacturer: **Clare Inc**);
- RF transistor CGH40025F for Automated station for placing obstacles ASP R-330Zh "Zhitel" (Manufacturer: **Wolfspeed**);
- Transcoder ZL38010 ZL38010 FA 1915FAA for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Microsemi Corporation**);
- MP7731DF sound amplifier MPS 1844 MP7731DF for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Monolithic Power Systems**);
- Wabco air compressor 9119050106 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Air compressor Wabco 9119050106; Pneumohydraulic amplifier Wabco (Wabco 970 051 423 0); Pressure sensor WABCO 441 044 102 0; Parking brake sensor WABCO 961 723 157 0; Steering wheel angle sensor WABCO 441 120 007 for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Westinghouse Air Brake Company**);
- Lower Hub Arm Bushing No. SSE99234 (Front Axle); Rubber-metal silent block (front, middle, rear bridge) for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **RBC - SCHAUBLIN**);
- Cardan shaft in the drive assembly of the left wheel gearbox (front, middle, rear axle) № 611690067 / 5611690067 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Dana Spicer Italcardano**);
- Automatic gearbox for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Allison Transmission**);
- Step-down DC converter 27533 PRZC for UAV "E95M" air target type (No. 816); Step-down DC converter 27533 PRZC for UAV "Eleron-3SV" (Manufacturer: **Semiconductor Components Industries**);
- Active amplifier X2 XX1002-QH for Portable satellite communication station P-438-N; microcircuit SWSS0180 06232303 MACOM for Portable VHF radio station R-168-5UN-2; Switch MASWSS0180; Switch SWSS0180 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1" (Manufacturer: **MACOM Technology Solutions**);
- Fuel control pedal WM542 (135099) for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Williams Controls**);
- General purpose RF directional coupler (Xinger 11305-3s) for The Silok-01 electronic warfare (EW) system (Manufacturer: **Anaren Inc (TTM Technologies Inc)**);

² AXICOM – there is a doubt that this is the company name on the component, maybe this is a component manufactured by the American company *TE Connectivity Ltd* (there this word was included in the name of the component); another company with the name *AXICOM* is indicated for another component as Swiss

– Power amplifier QPA2237 for *The Silok-01 electronic warfare (EW) system*; Power amplifier for the radio transmission path RF3194; Low-noise amplifier for the radio receiving path SPF5122Z; Radio frequency amplifier 7M9102, SBB4089Z for UAV "Orlan-10" (Manufacturer: **Qorvo**);

– KamAZ engine 610.10-350; Intake pipe Cummins ISBe 4933777; Water pump Cummins ISB 4 Cylinder Water Pump 451015/02; Electronic control unit CM2150C CUMMINS for *ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **Cummins**);

– Hall effect current sensor (ACS711T TLC12AB) for *The Silok-01 electronic warfare (EW) system*; Current sensor ACS711; Voltage sensor ACS770LCB-050B for UAV "Zala 421-16E"; Current sensor ACS712 for UAV "Kartograph" (Manufacturer: **Allegro MicroSystems**);

– Jetson TX2 module for UAV "Zala 421-16E" (Manufacturer: **Nvidia**);

– Microcircuit1730 (e3) LTC1594LIS for *Inertial measuring unit of the 9M544 MLRS Tornado-S rocket*; Microcircuit LT10861IT; 14-bit analog-to-digital converter 2018 LTC2174 UKG-14 BT30267, Modular DC regulator LTM4613V for *Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna)*; Integrated circuit LTGTD E3 (microcontroller) for UAV *Shahed-136 (Geran-2, 157 components)*; 14-bit analog-to-digital converter 2018 LTC2174 UKG-14 BT30267, Modular DC regulator LTM4613V for *UAV-kamikaze Shahed-136 of Russian production*; Integrated circuit 33703 963A38, Integrated circuit 223 3701; Low-noise linear regulator 1.5 A 337e3 963A33 for *X-47M2 "Kinzhal"*; Dual step-down power supply module LINEAR LTM4619 for *Autonomous signaling system "Radio Barrier"*; Microcircuit 910 e3 1735I for *Electronic computer "BAGET-43"*; Microcircuit (precision operational amplifiers with a current of 17 μ A, double and quadruple, with a single supply) 603 2178AI; Chip (op amp, input bias voltage 100 μ V, input bias current 3 nA, operating temperature -40 $^{\circ}$ C to +85 $^{\circ}$ C) 1713 LT2179IS for *Complex IK144-E "Sectant"*; Charge controller microcircuit LTC4155EUFDF for *Navigation equipment for individual use "Orion" (index 14C8009)*; Receiver-transmitter (LTC1334ISW) for *Portable satellite communications station R-438-M "Belozher"*; DC/DC converter (LT8331) for *AR-2C "Arakhis" radio station*; LTK3 e3; Voltage stabilizer LT1763 Series; Voltage converter 503 37801 B94018; Voltage limiter LT4356-2; Voltage regulator LT3011; Comparator LT6703-2; Transceiver (LTM2881V-3 μ Module) for *Portable satellite communication station P-438-N*; Step-down DC/DC module LINEAR LTM8021V uModule N832 1348MY for *Granat-3 UAV*; Microcircuit LTC3701 for UAV "Kartograph"; 8-channel 12-bit analog-to-digital converter LTC1594LIS; Linear voltage stabilizer LT1185IT (5V, 3A) for *3M-14 type cruise missile of the Kalibr missile complex*; Microcircuit (500 mA, low-noise micropower LDO regulator) 76333 N0119 LT2E; Microcircuit LTM8031V mModule №20839 1207MY for *Aviation strategic cruise missile Kh-101*; Low noise, low droop micropower regulator 404 G3 1763; Line stabilizer LINEAR LT1587 CM-3.3 5056350; Regulatory controller, optimization for swedish reception LINEAR LT1764A EQ 4035865; Regulatory controller, optimization for swedish reception LINEAR LT1764A EQ 3284332; LDO High efficiency switching regulator LINEAR LT1370 HVIR 0110053; LDO-regulatory controller, optimized for a quick reception of the input. LINEAR LT1764A EQ 3284332 for *Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Linear Technology Corporation**);

– Thick film resistors MP915-10.0-1% 1829 for *X-47M2 "Kinzhal"* (Manufacturer: **CADDOK**);

– Filter RN102-2-02-1M1 for *Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use* (Manufacturer: **Schaffner EMC Inc.**);

– Voltage converter (VI-JOM-IY) for *Portable satellite communications station R-438-M "Belozher"*; Isolated DC converters VI-JW1-MZ 11511040177 for *Strategic aviation cruise missile of the X-101 type* (Manufacturer: **Vicor Corporation**);

– Tantalum capacitor R+ 107 20B 347 for *Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"* (Manufacturer: **Kemet Electronic Components**);

- Engine cooling system fan (car engine); Turbocharger mod. S2B/7624TAE/0.76D9 for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Borg Warner Turbo Systems**);
- Transistor AC125Π for *Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Diode rectifier bridge MB3266 6CKG4 A4H8 for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)* (Manufacturer: **New Jersey Semiconductor Products Inc**);
- Relay AXICOM IM43, 5V DC for *Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"* (Manufacturer: **Tyco Electronics**);
- Frequency synthesizer MC14517D2 for *Portable VHF radio station R-168-5UN-2*; Voltage regulator 8L05A PLUAB for *3M-14 type cruise missile of the Kalibr missile complex* (Manufacturer: **Motorola, Inc**);
- IF path of a narrowband FM receiver MC3361BP, XYCK1208 for *Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"*; Low-power audio amplifier (MC34119L) for *Portable radio station R-392, code "Peanuts"* (Manufacturer: **Unisonic Technologies co., LTD**);
- Microcircuit CSI 24WCO2WI for *Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Catalyst Semiconductor**);
- CDC-DC converter LM2576 HVT, Synchronous lowering stabilizer LM2853, Digital media processor DM368ZCED, Video decoder TVP5150AM1, Digital video decoder VIDEO TVP5146 PFP, AC31041, LK245, 16-bit drivers LVTH162245, TRSF3232EI 4BCO6TK, The DC-DC converter is integral TPS5420 71k, TLC2741 G4, Integrated circuit MB3232I, Transformer TVP7002, Microcircuit LT10861IT, and Interface TRSF3232EI for *UAV "Mohajer-6"*; Voltage stabilizer PS767D361 8DT 09XZ, Digital signal processor DSP MS320 F28335PGFA G4A 17CHDW G4, Multi-channel linear driver 4B3238I 87K, architecture ARM Cortex-M4F(4KCPDTI3 14CF2TW), series TIVA TM4C129:, Microcontroller series TIVA TM4C1230 (E6PMI7 89C9R9W), Power module LMZM33604 (03WD76C), Transceivers CAN VP230 85M AONF, CAN VP230 74M AFD1, CAN VP230 97M A8DS, and CAN VP230 1CM ALLC, Digital signal processor G4 TMS320F28335PGFA G4A-17CHCHW, Multi-channel linear drivers/receivers MB3238I 08K G4 CYH8, MB3238I 93K G4 C71V, Voltage converter PS767D301 8BT C9XZ, Inverter 18AZYFK G4 HCT04, Digital signal processors DSP TMS320 F28335PGFA G4A-8AAZD6W G4, DSP TMS320 F28335PGFA G4A-8AC0VZW G4, DSP TMS320 F28335PGFA G4A-8AC0XNW G4, DSP TMS320 F28335PGFA G4A-95A2K7W G4, DSP TMS320 F28335PGFA G4A-17CHCEW G4, and DSP TMS320 F28335PGFA G4A-17C3T7W G4/, Voltage regulators PS767D301 8BT C9XZ and PS767D301 8BT AJF1; Microcircuit 4C-12 85K CCQX for *UAV Shahed-136 (Geran-2, 157 components)*; Wide range synchronous controller 12AN4HU LM25116 MH; Network controller (3.3 V power supply) VP234 28M AFRS, Two-channel controller TPS 34261 TI2241 AN43, Network controller (3.3 V power supply) VP232 28M AR7N for *UAV "Lancet"*; D-type latches for load management HT573 38KG4 D2XK, Integrated circuit 1BAYSKK G4 65C23243; 16 bit buffer and line driver with 3 outputs LVT162244A; 8-channel bus transceiver with 3 outputs LS245; 16-bit transceiver ABT16245A; Component 1BAYSKK G4 65C23243; Component HT573 38K G4 D2XK; Component HT14 2AK G4 CQVP for *X-47M2 "Kinzhal"*; Integrated microcircuit 08A7T3K ABT16245A; Integrated microcircuit 76ACTTK ABT16245A; Microcircuit LX245B; Microcircuit TPS51100 for *3M-14 type cruise missile of the Kalibr missile complex*; Ultra-low power video decoder 5150AM1 7CT, Integrated circuit BQA261 A78J; Octal buffer/driver SN54LVC541A; Network transceiver VP232, Network transceiver VP232 for *Autonomous signaling system "Radio Barrier"*; Microcircuit 81H805K G4 LVC00A for *Electronic computer "BAGET-43"*; Microcircuit PT76725, Microcircuit ALVTH16245, Microcircuit ABTE16245, Microcircuit ALVTH162244, Microcircuit LXH125, Microcircuit PT76725, Microcircuit CBTD16210, Microcircuit LVCH162244A, Microcircuit ALVTH162244, Microcircuit ABTE16246, Microcircuit LVC08A, Microcircuit TRS54616 for *Strategic aviation cruise missile*

of the X-101 type (1Q2023); 16-bit (double-octal) non-inverting 3-position receivers, approved for operation at a voltage of 2.5 or 3.3 V, but also with the possibility of providing a TTL interface in a 5-V system medium ALVTH16245; low-power quad 2-CMOS differential linear receiver designed to meet RS-422, RS-423, and federal standards 1020 and 1030 $\pm 0.2V$ JM12AHIS DS26C32ATM; transceiver ABTE16246; Microcircuit of a linear positive voltage regulator L05A PUYRB; diode couple of a linear voltage regulator V237YA F 817B; n/a FR5806 123P NO UN for Strategic aviation cruise missile of the X-101 type; Microcircuit A6E3 DSP TMS320C6414GLZ C-20 24A10CW, Microcircuit 01CZD2K LV273A, 04; Microcircuit DSP TMS 320C30GEL JG-22S2LGB 1988; Microcircuit DSP TMS 320C30GBA FE-94AB04T 1990 TI; Microcircuit DSP TMS320C25GBA FE- 2BS8QCB 1986 TI; Microcircuit TL16C552AFN 21A IDRW C4 for Missile type 9M727 of the Iskander-K operational-tactical missile system; Chip (ULP 16 MHz mixed-signal microcontroller with 256 KB FRAM, 8 KB SRAM, 48 IO, ADC12, with IF scanning, AES 64-VQFN from -55 to 95°C, supply voltage 1.8 to 3.6 Volts) 16AAEJZTG M430F2618T REV H; Chip (ULP 16 MHz mixed-signal microcontroller with 256 KB FRAM, 8 KB SRAM, 48 IO, ADC12, with IF scanning, AES 64-VQFN from -55 to 95°C, supply voltage 1.8 to 3.6 Volts) 6AAEJZTG4 M430F2618T REV H; Chip (Mixed Signal Microcontroller, Supply Voltage, 1.8 ... 3.6 Volts, 16-bit RISC Architecture with Ultra-Low Power Consumption, 60 KB Flash, 2048 Bytes RAM, 12-bit ADC, Dual DAC, 2 ports USART, I2C, HW Mult, DMA 64-VQFN from -40 to 85 °C) 27AVXGTg4 M430F1614 REV B; Microcircuit (16-bit low-power microcontroller, low supply voltage: 1.8 ... 3.6 Volts, dual synchronous 12-bit DAC, built-in comparator) 68ANFPTG4 M430F1611; Microcircuit (16-bit low-power microcontroller, low supply voltage: 1.8 ... 3.6 Volts, dual synchronous 12-bit DAC, built-in comparator) 68ANFPTG4 M430F1611; Microcircuit (16-bit low-power microcontroller, low supply voltage: 1.8 ... 3.6 Volts, dual synchronous 12-bit DAC, built-in comparator) 64C2LLTG4 M430F1611 REV B for Complex 1K144-E "Sectant"; Microcircuit 74HC123D; Microcircuit S1053 for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); PLLATINUM™ wideband RF synthesizer with phase synchronization and support JESD204B (LMX2594); AN transceiver interface (VP232); CAN transceiver interface (VP232) for The Silok-01 electronic warfare (EW) system; Microcircuit TPS40057 for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; ARM processor DM3730CUSA; Power management chip (TPS6595); Transceiver microcircuit RS-232 TRS3253E for Navigation equipment for individual use "Orion" (index 14C8009); Comparator (LT2903); PWM controller (UCC2808-1); Power microcircuit (MAX796); Operational amplifier (TLV23332) for Portable satellite communications station R-438-M "Belozer"; Microcontroller MSP430F5358; Charge controller (BQ24725A); N-channel MDN transistor (CSD17308Q3); Audio codec (TLV320AIC3204); DSP processor (TMS320C55) for AR-2C "Arakhis" radio station; Clock buffer C9C4 for Portable satellite communication station P-438-N; Differential linear receiver 66 AJDR DS90LV for Automated radio jamming station R-330 BMW; Microcircuit SN74HCT541; Microcircuit TPS54561; Microcircuit SN65HVD232; Power supply module LMZ14203; CAN TRANSCEIVERS SN65HVD234D; CAN TRANSCEIVERS SN65HVD232D; Switching voltage regulators LM2673S for UAV "Zala 421-16E"; Chip VP231; Hybrid DC-DC converter TPS84250; Hybrid DC-DC converter TPS84250 for UAV "Eleron-3SV"; Chip VP231; Hybrid TPS84250 for UAV "E95M" air target type (No. 816); Chip HT541; Chip VP232, Chip HT541 for Strike UAV "KUB-BLA"; Microcircuit LVC14A; Microcircuit ALS760; Microcircuit LVTH16245 for Army self-propelled gun 2S5M "Hyacinth-S"; Microcircuit 320AIC14KI 25T AR42; Microcircuit DSP TMS 160 320VC5416PGE CD-37AX5PW G4; Microcircuit TMS 320VC5416 for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; Integrated switching regulators PTN 78060 WAZ, 431789; Semiconductor YF08E, 42KG4, D1ER; Microcircuit USB2046BI 43TG4, AJ7.6 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; 8-bit register SNx4LVC573A LC573A 8AKG4; Demultiplexer SN74LVC138A LC138A 91AG3; Binary logic chip SNx4HCT374

HA273 73KG4; Binary logic chip SN54LVC02A LC02A 8CKG4; Binary logic chip SN54LVC32A LC32A 6AKG4; Binary logic chip SN54LVC08A LC08A 79AG3; Integrated circuits AV receiver LC32A, 8AK C068; Electronic component LC573A *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; Digital Signal Processor DSP C5420PGEA200 AF-64A4DJW G1 *for Portable VHF radio station R-168-5UN-2*; Linear amplifier 33N7, LM, 2904M; Operational amplifier 3B-S 1332B LM124 J, THA; Dual operational amplifier 3AX3 2951 APMC 33N7 LM 2904M; Voltage jumper CM0109B OCK, CT2S; DSP processor C5420PGEA200; The shift register CD74HC4015 *for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"*; microcircuit A6E3 DSP TMS320C6414GLZ C-20 24A10CW; microcircuit 01CZD2K LV273JL, 04; microcircuit DSP TMS 320C30GEL JG-22S2LGB 1988; microcircuit DSP TMS 320C30GBA FE-94AB04T 1990 TI; microcircuit DSP TMS320C25GBA FE- 2BS8QCB 1986 TI; microcircuit TL16C552AFN 21A IDRW C4 *for Operational-tactical missile complex "Iskander-K"*; microcircuit VIDEO TVP5147 89C9J2TG4; microcircuit 77AR2DTG4 SN75LVDS83; High precision operational amplifier OPA2277U *for T-72B3 tank*; modular converter LMZ14203 *for UAV "Supercam-S350"*; Microcircuit TMS320VC33PGE; Microcircuit AC04; Microcircuit AC74; Microcircuit PGA206UA; Chip BQ24703; Microcontroller (TMS470); Chip (PS54425); *for UAV "Kartograph"*; Unidirectional buffer HC373; Digital-analog converter (LC548I); Switchboard (89ACEKM HC75M); Voltage regulator (MAX603ESA) *for Portable radio station R-392, code "Peanuts"*; Real-time microcontroller with DSP connection manager IMS320 F28335PGFA G4A-17C76EW; Line driver/receiver with ESR protection MB3238I 6GK6G4 A4H9; Line driver/receiver with ESR protection (MB3238I) 04KG4 AZCC; Line driver/receiver with ESR protection MB3238I (04KG4 C2TZ); Differential amplifier with unipolar power supply INAI5 RWI37 TF7Q; DSP TMS320 digital signal controller F28335PGFA G4A-17AJJJW G4; DSP digital signal controller TMS320 (F28335PGFA G4A-4C2GKW G4); A linear regulator with two outputs and a small drop PS767D301 (OAT CE3P); A linear regulator with two outputs and a small drop PS767D301 (O9T A34N); Digital signal controller DSP TMS320 F28335PGFA G4A-17AJJJW G4; Digital signal controller DSP (TMS320) F28335PGFA G4A-9BC7ZGW G4; Line driver/receiver with ESR protection MB3238I 04KG4 AZCC; Pulse voltage regulator LM256 AK1U9; A linear regulator with two outputs and a small drop PS767D301 (54T CGOH); A linear regulator with two outputs and a small drop PS767D301 (OCT AP5L); DSP digital signal controller (TMS320 F28335PGFA G4A-17C76FW G4); DSP digital signal controller TMS320 (F28335PGFA G4A-14C2GKW G4); Line driver/receiver with ESR protection (MB3238I 04KG4 C2TZ); **TIVA TM4C129x series microcontroller; Architecture: ARM Cortex-M4F; Number of bits: 32 bits; Processor frequency: 120 MHz; Program memory size: 512 KB; RAM size: 256 KB TM4C129 (4KCPDTI3 14CF2TW)³**; TIVA YEF series microcontroller TM4C1230 (E6PMI7 89C9R9W); A module that combines a 3-A DC-DC converter, shielded inductor, and passives in a low-profile package. LMZM33604 (98WD76C); Synchronous step-down regulator F10AQ P185 G4 *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; DSP chip (Digital Signal Processor) TMS 320C25GBA; Digital signal processor DSP TMS320C30GEL JG-22S2LG8 1988 TI; Microcircuit LX245B 19K G4; Microcircuit 8BCQ97K ABT534A G4; Microcircuit 08A7T3K G4 ABT16245A; Microcontroller 75ANYPK G4 ABT16245A *for 3M-14 type cruise missile of the Kalibr missile complex*; n/a XIO2001I 4A 37AH9TW G4; Processor OMAPL138B GWT 62AQI9W GI A375 21 527 MEP *for Corsair UAV*; Power management integrated circuit PTH08080WAH; Bluetooth module LMX9838SB *for UAV "Orlan-10"*; Microcircuit LVTH16245A (16-bit transceiver); Chip (16-bit buffer/driver with 3-state outputs) LVTH162244 PCLAA; Chip (buffer/line driver with open collector outputs) 28CL8QK AS760; Microcircuit 0CDN1LK F126; Microcircuit 12C2RVK ABT125; Microcircuit 37AOE1K AC7A; Microcircuit 28084 32M A9KN⁴ *for Aviation strategic cruise missile Kh-101*; 8-bit shift registers with 3-state output registers LV595A 43A99 PQX8; Floating Point Digital Signal Processor (DSP) A200 DSP

³ TIVA – green is one component

⁴ Manufacturer of this component is *Unitrode* (=Texas Instruments)

TMS320C6713BGDP C20-35P00C8 3460141; Quadruple tire buffer gate LC125A 48AGP 1GG; 3.3-V CAN transceiver VP230 29M A3DK; Regulator switching modules PTN78060 WAZ 671438V; Microcircuit 95AIHEM AM26C31Q G4; Microcircuit 36A401M AM26C321; integrated circuit 28CL90K AS760 G4; integrated circuit 4CA9TOK LVC32A 16-bit non-inverting 3-state receivers designed for low voltage 3.3V 4CC32NK G4 LVTH16245A; 16-bit (suspended high) non-inverting 3-stand receivers, expandable for low voltage 3.3V 4CC32NK G4 LVTH16245A; 16-bit buffer and line driver, for low voltage applications (3.3 V) PAUAA LVTH162244; 2.5-V/3.3-V 16-bit buffer/driver 41A35YK G4 ALVTH162244; 2.5-V/3.3-V 16-bit transceiver with 3-stage outputs 17A9HPK G4 ALVTH16245; 2.5-V/3.3-V 16-bit buffer/driver with 3-stage outputs 3CAJ7KK G4 AL VTH162244; High performance digital signal module with fixed point DSP A6E3 DSP TMS320C6414GLZ C20-31AZ11W 2003 TI 62; Analog-Digital Converter ADS850Y05A4Y8T; 16-bit buffer/driver 16CYFXK G4 CW244A; DSP processor TMS 390F2811PBKS CG-32A372W G4; Differential line driver with 3-way output 09SFFT8 A26LV32EMP G4; High-voltage, high-voltage array of Darlington transistors 0UAQB19 ULN2803AG; Sub-driver/receiver RS-232 with protection MAX232E; n/a OUAOBI9 ULN2803AG; Two-fold bus buffer gate LC125A 41AG P1YJ *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"*; (Manufacturer: **Texas Instruments Inc.**);

– GS3703FEY module OveroIron STORM-Y *for UAV "Orlan-10"* (Manufacturer: **Gumstrix**);

– RAM MT48LC2M32B2, 29F2F08ABAGA *for UAV "Mohajer-6"*; Memory chip IIA15 RB163, Memory chip OPA47 D9WVC LZND, Differential amplifier INA15 RWI37 *for UAV Shahed-136 (Geran-2, 157 components)*; Multilayer ceramic chip capacitor 02A47 D9WV LZND *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Memory chip series D9 9LK17 D9P3K DRAM Chip DDR2 SDRAM 512Mbit 32Mx16 1.8V Automotive 60Pin FBGA *for UAV "Lancet"*; Integrated circuit 6PH17 D9SBV; 64 MB flash memory 2RC22 D9MHP *for X-47M2 "Kinzhal"*; Microcircuit MT46H32LFB5-5 D9LRB; Memory module 29F32C08AFABA *for 3M-14 type cruise missile of the Kalibr missile complex*; Memory 7SA18 JWA03, Synchronous dynamic random access memory 8NE16 D9PZQ256X16DDR3 *for Autonomous signaling system "Radio Barrier"*; Flash memory chip 80C17D9; RAM memory chip 7TD12 *for Navigation equipment for individual use "Orion" (index 14C8009)*; Microcircuit MT41K128M16JT; Microcircuit N25Q128 *for UAV "Zala 421-16E"*; Microcircuit DM74ALS, Microcircuit 74ACT175 *for Army self-propelled gun 2S5M "Hyacinth-S"*; Microcircuit SDRAM I328 48LC8M16A2 *for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"*; Flash memory JS28F128J3F75 JS28F128 J3F75; Flash memory M25P128 25P28V6P G0071 VS *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; Memory module 29F32C08AFABA 1928; Memory module D9LRB 9FX27 (2pieces) *for 3M-14 type cruise missile of the Kalibr missile complex*; Integrated circuit 3DK77 D9PSS *for Corsair UAV*; Microprocessor MT48LC32M16A2 *for UAV "Orlan-10"*; High-speed dynamic random access memory with an asynchronous interface 1339 3-2 48LC4M32B2 TG 7-IT G; Highly dynamic memory with sufficient access 1412 2-7 48LC4M32B2 -6A IT L; High resolution CMOS dynamic RAM 1412 2-7 48LC4M32B2 P -6A IT L *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Micron Technology**);

– Microcircuit AMIC A29040B-70F 1143OT AM91121 *for Electronic computer "BAGET-43"* (Manufacturer: **AMIC Technology Corporation**);

– Triple balanced general purpose mixer that can be used as a frequency converter 2709 (1043L KQSAJ) *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)* (Manufacturer: **Hittite Microwave Corporation**);

– Connector AMPHENOL JD38999 24WB35PN; Connector JD3899/24WB35PN *for T-72B3 tank* (Manufacturer: **Amphenol Corporation**);

– Inductance coil COILCRAFT 223 *for T-72B3 tank* (Manufacturer: **Coilcraft Inc.**);

- Rotary optical decoder ENC1J-D28- L00128L 2024M MEX; Rotary optical encoder ENC1J-D28- L00128L 0838M MEX *for T-72B3 tank* (Manufacturer: **Bourns Inc**);
- Generator Prestolite Electric AVi147S3123HD *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **Prestolite Electric Incorporated**);
- Components of the cylinder-piston group (sleeve, piston, rings, fingers) (car engine); Bearings (main, connecting rod) (car engine) *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Federal Mogul Corporation**);
- RepInfrared module FLIR Tau 640; Infrared module FLIR Tau 640 *for UAV "Eleron-3SV"* (Manufacturer: **FLIR Systems, Inc.**);
- Air filter (engine air supply system) FRG 180087 *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Donaldson Company**);
- Microcircuit SipexSPX3940AI *for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Chip (microprocessor with low power consumption) SP706SE 1235 E1880 *for Aviation strategic cruise missile Kh-101* (Manufacturer: **Sipex Corporation**);
- Airspeed sensor 060MDSA5 1406 03N *for UAV-kamikaze Shahed-136 of Russian production* (Manufacturer: **Honeywell Sensing and Productivity Solutions**);
- Fuel filter WIX WF8130 *for UAV Shahed-136 (Geran-2, 157 components)* (Manufacturer: **WIX Filters**);
- Vocoder AMBE-2000-10 *for Portable satellite communication station P-438-N* (Manufacturer: **Digital Voice Systems Inc.**);
- Microcircuit OXFORD SEMICONDUCT 0XuPC1954-LQAG *for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; n/a OXPCle 958 GKNO22 II1346 *for Corsair UAV* (Manufacturer: **Oxford Semiconductor**);
- Highly integrated, low-profile, highly efficient synchronous power system EN5339QI SFU27 U101 *for Autonomous signaling system "Radio Barrier"*; Intel i386EX - 368 series processor JA80386EX25 *for Strategic aviation cruise missile of the X-101 type (1Q2023)*; Intel SSD; Intel® Core™2 Duo processor L7400; Chipset Intel Express Chipsets 82945GM Memory Controller *for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Processor LE80536; Gigabit Ethernet controller NH825466B; Microcontroller NH82801DB *for Automated radio jamming station R-330 BMW*; FPGA microcircuit EPF10K100ARC240-2N *for Army self-propelled gun 2S5M "Hyacinth-S"*; Intel i386EX - 368 series processor; Memory integrated circuits JS28F128; Microprocessor INTEL/ALTERA chips 35M240BD01 P30692.1 1346 *for Strategic aviation cruise missile of the X-101 type*; Power controller (C188EC20) *for Portable radio station R-392, code "Peanuts"*; Microcircuit Intel BGA IC chipset BD82QM67 SLJ4M Bridge Chip E336C231; Chipset CPU G28164 01 EDE; Built-in Intel386 EX microprocessor WG82579LM ADQ4103W 1341 *for Corsair UAV*; Microcircuit JS28F128J3F75 (SBC Flash 128 Mb); Flash memory SBC chip 128 Mb JS28F128J3F75 *for Aviation strategic cruise missile Kh-101*; Built-in microprocessor INTEL i386 EX JA80386EX25 L239MA23E TB; microcontroller EN87C198KC20 L710QA53 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Enpirion Inc. (Intel)**);
- Dual low power transceiver HI-1567CDI *for X-47M2 "Kinzhal"*; Microcontroller HI-8382J-17-02-5086; Linear driver HI-8382J 83-01-3222 *for 3M-14 type cruise missile of the Kalibr missile complex*; Microcircuit Hi-1567CDI *for UAV "Kartograph"*; Microcircuit (line receiver) HI-8588 PSI 1311; Microcircuit (line receiver) HI-8588 PSI 1233 *for Aviation strategic cruise*

missile *Kh-101*; Integrated microcircuit - receiver line ARINC 429 HI-8445 PST 1238 for *Combat attack helicopter Ka-52*, code: "*Alligator*", index "800.06" (Manufacturer: **Holt Integrated**);

- Microcircuits M 2505 1YM 1317 for *Strategic aviation cruise missile of the X-101 type* (Manufacturer: **SiTime Corporation**);
- Graphics processor Mobility Radeon 9000 for *Automated radio jamming station R-330 BMW* (Manufacturer: **Advanced Technology International**);
- Electromechanical relay NCR NRP15-C12D for *UAV-kamikaze Shahed-136 of Russian production* (Manufacturer: **NCR**);
- Stabilizer for 5A MIC69502WR (2015 MAL) for *UAV Shahed-136*; Microcircuit KSZ8999I for *Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"* (Geran-2, 157 components); 5A low-drop linear regulator that provides low voltage and high current MIC 69502WR (2015 MAL) for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)* (Manufacturer: **Micrel Inc**);
- Thin film resistor YJ612 TI 84K CL7 for *UAV "Lancet"*; Tantalum SMD capacitor 206E 805N2, Tantalum SMD capacitor 107 J 18E01, Tantalum capacitor Δ476 E 20184, Tantalum capacitor Δ107 A 206B2, Tantalum capacitor Δ106V 70F61 for *X-47M2 "Kinzhal"*; Tantalum SMD capacitor 107J 10L61; Tantalum SMD capacitor 107J 10760; Tantalum SMD capacitor 226J 10JE3; Tantalum SMD capacitor 336A 80L22; Tantalum SMD capacitor 336A 10B74; Tantalum SMD capacitor 336E 60523; Tantalum SMD capacitor 337J 10611 for *Strategic aviation cruise missile of the X-101 type*; Tantalum SMD capacitor 156C 20B01 for *Portable radio station R-392*, code "*Peanuts*" (Manufacturer: **AVX Corporation**);
- Capacitor for suppression of electromagnetic interference MEX GP 109 for *UAV-kamikaze Shahed-136 of Russian production* (Manufacturer: **MERITEK**);
- Voltage-controlled oscillator surface-mount module Z-comm V844ME01-LF for *UAV "Mohajer-6"* (Manufacturer: **Z-Communications Inc.**);
- High-performance AMD processor Artix-7 XC7A35T, Microcircuit FPGA XC7K160T, PLIS Xilinx Spartan XC3S400 for *UAV "Mohajer-6"*; Microprocessor XILINX ZYNQ XC7Z020 CLG484ABX22 MPU Zynq-7000 Thumb-2 32Bit 733MHz 1.2V/3.3V 484Pin CSBGA for *UAV "Lancet"*; Programmable gate matrix XILINX®SPARTAN® XC2S50 TM TQG144AMS 1129 A4277850A 5I, Integrated circuit XCF 02S TM VG 79336 596 VS, Screw matrix XILINX SPARTAN XC2S50 TQG144AMS1613 F52030; Programmable highly specialized ASIC chip XC2S50-TQG144AMS; Component 78336 596.VS for *X-47M2 "Kinzhal"*; Microcircuit XILINX XC3042A PQ100BKJ1009 D4052314A 7I for *Electronic computer "BAGET-43"*; Xilinx Spartan XCV150tm PQ240AFP1249, Microcircuit XCF025, Microcircuit XCF045, Xilinx Spartan XCV150tm PQ240AFP1334, Xilinx Spartan XC2S200 FPGA F6G456AMS2029 D6110524A 5I, Programmable valve matrix XC2V1000tm FG456AGT1641 for *Strategic aviation cruise missile of the X-101 type (1Q2023)*; Microcircuit XC4036XLA HQ208AKP0723 F2368107A, 09I for *Missile type 9M727 of the Iskander-K operational-tactical missile system*; microcircuit XC4036XLA HQ208AKP0723 F2368107A, 09I for *Operational-tactical missile complex "Iskander-K"*; Microcircuit (FPS Spartan-3E Family of 500K gates 10476 cells 572MHz 90nm (CMOS) Technology 1.2V 208-pin PQFP, operating temperature range -40...100 °C, operating supply voltage 1.2 Volts) 3S500E 051468 1633 C5-000 for *Complex 1K144-E "Sectant"*; LIS* XILINX SPARTAN XC2S50, PLIS* XILINX XC9536XL; PLIS* XILINX XC9536XL; PLIS* XILINX; PLIS* XILINX XC2V500 for *Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; PLIS SPARTAN (XCS20XL); PLIS XC3S2000 FGG456EGq1501 for *Portable satellite communications station R-438-M "Belozor"*; Platform Flash XCF08P VOG48; PLIS XC3S2000 FGG456EGq1501; Programmable gate matrix XCS20XL TQG144AKP1143 for *Portable satellite communications station P-438-N*; Microcircuit XC2S100 for *Army self-propelled gun 2S5M "Hyacinth-S"*; Programmable gate matrix FPGA, Kinetex-7 XC7K 160T FBG484A8X1833 DD5699268A 21 for *Automated station for placing obstacles ASP*

R-330Zh "Zhitel" ; Microcircuit Xilinx XC9536XL VQG44AWN1401 F4658580A 101; Microcircuit XCR3256XL for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; integrated circuit XC4052XLA HQ240AKP0701 A1438126A 091 for Portable VHF radio station R-168-5UN-2; Microcontroller XCV200 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; Virtex Field programmable gate matrix Xilinx Spartan XCV150™ PQ240AFPO437 D1149990A 41; Virtex Field programmable gate matrix Xilinx Spartan XCV150™ PO240AMS0917 D2151571A 51Virtex Field programmable gate matrixthe Virtex FPGA family provides high performance, large capacity programmable logic solutions Xilinx Spartan XCV150™ PQ240AFPO437 D1149990A 41; Gate array programmed XC2V1000™ FGG256A 4C; Programming logic integrated circuits with RAM type XC2S200™ GG456AMS1503 F2121272A 51; n/a XC6SLX16 TM FTG256DIV2025 D6130415A 3I TAIWAN (D6) for Strategic aviation cruise missile of the X-101 type; microcircuit XILINX SPARTAN-6 XC6SLX45 FGG44DIV1921 D5903008; microcircuit XILINX XC4005E TQ144CMM0737; microcircuit 17128EVI 818089 A1473703A; Microcircuit XILINX XCS30 TQG144CKN1047; Programmable logic integrated circuit XILINX XC95288XL PQ208AWN1205; Programmable valve matrix XILINX SPARTAN XCS30XL TQ144AKP1209 for T-72B3 tank; Controller 3S500E 041130-1033 for Granat-3 UAV; Microcircuit XC18V04-VQG44BR; FPGA chip (XC3S50); FPGA SPARTAN-3E XC3S250E; CPLD XC2C64 for UAV "Kartograph"; Programmable gate matrix Spartan XCS20 TQ144CKN1001 D4042920A; FPGA XCS20XL-TQ144AKP1041; PLIS (XCS05); PLIS XC3064A for Portable radio station R-392, code "Peanuts"; Integrated microcircuit XILINX XC95288XL TQ144AWN1605 F5178695A 10I for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (UJ12.209.029); User Programmable Gate Array (FPGA) Xilinx Spartan XC2S200; Chip (flash memory) XCF02S 78301 552 VS; Xilinx Spartan chip (Virtex Field programmable gate array) XC3S400™ PQ208EGQ1225 D4427921A. 41; XILINX microcircuit XC4036XLA HQ208AKP1009 A2254432A 091 for Aviation strategic cruise missile Kh-101; Built-in integrated circuit XILINX XC2V1000 FG456AGT1225 D1488220A Virtex TAYWAN; Built-in integrated circuit XCV150 PQG240AFP1217 D1126873A Virtex; integrated circuit SPARTAN XC2S50 TQG144AMS1009 A2470831A 5C for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Xilinx Inc.**);

- Memory chip FM28V026 for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); FRAM memory FM28V020-SG for T-72B3 tank (Manufacturer: **Ramtron International Corporation**);

- Dual pulse regulator SC2440, SX1231H, and Integrated circuit for sound processing GS2971A for UAV "Mohajer-6"; Voltage regulator SC4216 G545990 1231 for UAV Shahed-136 (Geran-2, 157 components); Silicon flat bias diode OG CD GP325 for Strategic aviation cruise missile of the X-101 type; Integrated 10A FET regulator with programmable LDO SC417 1352 GJD006 82-A for Corsair UAV; Low-power transceiver chip W1A814 SX12BC for UAV "Orlan-10" (Manufacturer: **Semtech Corporation**);

- Flash mediaSan Disk Ultra for UAV "Orlan-10" (Manufacturer: **SanDisk Corporation**);

- Pay RC TABESH19 BN209_RFB/Apr20-V3.1 (element FLL120) for UAV "Mohajer-6" (Manufacturer: **Eudyna Devices**);

- Voltage regulator generator RFMD UMX-235-B14-G for Automated radio jamming station R-330 BMW; SPDT Switch SKY13330_397L for UAV "Zala 421-16E" (Manufacturer: **RF Micro Devices**);

- Switches L191 MS24659-23D for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Honeywell International**);

- Microcircuit 1306 I3310 for Aviation strategic cruise missile Kh-101 (Manufacturer: **Voltage Multipliers Inc.**);

– Processor ALXD800EEXJ2VF for 3M-14 type cruise missile of the Kalibr missile complex; Microcircuit AMD L6AODU9ON 11401 BM G NA LAND, Microcircuit 99 AMD 1640DU90NI 943BBC32, Microcircuit Y29390033-3373 833-32 1996 AMD DDM2, Microcircuit M29F800BB 35EF 218BB762-JJ 1990AMD DDM1 for Missile type 9M727 of the Iskander-K operational-tactical missile system; Memory chip AM29LV800BT-70EI for Equipment GLONASS and GPS for individual Grot-M (index 14C822) for individual use; Flash memory for the boot sector AM29L for Automated radio jamming station R-330 BMW; Microcircuit Type SoC Zynq-7000 XC7Z020 for UAV "Zala 421-16E"; Microcircuit AM29F080B-90SI for Army self-propelled gun 2S5M "Hyacinth-S"; microcircuit XC9536XL VQ64DMN0645 F3055175A for Portable VHF radio station R-168-5UN-2; MOSFET transistor FR5305 IOR 949I 4T 9T for Granat-3 UAV; Flash memory AM29LV001BB – 1 Megabit; Microcircuit AM29LV800BT for UAV "Kartograph"; AMD chip AM29F010B-70EF 317BB746; Flash memory AM29F010 for Portable radio station R-392, code "Peanuts"; Processor ALXD800EEXJ2VF for 3M-14 type cruise missile of the Kalibr missile complex; Microprocessor XC3S1000; Chip XCF04 for UAV "Orlan-10"; Chip (4-Megabit (512K x 8-bit) CMOS 5.0V Uniform Sector Flash Memory) AM29F040B -90JF 309W8862 L 1993 AMD; Chip AM29F016D (16Mbit (2M x 8bit) CMOS, flash memory with unified sectors) 90EF 305BB196 H 1999 AMD for Aviation strategic cruise missile Kh-101 (Manufacturer: **AMD**);

– I2C-programmable to any frequency Si5338 C B3C175 2203 for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS; Interface converter microcircuit USB-UART CP2102 for Equipment GLONASS and GPS for individual Grot-M (index 14C822) for individual use; Microcontroller C8051F121 for UAV "Eleron-3SV"; Microcontroller C8051F121 for UAV "E95M" air target type (No. 816); Bluetooth module WT32i IC Model:WT32i-A for Portable KH/VHF radio station R-353NK Code "Namotka-KS"; High performance clock generator Si 5338 A, OCS0CB, 1504 for Corsair UAV (Manufacturer: **Silicon Laboratories Inc.**);

– Electrolytic capacitors 63V 1000μF for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Rubycon Corporation/USA**⁵);

– Flash memory AT45DB161D, ATMEL XMEGA64A3U H-KR 359731 181709T, Microcircuit ATMEGA 64, Microcircuit ATMEGA 2560 for UAV "Mohajer-6"; Microcontroller ATXMEGA32A4 U-TW 359578 for UAV Shahed-136 (Geran-2, 157 components); Microcontroller High-performance, low-power 8-bit RISC-based AVR microcontroller combines 4 kB ISP flash memory, 512 bytes SRAM, 256 bytes EEPROM, 8-channel/10-bit ADC (TQFP and QFN/MLF) ATMEGA48V 10U-PH 355E5G 2110SH5; Microcontroller ATME 0A U-H 8A 35 214 for UAV "Lancet" ; Microcircuit ATMEL AT89S52 24PU0831A, Microcircuit Atmel AT89C55WD 24PU 0933 for Electronic computer "BAGET-43"; Microcircuit AT49BV322DT for Strategic aviation cruise missile of the X-101 type (IQ2023); Microcircuit (8-bit AVR microcontroller with 16 KB of programmable internal flash memory) ATMEGA16 8AU16470; Microcircuit (Quadrature modulator from 30 MHz to 300 MHz, supply voltage: 5 Volts, low power consumption: 15 mA/5 Volts) 540 U2793B 91707 for Complex 1K144-E "Sectant"; Memory chip ATMEL AT45D8321D for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK) ; Microcontroller HC 595A PFDG for Automated radio jamming station R-330 BMW; Microcontroller ATMEga8A for UAV "Zala 421-16E" & for Strike UAV "KUB-BLA"; Microcircuit KΦ118XK1 for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"; Microcircuit KΦ118XK1 for Army self-propelled gun 2S5M "Hyacinth-S"; Microcontroller AT89S8253; Microcontroller AT91RM9200; Microcontroller ATMEL AT91RM9200; Microcircuit AT91RM9200 for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; Microcircuit ATMEL MEGA 1281, 16MU1239 TAIWAN-P

⁵ Another company named Rubycon Corporation is listed as Japanese for another component

355B4A 6H6307 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; High folding microcontroller ATMEGA128L for Search receiver R-168PP; ATMEGA microcontroller 2560 ATMEGA2560 16U-TH; ATMEGA microcontroller 2560 ATMEGA 2560; ATMEGA microcontroller 128 ATMEGA128 16U-TW; Memory module ATMLH807 5EBL; EPROM memory AT27LV512A 90U-34034A; Flash memory 45DB642D-CNU; Flash memory 45DB642D 45DB642D-CNU; Flash memory 45DB642D ATMEL 1226 45DB642D-CNU; Microcontroller ATMEGA128L ATMEGA 128L; Microchip analog switch MAXIM MAX333A, EUP919; microcontroller ATMEL AT27LV512A, 90U 340B, 1848EA; 8-bit microcontroller ATMEL, 35454U; n/a ATMEL 1226, 45DB642D-CHU PHILIPPINES-L, 2P7504-63169K; Transceiver with electrostatic discharge protection MAXIM MAX3224E 1930; Integrated microcircuit of 8-bit microcontroller IC memory (IMC пам'яті) ATMEL 1226 45DB642D-CNU PHILIPPINES-L 2P7504-63169K for Portable KH/VHF radio station R-353NK Code "Namotka-KS"; microcontroller Atmel 636 for Portable VHF radio station R-168-5UN-2; microcontroller ATMEL AT89S8253 24JU, 1342 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; 2.7-volt 32-megabit flash memory, organized at a glance Atmel AT49BV322DT 70TU 1116 for Strategic aviation cruise missile of the X-101 type; EEPROM memory 17LV256; Memory module AT17LV256-10PU; Microcontroller AT89C4051-24PU; 8-bit microprocessor 90USB1287 MU 123 5397 1 for T-72B3 tank; ATmega microcontroller 32L-8AU for UAV "Kartograph"; ATMEL microcircuit AT27C512R 45JU 1534; Memory chip AT27C512R for Portable radio station R-392, code "Peanuts"; Microcircuit AT17LV010A (serial configuration memory) 3W1589A 10JU1334B for Aviation strategic cruise missile Kh-101; 8-bit microcontroller with 16Kb/32Kb/64Kb flash system programming ATMEL AT90CAN128 -16AU 1417 9F4362; 8-bit microcontroller with 128 KB programmable flash Atmel ATMEGA128 16AU 1121; 32 megabit flash memory Atmel AT49BV322DT 70TU 1116; High performance 8-bit microcontroller with low power consumption ATMEL ATMEGA1281V 8AU 1206 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **ATMEL Corporation**);

– RLM-23-1WL, RHP-225+, Power limiter RML-23 for UAV "Mohajer-6"; Microcircuit ADTL1-12 for Missile type 9M727 of the Iskander-K operational-tactical missile system; microcircuit ADTL1-12 for Operational-tactical missile complex "Iskander-K"; Bidirectional connector (MBDC-20-63HP) for The Silok-01 electronic warfare (EW) system; Low-noise amplifier (PMA-545G1); Bidirectional splitter SCBD-16-63HP; Broadband amplifier (LHA-23LN) for AR-2C "Arakhis" radio station; Frequency mixer MCL 3 538 JMS-2; Frequency mixer (MCL JMS-2) for Portable radio station R-392, code "Peanuts"; HF Transformer MCL G 1G8 ADT1-1WT for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (LJ/12.209.029) (Manufacturer: **Mini-Circuits**);

– Programmable gate matrix APA150 FG144 for X-47M2 "Kinzhal" (Manufacturer: **Actel**); – TQP3M9009 for UAV "Mohajer-6"; Capacitor PowerStor 5.5V 1.5F 5.5V for UAV-kamikaze Shahed-136 of Russian production; Chip MAX3217EAT for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1" (Manufacturer: **Mouser Electronics**⁶);

– High speed instrument amplifier with programmable gain PGA206UA 35ALJIT; High-speed instrumental amplifier with programmable gain PGA206UA 39A1R1T for X-47M2 "Kinzhal"; Isolated DC-DC converter BB DCR010505U for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK) (Manufacturer: **Burr-Brown Corporation**);

– Adapter 5510 for UAV "Mohajer-6"; Power module 97ACTJG3 LMZ12002 (TZ-ADJ) for UAV Shahed-136 (Geran-2, 157 components); Stabilizer 81A3NVU L26400 YMH for X-47M2 "Kinzhal"; Microcircuit (550 MHz low-power frequency synthesizer generates a stable signal for controlling the local oscillator of the radio frequency receiver., operating voltage 2.3 - 5.5 Volts) LMX2306 for Complex 1K144-E "Sectant"; Microcircuit LM2575 -5.0 for Mobile artillery

⁶ A company named Mouser Electronics is listed as German for other products

*reconnaissance and fire control point 1B119 "Rheostat"; Frequency synthesizer LMX2306 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; High-speed linear regulator LP3961ES -2,5 for T-72B3 tank; Voltage controller 6-42v Y1DU LM3150 MH for Granat-3 UAV; Frequency synthesizer EM31RG LMX2324 TMX; Frequency synthesizer LMX2324TMC; for Portable radio station R-392, code "Peanuts" (Manufacturer: **National Semiconductor**);*

– Microcircuit LC79430 0DAC for Electronic computer "BAGET-43" (Manufacturer: **Sanyo Semiconductor Co. Ltd**⁷);

– Microcontroller Z8523016VEG for Strategic aviation cruise missile of the X-101 type (1Q2023); Zilog serial link controller extension Z8523016VEG ESCC 1412 LM; Zilog serial link controller extension Z8523016VEC ESCC 0329 CV for Strategic aviation cruise missile of the X-101 type (Manufacturer: **Zilog, Inc.**);

– MAX3160EAP 1612, Transceivers MAX3490, MAX3387E 1816, and MAX3223E, Microcircuit Max225EW, Interface chip (multi-channel driver/receiver) MAX233AEWP for UAV "Mohajer-6"; Transceivers Maxim MAX3221 EAE 2128, MAX3232 (EUE +116), Satellite signal conversion tuner MAXIM 2112E TI119 +BEAD for UAV Shahed-136 (Geran-2, 157 components); Universal GPS receiver MAXIM 2769E TIT13 +NS8L for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS; Microcircuit MAX 1623EAP for 3M-14 type cruise missile of the Kalibr missile complex; Linear stabilizer MAX883 ESA +802; Shutter control driver 845 EUA; Multichannel RS-232 drivers/receivers with +5V power supply MAX232 ESE 1834; Addressable double digital potentiometer 100 k Ω , I2C, 8bit, DIP16, THT. DS1803-100 1228A2 +828AP; Transceiver for X-47M2 "Kinzhal"; Microcircuit MAX1658 for 3M-14 type cruise missile of the Kalibr missile complex; Microcircuit MAXIM MAX205EPG 0934, Microcircuit MAXIM MAX3245EEAI +1041 for Electronic computer "BAGET-43"; RS-232 standard multi-channel receiving-transmitting device MAX211EEAI for Strategic aviation cruise missile of the X-101 type (1Q2023); Microcircuit MAXIM MAX1480BEPI 1112 for Missile type 9M727 of the Iskander-K operational-tactical missile system; microcircuit MAXIM MAX1480BEPI 1112 for Operational-tactical missile complex "Iskander-K"; MAXIM chip (Global Navigation Satellite System (GNSS) receiver covering GPS, GLONASS and Galileo on a single chip) 2769E TI537 BSCC for Complex 1K144-E "Sectant"; Microcircuit MAX1687 for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Interface converter microcircuit USB-RS232/RS485; Comparator microcircuit MAX941ESA for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; GPS-GLONASS microcircuit MAX2769E, GPS-GLONASS microcircuit MAX2769E for Navigation equipment for individual use "Orion" (index 14C8009); Battery fast charge controller (MAX713EPE); Single-channel RS-232 receiver (MAX3221E); RS-422/RS-485 receiver (MAX3471EUA) for Portable satellite communications station R-438-M "Belozher"; Charge controller (MAX1538); DC/DC converter (MAX1685) for AR-2C "Arakhis" radio station; Microcircuit MAX13235E for UAV "Zala 421-16E"; Driver/receiver RS-232 MAX233AEWP; Microprocessor control circuit MAX693A; Comparator of low power MAX913 for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-I"; Driver/receiver RS-232 MAX233AEWP for Microprocessor control circuit MAX693A; Comparator of low power MAX913 for Army self-propelled gun 2S5M "Hyacinth-S"; Microcircuit MAX3223E AP1326 for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; Microcircuit MAX 16904 RA33/VAS, +N305; Microcircuit MAXIM MAX3387E EUG 1322; Microcircuit DS 24-82 100 + 1352 A4; Transceiver MAXIM MAX3387E, EUG 1322 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; Analog key MAX333A 3UP919; Communication interface MAX3224E AP1930; DS3232 real-time clock DS3232N 1848A4; Communication interface MAX3224E MAX3224E;

⁷ A company named Sanyo Semiconductor Co. Ltd is listed as Japanese for other products

Communication interface MAX3224E MAX3224E; Current and voltage sensor MAX471 MAX471; Microchip for analog switch MAXIM Max 333A UP 919; analog switch MAXIM Max 333A, UP 909; Microchip analog switch MAXIM MAX333A, EUP926; Microchip analog switch MAXIM MAX333A, EUP928; Microchip analog switch MAXIM MAX333A, EUP916; *for Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; transceiver MAX3237CAI; microcircuit MAX748AEWE (CMOS) *for Portable VHF radio station R-168-5UN-2*; Transceiver 5 V RS-232 with external capacitors 0.1 uF MAX211FFAT; Real-time serial clock chips DS1306 1229A3 123 AG N; 7 V voltage monitoring microcircuits MAX7069 ESA 4115; 3 V voltage monitoring microcircuits MAX3490 EESA +302 *for Strategic aviation cruise missile of the X-101 type*; microcircuit MAXIM MAX1644 EAE1651; microcircuit MAX491 ESD 0825 (low-power transceiver) *for T-72B3 tank*; Low-voltage micropower comparator MAX922 ESA +536; Low voltage comparator (MAX903ESA); Step-down switching DC regulator Max788AEWE 1545; Step-down pulse regulator (MAX 738AEWE); Operational amplifier MAX492ESA; Comparator MAX922ESA; Linear amplifier MAX407ESA; Voltage regulator MAX603ESA; Control scheme MAX708 ESA; Transceiver MAX 3221EAE; Step-down pulse regulator MAX 738AEWE; Digital-analog converter (MAX512ESD); Voltage regulator (MAX603ESA); Voltage regulator (MAX 883ESA); Transceiver (MAX 3221EAE) *for Portable radio station R-392, code "Peanuts"*; MAX3232 transceiver (EUE +116) *for Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Transistor MAX1658 ESA; Regulator MAXIM MAX1623EAP *for 3M-14 type cruise missile of the Kalibr missile complex*; Controller MAXIM 17511G IL38 +IEBF; Low-power 3.3 V transceiver for RS-485 and RS-422 communication. MAX3491, ESD1236 *for Corsair UAV*; Voltage regulator (MAX603ESA); Voltage regulator (MAX 883ESA); Low voltage comparator (MAX903ESA); Step-down pulse regulator (MAX 738AEWE); Transceiver (MAX 3221EAE); Control scheme (MAX708 ESA) *for Portable radio station R-392, code "Peanuts"*; RS-232 multi-channel driver/receiver MAX233AEWP; Microprocessor control circuit MAX693A; Comparator MAX913 *for 2S19M1 "Msta-S"*; Microcircuit MAX211EEAI; MAXIM microcircuit (transceiver with protection against electrostatic discharge,) MAX211EEA1 +1319; Microcircuit MAX974 ESE 1140; Multi-channel receiving-transmitting device of the standard RS-232 MAX211EEAI *for Aviation strategic cruise missile Kh-101*; Maxim transceiver MAX3233EEWP; Maxim transceiver MAX203EEWP; Synchronous step-down converter MAX16904; Microcircuit MAX1480AEPI; Linear receiver driver MAXIM MAX211EEA1 1533; Low-voltage step-down regulator with synchronous rectifiers and internal jumpers MAX1831 EEE 337 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Maxim Integrated Products**);

– ATmega1284P, ATmega128A, ATMEGA2560 16U-TW. and ATMEGA128A AU 1315 *for UAV "Mohajer-6"*; Interface Chip Gigabit Ethernet Transceiver with RGMII KSZ 9031RNXIA 2113A2T G000002113EQA Ethernet TXRX Single Chip 1Port 1.8V/2.5V/3.3V 10Mbps/100Mbps/1000Mbps 48Pin QFN EP 4/4 Transceiver Full Ethernet 48-QFN (7x7) KSZ 9031RNXIA 2113A2T G000002113EQA *for UAV "Lancet"*; Microcircuit 2505 -1YM 1217 *for Electronic computer "BAGET-43"*; Microcircuit MIC 49300WR 1004PHIL *for Missile type 9M727 of the Iskander-K operational-tactical missile system*; (256-position digital potentiometer, maximum supply current 1 μ A in static mode, power supply 2.7 – 5.5 Volts, temperature range: from -40 ° C to +125 ° C) MCP42100 Γ o 888TO; Microcircuit (single/double digital potentiometer with SPI interface, supply voltage 2.7 – 5.5 Volts, temperature range: from -40 to +125°C) MCP42100 SL 163405G *for Complex 1K144-E "Sectant"*; EEPROM memory (AT24C64D) *for AR-2C "Arakhis" radio station*; Microcontroller PIC12F635; Microcontroller PIC16F690 *for Portable satellite communication station P-438-N*; Microcircuit KSZ8864CNX; Microcircuit KSZ9031RNX *for UAV "Zala 421-16E"*; Microcontroller AT32UC3C1512C; Microcontroller AT32UC3A0512; Microcontroller AT32UC3C1512C *for UAV Takhion*; Microcircuit PIC16CXX *for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"*; Microcircuit PIC16CXX *for Army self-propelled gun 2S5M "Hyacinth-S"* ; Microcircuit PIC16F886; Microcontroller PIC16F877 *for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"*; EEPROM memory 24LC256 I/SM *for Portable KH/VHF radio*

station R-353NK Code "Namotka-KS"; microcircuit 12C509A 06274 UR for Portable VHF radio station R-168-5UN-2; microcontroller ATMEL AT 89S8253 24JU, 1342 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; Universal GPS receiver for Granat-3 UAV; microcontroller (MCU) 16 Kb 454 RAM 33 I/O PIC17C44; Microcircuit APA150-FG144; Microcontroller ATMEGA32U for UAV "Kartograph"; Memory chip (AT27C512R) for Portable radio station R-392, code "Peanuts"; MOH transistor VP230 (18M) A 77R; MOH transistor VP230 (OBM A HV); MOH transistor VP230 (OBM A5F) for Unmanned aerial vehicle "Shahed-136" (GERAN-2); Microcontroller ATX Mega A3; Network controller LAN9221; Microcontroller ATmega32BP for UAV "Orlan-10"; Microcontroller PIC16C65A for 2S19M1 "Msta-S"; Chips 6UMI7 D9RZT; Microcontroller ATMega1281; Microcontroller ATMEGA128A-AU; Microcircuit Atmega128A; Microcircuit Atmega8535 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Microchip Technology Inc.**);

– FLASH memory 39WF1601 70-41-B3KE1Mx16 bit, 70Hc; ADC MCP3550-50E SN 2023 for UAV Shahed-136 (Geran-2, 157 components); 8-Bit AVR Microcontroller TINY24A-U 35471H –N Δ 1787R6M for X-47M2 "Kinzhal"; Flash memory SST 39VF040 70-41-NHE 1614HWG-L for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (UJ2.209.029) (Manufacturer: **Silicon Storage Technology /SST (Microchip Technology)**);

– XR16V798 for UAV "Mohajer-6" (Manufacturer: **Exar Corporation**);

– Quartz element 00601-236-R 16.000000MHz MHO+23FAD-R M-TRON №103225 for Missile type 9M727 of the Iskander-K operational-tactical missile system; Quartz element 00601-236-R 16.000000MHz MHO+23FAD-R M-TRON №103225 for Operational-tactical missile complex "Iskander-K" (Manufacturer: **M-TRON**);

– 8-pin 1-channel optocoupler that uses the latest CMOS IC technology to achieve very low power performance (Optocoupler, CMOS, 40 ns, 1 channel, 3.75 kV, 25 MBd) 0721 1805 ZUA for X-47M2 "Kinzhal"; Low Noise Amplifier AMMP-6220 for Portable satellite communication station P-438-N (Manufacturer: **Broadcom Corporation**);

– Electrolytic capacitor 50V 1μF for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Shenzhen Jinghao Capacitor Co., Ltd.**);

– 2-wire serial EEPROM (memory) FM24C08A 1040JOR for UAV "Mohajer-6"; Transceiver TG2AA 74AC245, Octal buffer/line driver with 3-STATE outputs PBXAA 74ACT244; Hexagonal inverter with Schmitt trigger input PCUAB 74AC14 for X-47M2 "Kinzhal"; Microcircuit PA4AA LVTH16245 for Electronic computer "BAGET-43"; Microcircuit 74ACT175; Hexagonal inverter 74ACT04 for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"; Microcircuit DM74ALS; Microcircuit 74ACT175; Hexagonal inverter 74ACT04 for Army self-propelled gun 2S5M "Hyacinth-S"; Four-channel D-type trigger 74ACT175; Hexagonal inverter 74ACT04 for 2S19M1 "Msta-S"; Microcircuit LCX 125 PDDAB; Microcircuit LCH244A (low-voltage buffer/line driver with 5V tolerant inputs and outputs) for Aviation strategic cruise missile Kh-101 (Manufacturer: **Fairchild Semiconductor**);

– Memory chip S25FL127S for UAV "Mohajer-6"; Memory IC 8 Megabit (1 M x 8-Bit/512 K x 16-Bit) CMOS 3.0 Volt-only Boot Sector Flash Memory 8 Mbit 3.0 V 44-pin SO and 48-pin TSOP S29AL008J70TF101 134FF052 L ©07 SPANSION for X-47M2 "Kinzhal"; Memory SPANSION FL256SAIF00 22100033 A for Autonomous signaling system "Radio Barrier"; Flash memory chip S29AL032 for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; Memory chip AL016J70BF for Navigation equipment for individual use "Orion" (index 14C8009); Flash memory (S71WS256P) for AR-2C "Arakhis" radio station; Bootable flash memory S29AL008J70TFI01 for Portable satellite communication station P-438-N; Microcircuit S29GL256N11TF102 for Army self-propelled gun 2S5M "Hyacinth-S"; Memory S29AL008070TF101 0633 ARB G for Portable VHF radio station R-168-5UN-2; Flash memory S29AL008J70TFI010 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; microcircuit CY7C1069DV33 -10ZSXI, 1231 627029, N 04 for Operational-tactical missile

complex "Iskander-K"; 32-megabit flash memory device S29AL032D70TAI00 for 3M-14 type cruise missile of the Kalibr missile complex; Flash memory chip S29GL256P11TF102 245BB969 B 05 for Aviation strategic cruise missile Kh-101; Flash memory S29GL256P11TF102 530BB667 B 05 SPANSION for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: SPANSION);

- Voltage converter V36SE05010NRFA for UAV "Mohajer-6" (Manufacturer: **Delta Electronics, Inc**);

- TW2835 for UAV "Mohajer-6" (Manufacturer: **TechWell Corporation**);

- IRF4905S/L, IRF4905, Transistor P-MOSFET for UAV "Mohajer-6"; Power MDN transistor AUIRF4905S 118A L1 ZC for UAV *Shahed-136 (Geran-2, 157 components)*; Transistor LR7843 P141D SM 19 Trans MOSFET N-CH 30V 161A 3Pin(2+Tab) DPAK T/R N-Channel 30V 161A (Tc) 140W (Tc) Surface Mount D-Pak for UAV "Lancet"; Microcircuit IOR P2071 5EE0 F7240 for *Electronic computer "BAGET-43"*; MOSFET transistor (IRF3205S); MOSFET transistor (IRFR13N20D); Power microcircuit (IRF7413) for *Portable satellite communications station R-438-M "Belozher"*; Powerful MOSFET transistor LR7843 IOR for *Strike UAV "KUB-BLA"*; MOSFET IRL540NS; Transistor PVG612S for *T-72B3 tank*; Power MOSFET LR3103 IOR 102G 9Y 3P for *Granat-3 UAV*; Mosfet transistor FR 20V IOR P547J; Mosfet transistor FR540Z P643G 8X 8B for *Radio station R-166, code "Artek"*; Integrated circuit of the buffer network driver AUIRI 4905S IYR 835A OT 1M for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)* (Manufacturer: **International Rectifier**);

- MAFR-000230-000001: 2300-2500 MHz Single Junction Drop In Circulator for UAV "Mohajer-6"; Digital isolator Si8410AB 1503DF for *Portable satellite communication station P-438-N* (Manufacturer: **Skyworks Solutions, Inc**);

- Power management microcircuit (TOP250R) for *Portable satellite communications station R-438-M "Belozher"* (Manufacturer: **Power Integrations**);

- Chokes with shielded wire IHLP for *Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna)*; Chokes with shielded wire IHLP for *UAV-kamikaze Shahed-136 of Russian production*; Pulse generation diode 841e3, 805e3 for *X-47M2 "Kinzhal"*; Transistor 4412 ALA W012 for *Electronic computer "BAGET-43"*; Microcircuit 10-35L X5 2 for *Missile type 9M727 of the Iskander-K operational-tactical missile system*; Transistor SUM110P06 for *Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Transistor (SUM110P06-08L); 2.5A IGBT/MOSFET driver (V03120); 2.5A IGBT/MOSFET driver (V03120) for *The Silok-01 electronic warfare (EW) system*; P-channel MDN transistor (Si7145DP); N-channel MDN transistor (SiR440DP) for *AR-2C "Arakhis" radio station*; Transistor SI7852ADP for *Portable satellite communication station P-438-N*; Rectifier diode 15CTQ045S for *UAV "Zala 421-16E"*; Resistive network VSSR1601103 for *T-72B3 tank*; Transistor SUP90P06; Schottky rectifier 72CPQ030 for *Granat-3 UAV*; Capacitor (15-16L E4); Capacitor (47-16L E4); for *Portable radio station R-392, code "Peanuts"*; Capacitor 4.7-50L J 0 2; Capacitor 100-10L AD 2; Capacitor 100-10L ED 2; Capacitor 33-25L HD 2; Capacitor 100-10L AD 2; Capacitor 47-20L X8 2; Capacitor 22-20L H4 2; Schottky diode 6CWQ10FN V P609G 00 49; Rectifier diode MBRB1545CT 1503A for *Radio station R-166, code "Artek"*; Capacitor 4.7-50L J 0 2; Capacitor 100-10L AD 2; Capacitor 33-25L HD 2; Capacitor 47-20L X8 2; Schottky diode 6CWQ10FN V P609G 00 49; Capacitor 22-20L H4 2 for *Block of automation of communication management BAUS2* (Manufacturer: **VISHAY**);

- Solid-state drive of industrial level NANDRIVE 85LS1008P S-I-FZJE 1315012-CAO; for *Corsair UAV* (Manufacturer: **Greenliant Systems**);

- The chip is programmed by LATTICE LCMXO256C 4MN0C-31 A3071RAS for *Corsair UAV* (Manufacturer: **Lattice Semiconductor**);

- Plug connector M22759/16 for UAV Shahed-136 (Geran-2, 157 components); Relay AXICOM IM41 for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat" (Manufacturer: **TE Connectivity Ltd**⁸);
- Plug connector 319319FS001NF0802-24 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Glenair**);
- Plug connector MS27484T8B35PA, Plug connector MS3116F14-19S, Plug connector MS27508E18B35P5 202107 and Plug connector MS27508E18B35P G0022A07 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Amphenol Corporation**);
- Servomotor S/N: ZTE0703410BM1146 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Hitec RCD**);
- Servomotor HS-1005SGT for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Hitec USA Group**);
- Servo drive HS-7245MH for Granat-3 UAV (Manufacturer: **HITEC**);
- SRAM RAM IS62WV102416BLL-25TLL DQ5561S1 2143 for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS; integrated circuit ISSI IS61WV10248BLL-10TLI D7TO45X4 1704; integrated circuit ISSI, IS61WV51216BLL-10TLI DOU014X4 1720 (IC SRAM 8 MBIT PARALLEL 44 TSOP II) for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Integrated Silicon Solution**);
- 32-bit binary counter DS1374C-33 2029A2 255BD for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS; Temperature sensor DS18S20 DS1820 1641C4 for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Dallas Semiconductor**);
- Standard clock oscillator CTS23CB3 50M0000 1811 313, Quartz clock generators CTS23CB3 50M0000 1811 313, CTS17CB3 50M0000 1836 313 and CTS23CB3 50M0000 1913 313 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **CTS Corporation**);
- Intelligent module of the 5th generation SX-5 S2737E-01 R77705PY 1950 N TWN (БПЛА «М...»), Not identified 12000080 NAH 2144 + for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Hemisphere GNSS**);
- Potentiometer (variable resistor) TS63Y for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Vishay Intertechnology**);
- Microcircuit SGM1608WIM for X-47M2 "Kinzhal" (Manufacturer: **Nelson**);
- Integrated power management circuit MMPF0100 NPANES XAARFX, Processor MCIMX6L2EVN10AC XAA2138 TAIW RLAAXN for UAV Shahed-136 (Geran-2, 157 components); PCM codec filter (MC145); Power limiter (PE45361) for Portable satellite communications station R-438-M "Belozor"; Pressure sensor MPXA4115A for UAV "Zala 421-16E"; Pressure sensor MPXAZ6115A for UAV "Eleron-3SV"; Pressure sensor MPXAZ6115A for UAV "E95M" air target type (No. 816); Pressure sensor MPXA4115A for Strike UAV "KUB-BLA"; Field MOSFET transistor MW7IC2425GN QQ 13 17 AG for Granat-3 UAV; Pressure sensor (MPXHZ6115A) for UAV "Kartograph" (Manufacturer: **Freescall Semiconductor**);
- Modular connector HFJ11-E1G01E-L12 2026RL for UAV Shahed-136 (Geran-2, 157 components); Microcircuit TG1G-E001NY 2024LF; Transformer HALO TG1G-E001NY; Digital signal converter HALO TG1G-E001NY 2132LF for 3M-14 type cruise missile of the Kalibr missile complex (Manufacturer: **HALO Electronics, Inc.**);
- IDT integrated circuit QS32X861Q1G Y51731T A73524PY; High-speed CVOS 20-bit bus switch with flow separation QS32X861Q1G for X-47M2 "Kinzhal"; Processor 79R3031E - 40DL, XC0124P; Microcircuit ALVC 164215 A3X3 – 0411270, Microcircuit 7005 S55JI VO92IP, Microcircuit IDTTM 7005 S55JI VO921P for Missile type 9M727 of the Iskander-K operational-

⁸ A company called TE Connectivity (without Ltd) is listed as Swiss for other products

tactical missile system; microcircuit IDT TM 7005 S55JI VO921P for Operational-tactical missile complex "Iskander-K"; Processor 79R3031E -40DL, XC0124P; microcircuit ALVC 164215 A3X3 – 04 11270; microcircuit 7005 S55JI VO921P for Operational-tactical missile complex "Iskander-K"; ARM processor RC64475 for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; The interface board is specialized CA91C142D-33CEV for Automated radio jamming station R-330 BMW; Microcircuit IDT71016 for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"; Microcircuit IDT71016 for Army self-propelled gun 2S5M "Hyacinth-S"; Schmitt Inverter Trigger 6-element CMOS 14-pin TSSOP; Microcircuits LT 1019 e3 LTC1594LIS; CMOS STATIC RAM 256K (32 thousand x 8-bit) IDT QS3253 QG X51330D; n/a 9R3081E-40DL X4C0537P SCD7171 (D1) for Strategic aviation cruise missile of the X-101 type; Microcircuit QS32X861Q1G for UAV "Kartograph"; RISController Embedded 64-bit microprocessor built on RISCORE 4000 RC64475 for 3M-14 type cruise missile of the Kalibr missile complex; Microcircuit IDT71016 for 2S19M1 "Msta-S"; Microcircuit (processor) 1890BM2T; Chip (buffer driver) IDT49FCY 3605APYGI 13390 P34519UYCF; Chip (fast buffer line driver) IDT 74FCI 164245TPAG NB51245; Microcircuit (high-speed bus switch) IDT Q33245QG Y1225D P23657M; Microcircuit IDT Q83245QG Y513270 P32200FM CN; IDT 71024 chip (1Mb static RAM (128K x 8-bit)) S15TYG. M513441 A49311FM TWN CV; IDT 74FCT chip (fast cmos 1-of-8 decoder with enable) 16543ATPAG NE1334J; Microcircuit RC64475 for Aviation strategic cruise missile Kh-101 (Manufacturer: **Integrated Device Technology**);

– Solid state relay 88E1111-BAB1 G43A971A.1JW 2025 B2P for UAV Shahed-136 (Geran-2, 157 components); Condenser BCAP0010 P270 S01 ESHSR-0010C0-00SR7 2.7V 10F for UAV "Lancet"; Microcircuit 88E111-BAB1 G25853YA 2JW for 3M-14 type cruise missile of the Kalibr missile complex; Gigabit Ethernet (GbE) transceiver Marvell® Alaska® 88E1512 NAUP98.09JW 2235 A0P TW for Autonomous signaling system "Radio Barrier"; Microcircuit M 88AP320-BGR2 PSA 1120 1 SW 1332 COS SGE806 YN-21 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; 88SA8052-TBC2 for UAV "Kartograph"; Solid state relay 88E1111-BAB1 G43A971A.1JW 2025 B2P for Unmanned aerial vehicle "Shahed-136" (GERAN-2); Integrated transceiver 88E1111-BAB GBV5251 1JW; Network controller 88E1111-BAB1 for 3M-14 type cruise missile of the Kalibr missile complex (Manufacturer: **Marvell Technology Group**);

– Ultracapacitor BCAP0010 P270 S01 for Strike UAV "KUB-BLA" (Manufacturer: **Maxwell Technologies**);

– Radio modem XTP9B-DPS-001 for UAV "Kartograph" (Manufacturer: **Digi International Inc**);

– FLASH memory 45DQ161 SSHF for UAV Shahed-136 (Geran-2, 157 components); Microcircuit AT25DF641 for UAV "Zala 421-16E"; Microcircuit Adesto1336 45DB321D SU for Granat-3 UAV (Manufacturer: **Adesto Technologies**);

– Octal buffer/line driver VHC (541 PPIN), Optocoupler (optocouple) of high voltage H11G1 845Q for UAV Shahed-136 (Geran-2, 157 components); Transistor MC33269DT-3.3G for 3M-14 type cruise missile of the Kalibr missile complex; Microcircuit 33171 PMWK for Electronic computer "BAGET-43"; Microcircuit ACT244 for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Diode pair B20100G; Transistor NTD20N06L for Equipment GLONASS and GPS for individual Breeze-KM-I (index 14C853) for individual use; Transistor FDMC510P for Navigation equipment for individual use "Orion" (index 14C8009); Schottky diode (B20100G); Schottky diode (B20200G) for Portable satellite communications station R-438-M "Belozher"; AND logic (NC7S08) for AR-2C "Arakhis" radio station; Transistor FDD6637 for UAV "Zala 421-16E"; Intermediate frequency switch MC3359P for Search receiver R-168PP; microcircuit HC4046AG for Portable VHF radio station R-168-5UN-2; Switch JFET transistors B25 on J112G for Strategic aviation cruise missile of the X-101 type; Transistor 4H11G;

Diode MUR120 1132 for *T-72B3 tank*; Transistor (ON) C14 B34 for *Granat-3 UAV*; Analog multiplexer 140538BG AK3F01; Analog multiplexer (14053BG); Multiplexer/demultiplexer of analog signals MC14053BG; Frequency divider (12093PWCF); Loop of phase auto-adjustment of frequency (MC14046B); Digital-analog converter (MC14051BG); Analog multiplexer (14052BG) for *Portable radio station R-392, code "Peanuts"*; Octal buffer/line driver designed for use as memory and address drivers, clock drivers, and bus-oriented VHC transceiver (541 PPIN); for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Switching controller UC3844BDG PLRH32 for *Printing device UD-M312*; Transistor 269-3G RMH17 for *3M-14 type cruise missile of the Kalibr missile complex*; Switching controller UC3844BDG PLRH32 for *Printing device UD-M312* (Manufacturer: **ON Semiconductor (ONSEMI)**);

- Microcircuit 32S12A for *Electronic computer "BAGET-43"* (Manufacturer: **Pericom Semiconductor Corporation**);

- WiFi and Bluetooth module TIWI-BLE p/n 450-0064 for *Navigation equipment for individual use "Orion" (index 14C8009)* (Manufacturer: **Laird Connectivity**);

- Microcontroller STM32F103RFT6 for *UAV "Mohajer-6"*⁹; Microcircuit M29W040B 90K1 7B287 V5 PHL 88 717 for *Electronic computer "BAGET-43"*; Microcontroller STM32F107VCT6 for *Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Linear Accelerometer LIS3LV02DL; Microcontroller STM32F103C8T6 for *UAV "Zala 421-16E"*; Microcontroller STM32F for *UAV Takhion*; Microcontroller STM32F for *UAV "Eleron-3SV"*, for *UAV "E95M" air target type (No. 816)*, and for *Strike UAV "KUB-BLA"*; Microcontroller STM32 for *Strike UAV "KUB-BLA"*; Microcircuit M29W040B for *Army self-propelled gun 2S5M "Hyacinth-S"*; Microcircuit HCF4094 for *Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"*; Flash memory M29W320DB; Flash memory M25P10 25P10VP; GPS navigation receiver GLONASS STA8088F ML8088s; Power RF transistor PD55008, 9929C 845, MYS; for *Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; Microcontroller ARM STM32L152 RBT6 6H22R V6 CHN GH 326 for *Granat-3 UAV*; Camera microprocessor XILINX SPARTAN XC3S50AN for *UAV "Kartograph" for 3M-14 type cruise missile of the Kalibr missile complex*; Microcontroller M5-1-4 in the case TQFP44; HDMI switcher with configurable HPD output STHDLS 101T A172 9900U VJ MYS 324 for *Corsair UAV*; (Manufacturer: **STMicroelectronics**);

- High-precision reference voltage source VRE3025J for *X-47M2 "Kinzhal"*; (Manufacturer: **Apex Microtechnology**¹⁰);

- NOR flash memory with system volume programming EPCQ256N G0116 V for *Autonomous signaling system "Radio Barrier"*; Wide-Scope Transistor NPN BFG541 for *Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"* (Country: USA, Manufacturer **not specified**);

EU & European countries

from Germany: 27 Manufacturers

- Field effect transistor FR 5305 P748D HW K3 for *Inertial measuring unit of the 9M544 MLRS Tornado-S rocket*; Transistor F3710Z MOSFET for *Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK)*; Power switch (S50085A); Field transistor (IRLS3034-7P) for *The Silok-01 electronic warfare (EW) system*; Transistor IRFH7085; Transistor IRLR7843PbF; Transistor IRFH7085; Microcircuit BTS555; Microcircuit IRS21867S for *UAV "Zala 421-16E"*; Buffer CY2309ZXI CY2309ZXI-1H *Portable KH/VHF radio station R-353NK Code "Namotka-KS"*; IC transistor 340N08NS 4RK333 for *Granat-3 UAV*; Mosfet

⁹ This product in the source is listed as an American company, is the company Swiss or US

¹⁰ This product in the source is listed as an American company; the company is Japanese or US

transistor FR 20V IOR P547J; Mosfet transistor FR540Z P643G 8X 8B *for Block of automation of communication management BAUS2*; MOSFET type transistor IRFB4410 P410P NYEL; MOSFET type transistor IRF54410Z P6340 7CPJ *for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (LJ12.209.029)*; Inferion Optimos 3 Power-MOSFET 042N03LS HAD 342; Inferion Optimos 3 Power-MOSFET 020N03LS HST350 *for Corsair UAV*; 16-bit single-chip microcontroller Infineon SAF-XC164CS -16F40F *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **Infineon Technologies AG**);

– Electric fuel pumps *for UAV Shahed-136 (Geran-2, 157 components)* (Manufacturer: **Pierburg**);

– Microcircuit MA U C_145; Microcircuit IC NQI V3 *for Combat attack helicopter Ka-52, code: "Alligator", index "800.06"* (Manufacturer: **IC Haus GmbH**);

– Cooler ebmapst 8414 NML 24V DC 1.1W *for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (LJ12.209.029)* (Manufacturer: **Ebmpapst**);

– Engine 3W-55Xi (CS) *for UAV "Kartograph"* (Manufacturer: **3W Modellmotoren**);

– Automatic switches 1610-21-5A (1610-21-10A, 1610-21-15A, 1610-21-20A, 1610-21-25A, 1610-21-30A) *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **E-T-A Elektrotechnische Apparate GmbH**);

– Clutch ZF Sachs of the model MFZ-430 *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **ZF Sachs AG**);

– Integral converter MAX748AEWE *for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"* (Manufacturer: **Mouser Electronics**);

– Transmission ZF 9S1310 TO; Distribution box ZF VG 750/270; Reverse switch 0501.210.058; Neutral switch 0501.216.474 *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **ZF Friedrichshafen AG**);

– Brake pads Jurid 539 ff 39 *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; for ZSA-T "Linza" No. Z87539490M0000034, and for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Jurid**);

– Power steering pump (power steering) 7679955618 *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"*; Steering mechanism ZF 8098.965.212 (C700VW717-110) *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **ZF Lenksysteme**);

– Power steering reservoir (steering) *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **ZF Boge Elastmetall GmbH**);

– Fuel filter (engine fuel supply system) WDK 962112 *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Mann-Filter ("Mann+Hummel GmbH")**);

– The locking mechanism of the armored escape hatch *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Eberhard Manufacturing Company**);

– Brake mechanism model SN7307 series SN7 (brake system); Front wheel brake disc (brake system); Front brake chamber K002623N00 series SN7 (brake system); Rear brake chamber K004052N00 series SN7 (brake system) *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"*; Brake calipers in knorr-bremse assembly SN7307 (SN7317); Brake pneumatic chambers knorr-bremse BS3514 (BS3514) *for ZSA-T "Linza" No. Z87539490M0000034* (Manufacturer: **Knorr-Bremse AG**);

– Damper of torsional oscillations of the PNVТ (high-pressure fuel pump) drive *for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Hasse&Wrede GmbH ("Knorr-Bremse Group")**);

– Servo drive *for UAV "Eleron-3SV"* (Manufacturer: **Arwico**);

- Air blades for UAV "Eleron-3SV" (Manufacturer: **Graupner**);
- Bearings for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **FAG Kugelfischer Georg Schafer AG**);
- Push button switch for UAV Shahed-136 (Geran-2, 157 components); Bosch boost pressure sensor 281002576; Common Rail CR Bosch High Pressure Fuel Pump (Engine Fuel Supply System) 445020089; Accumulator fuel supply system (Common rail); Starter HEF 95-L24V(0001 241 016) for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Starter relay Bosch 1337210812 for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Bosch**);
- DC/DC converter (PI3303-20) for The Silok-01 electronic warfare (EW) system (Manufacturer: **Picor Corporation**);
- Inductance coil (FPT705-230) for The Silok-01 electronic warfare (EW) system (Manufacturer: **Coiltronics / Eaton**);
- Electrolytic capacitor B41851 35V 1000μF, Metallized film capacitor EPCOS B7153 A027 21502/C for UAV-kamikaze Shahed-136 of Russian production for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **EPCOS AG**);
- Current sensor M9 S4 4658 X029 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Vacuumschmelze**);
- Power Inductor (CMD) 744314047 D4Y30K for UAV Shahed-136 (Geran-2, 157 components); Telecommunication transformer S05100111 for Automated radio jamming station R-330 BMW; LAN Transformer WE 749020010 1017; High current inductor WE-HCI SMD WE744311220 TO320 for Corsair UAV (Manufacturer: **Wurth Elektronik GmbH & Co. KG**);
- Connectors 940 1226 17050952401 and 234 0724 02021602301; Corner socket 492 A US 1218 09031966921 for Missile type 9M727 of the Iskander-K operational-tactical missile system; In the corner nest 492 A US 1218 09031966921 for Operational-tactical missile complex "Iskander-K" (Manufacturer: **HARTING**);
- Shovels for Strike UAV "KUB-BLA" (Manufacturer: **Aero Naut**);

from Great Britain: 9 Manufacturers

- Electric fuel pumps TI Automotive 20T308 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **TI Fluid Systems** (made in Poland));
- Microcircuit GOLLEDGE 18.432MГц GXO-U100F/BI MS07753 JM for Electronic computer "BAGET-43" (Manufacturer: **Golledge Electronics Ltd**);
- Radio frequency transistor SML D1002 UK CK1709Y for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (ИЛТ.209.029) (Manufacturer: **TT electronics Semelab**);
- Position sensor (CMS300) for UAV "Kartograph" (Manufacturer: **Silicon Sensing System Limited**);
- Safety belt of an explosion-proof seat for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **SECURON**);
- DC-DC converter PSD-0509 PSD-0509D; DC-DC converter PSD-0509D; Electronic component PEAK, PSD-1215D, 1825; Electronic component Peak PSD-0509D 1821 for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Peak Electronics**);
- Microcircuit FTDI 1811-C E8615601 FT232RL for T-72B3 tank (Manufacturer: **Future Technology Devices International Ltd**);
- Ethernet controller W5300 for UAV "Kartograph" (Manufacturer: **WIZnet Co. Ltd**);
- Microcomputer Raspberry Pi 3 Model B ver 1.2 for UAV "Orlan-10" (Manufacturer: **Raspberry Pi Ltd**);

from France: 7 Manufacturers + for 1 component is Manufacturer not specified

- Car tire Michelin XZL+, (undercarriage) 16.00R20 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Tires Michelin XZL+ for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Compagnie Générale des Établissements Michelin**);
- Car suspension elements for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Pendant without a number for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Texelis**);
- Board CONTROP for "ORLAN-10" UAV (Manufacturer: **Controp**);
- Connector SOURIAU FR JD3899/26WB355SN for T-72B3 tank (Manufacturer: **Souriau**);
- Switch APEM 12244AX408 for T-72B3 tank (Manufacturer: **Apem**);
- Tact button marked France for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **C&K**);
- Stirling rotary cooler Thales RM2-71/02 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Thales**);
- Micro switch for T-72B3 tank (Manufacturer: **not specified**);

from Sweden: 4 Manufacturers

- Film capacitors PHE 426 400~ for Missile type 9M727 of the Iskander-K operational-tactical missile system; Film capacitors PHE 426 400~ for Operational-tactical missile complex "Iskander-K" (Manufacturer: **RIFA**);
- Hydraulic planetary winch for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Sepson AB**);
- Video encoder AXIS M7011 for UAV Takhion; Video encoder cover M7011 for "ORLAN-10" UAV (Manufacturer: **Axis Communications**);
- Air conditioner compressor Volvo B709A S12 for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Volvo**);

from Ireland: 3 Manufacturers

- Taoglas dual-band patch antenna CGGP for Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna); Taoglas GPS signal receiver CGGBP.18.4.A.02 for UAV-kamikaze Shahed-136 of Russian production; GPS-antenna CGGP.18.4.C.02 T-003 CGGP.18.4.C.02 T-003 for UAV "Orlan-10" (Manufacturer: **Taoglas**);
- Hinges of the hatch of the company's evacuation production Pommier Furgocar Srl for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Pommier Furgocar SRL**);
- Split-type guide bridges; Front suspension arms D95107-0401-058B, D95107-0402-046B, D95107-0401-058 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Swivel knuckles of the front suspension, without a number for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Timoney Technology Limited**);

from Spain: 2 Manufacturers

- Temperature sensor MS03951 for X-47M2 "Kinzhal" (Manufacturer: **SICSSA**);
- Pump for pumping diesel fuel, Gespasa oil EA-90 24B for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Gespasa Fluid Technology**);

from Denmark: 1 Manufacturer

– Exhaust gas treatment system for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Dinex Exhaust&Emission Technologies**);

from Switzerland: 8 Manufacturers

– Voltage stabilizer L7809c2t, ST 78M05, 78M06, Linear regulator 78m05, Linear regulator ST78M05, STM321, STM32F030F4P6 for *UAV "Mohajer-6"*; Diode STIEC45-XXAS for *Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna)*; Microcontroller STM32F 103C8T6 991RA 0293 MYS 99 216, Microcontroller STM32F405RGT6, Voltage stabilizer 78M05 928BX, Fixed and adjustable low-drop positive voltage stabilizers LD1117 for *UAV Shahed-136 (Geran-2, 157 components)*; Miniature relay of high power HF115F 012-2Z4B F01212M, Regulator LD33 E148; STM32F405RGT6, Diode STIEC45-XXAS, Microcontroller STM32F765 VIT6 Z 7B259 VQ PHL 7B 217, Microcontroller ARMY STM32F405 RGT6 7B37M VG PHL 7B 245, Microcontroller ARMY STM32F405 RGT6 AA078 9R TWN AA 045, Microcontroller ARM4 STM32F405 RGTL AA078 9R TWN AA 045 for *UAV-kamikaze Shahed-136 of Russian production*; Microcontroller STM32 F103G8T6 TWN AA1144 STM32F103 for *UAV "Lancet"*; Transistor BCP53 for X-47M2 "Kinzhal"; Microcircuit (non-volatile EPROM memory with a capacity of 16 Mbit, supply voltage during programming from 2.7 to 3.6 Volts) M29W160ET 70ZA6 for *Complex IK144-E "Sectant"*; ARM microcontroller (STM32H743 VIT6); ARM microcontroller (STM32F105); DC/DC converter (ST1S14); ARM microcontroller (STM32F103) for *The Silok-01 electronic warfare (EW) system*; 10 watt MOS transistor (PD84010) for *AR-2C "Arakhis" radio station*; Power transistor with N-channel boost mode PD 55003 990HN 146, MYS; Transistor PD55003 for *Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"*; Reference voltage programming microcircuit 431AI 28M AHZE G4; Reference voltage programming microcircuit 431AI 37M ANE5 G4 for *Strategic aviation cruise missile of the X-101 type*; High-voltage power rectifier STPS20H100CG for *T-72B3 tank*; ARMz microcontroller STM32F407IEH6HPAFWVG KOR HP 122; ARM microcontroller STR912FA W44X6 HPABN V5 KOR HP 311 for *Granat-3 UAV*; Microcontroller with built-in flash memory STM32FH05 RGT6 AA159-98; Very low voltage drop regulator with lf33a inhibit 6KOEX322 for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Microcontroller W47G; Microcontroller M5-2-4 TQFP44; Microcontroller M5-1-4 in the case TQFP44; Memory card M29W320DB; Linear voltage regulator GN 1086 GK1LS925 for *3M-14 type cruise missile of the Kalibr missile complex*; HDMI switcher with configurable HPD output STHDLS 101T A172 9900U VJ MYS 324 for *Corsair UAV*; Microcontroller STM32F103VCT6; GPS/ RTK receiver UBLOX ZED-F9P-01B-01 for *UAV "Orlan-10"*; Microcircuit 431AI 28M HZE Microcircuit (programmable reference voltage) 431AI 37M ANE59 for *Aviation strategic cruise missile Kh-101* (Manufacturer: **STMicroelectronics**¹¹);

– GNSS U-BLOX M10 standard accuracy chip X-M10050-KB for *Transceiver of the global navigation system of satellite positioning "Kometa" (CRPA-antenna)*; GNSS receiver (receiver) NEO-M9N-00B-00 G6200074028 2111 0301 26, GPS tracker chip M8030-KT, Voltage regulator LF33, Microcircuit GNSS u-blox UBX-M9140-KB for *UAV Shahed-136 (Geran-2, 157 components)*; M8030-KT GPS tracker chip B3000A 07078768 2109A3 for *Unmanned aerial vehicle "Shahed-136" (GERAN-2)*; Multi-band high-frequency GNSS antenna ANN-MB-00-00, Receiver of increased accuracy u-blox M10Q for *UAV-kamikaze Shahed-136 of Russian production*; GLONASS/GPS module (NEO-M8Q-0) for *AR-2C "Arakhis" radio station*; GPS module LEA-M8S-0-10 for *UAV "Zala 421-16E"*; GPS module LEA-M8S-0-10 for *Strike UAV "KUB-BLA"*; Ublox receiver module NEO-M8N for *UAV "Supercam-S350"*; GPS module NEO-M8N-0-01; GPS module NEO-M8Q-0-10; Receiver module CAM-M8Q-0-10; Two-port inline

¹¹ The same name is at an American company

piezoresistive monolithic differential pressure sensor NEO-M6N-0-10 for UAV "Orlan-10" (Manufacturer: **U-BLOX**);

– Converter (DC/DC TSM series; 1W; Input: 4.5÷5.5V; Output: 5BDC; Output: 200mA TRACO POWER TSM0505S 1340; DC/DC converter TRACO POWER Input: 18-36VDC Output: 5 VDC/ 4A TEN 20-2411; Electromagnetic relay S2-5V 4A 1/20HP125, 250 VAC 3A 30VDC; Converter (DC/DC TSM series; 1W; Input: 4.5÷5.5V; Output: 5BDC; Output: 200mA TRACO POWER TSM0505S 1740; TRACO POWER Inc:18-26 VDC Out±15 VDC/±265mA TEN 8-2423; DC/DC converter TSM0505S; DC/DC converter TEN 20-2411 for X-47M2 "Kinzhal"; Microcircuit TRACO POWER TSM0505S for Missile type 9M727 of the Iskander-K operational-tactical missile system; Central cross board Tracopower THN 15-2412WI for UAV "Supercam-S350"; Transformer TEN 8-4813WI; Transformer TEN 20-2411; Transformer TSM 0505S for UAV "Kartograph"; Voltage conversion module THN 30-1212 for UAV "Orlan-10"; Microcircuit TSM0505S for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Traco Power**);

– High-power automotive relay (electrical equipment) V23131 J56X408 24V for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Axicom signal relay IM03 5VDC 1708PI; AXICOM relay IM 06 12V DC 110052 1704PT for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (IJJ2.209.029) (Manufacturer: **TE Connectivity**);

– Signal generator (TX3-801BS) 10.000MHz; Thermocompensated quartz generator TX3-801BS 10.000 MHz QCOM1543; Frequency stabilizer (TX3-801BS) for Portable radio station R-392, code "Peanuts" (Manufacturer: **QuartzCom**);

– Flash memory JS28F128J3F75, M7100251 (at 128 Mbit) for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Numonyx**);

– n/a Micro Cristal MCSO-B E/D 16MHz 0839 o 527 for T-72B3 tank (Manufacturer: **Micro Crystal AG**);

– Direct current relay AXICOM IMO6 12 V DC for Mobile artillery reconnaissance and fire control point IB119 "Rheostat" (Manufacturer: **AXICOM**¹²);

from Belgium: 1 Manufacturer

– Sound generator SMA-21LV for "ORLAN-10" UAV (Manufacturer: **Sonitron**);

from Canada: 5 Manufacturers

– Adaptive cable equalizer Gennum GS 2984 for UAV "Mohajer-6" (Manufacturer: **Gennum Corp.**);

– Ceramic GPS/GLONASS antenna 11-0020-8 for UAV "Mohajer-6" (Manufacturer: **Talisman**);

– DC/DC converter (AM1LS-0505S-NZ) for The Silok-01 electronic warfare (EW) system; Converter AM2G-2405SZ AIMTEC CrBelofor Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"; Converter: DC/DC; 2 W; U_{in}: 18÷36V; U_{output}: 5 V DC; Output: 400 mA; SIP8 AM2G-2405SZ AIMTEC¹³ for ZSA-T "Linza" No. Z87539490M0000034; Microcircuit AM1DR-0505SZ for Army self-propelled gun 2S5M "Hyacinth-S" (Manufacturer: **AIMTEC**);

¹² AXICOM – there are doubts that this is the name of the company written on the component, maybe this is a component manufactured by the American company TE Connectivity Ltd or the Swiss company TE Connectivity (there this word was included in the name of the component); another company with the name AXICOM is listed for the component Signal relay V23079-A1005-B301 for T-72B3 tank as an American one

¹³ In green is the name of one component.

- GPS/GLONASS ceramic antenna 11-0020-8 for UAV Shahed-136 (Geran-2, 157 components); GPS antenna TALLYSMAN for UAV "Orlan-10" (Manufacturer: **Tallysman Wireless Inc.**);
- Diode couple B20100CT; Dual-function fuse resistor F5210S for X-47M2 "Kinzhal" (Manufacturer: **Integrated Rectifier Technologies Inc.**);

from Netherlands: 5 Manufacturers

- LPC2138FBD64, Microcircuit MW7IC2725NBR1, Transformer LPC1768FBD100 for UAV "Mohajer-6"; 4-bit transceiver VC4T245 89300H4 YnD18 35A for Equipment for consumers of information of satellite navigation systems SN-99M of cruise missiles 3M-14 "Caliber", X-101, "Iskander-K" and 9M544 rockets to the Tornado-S MLRS; Inverter microcircuit 74PC04B CRY20404 EtB2105Y, Inverter microcircuit 74HC0BD C1T535B5 TXXD2222E for UAV-kamikaze Shahed-136 of Russian production; Microcircuit NXP 74AHCT14D L8D1Z006 UnG0838B, Microcircuit 74HC74D L7H8R523 Un60748H, Microcircuit 74HC40103D L9E6W209 Un60946A, Microcircuit HEF4013BT AP830-2.0 Un NO4497, Microcircuit CAR LM29 6M-5 for Electronic computer "BAGET-43"; Chip (double D-type set-and-reset flip-flop; positive-edge flip-flop) 74HC74D 12L 341 UXD 133011, Microcircuit (four-channel OR gate with 2 inputs) 74HC32D, Microcircuit (four-channel OR gate with 2 inputs) NXP HC32D L2E32806 UnD1323D for Complex 1K144-E "Sectant"; ARM processor LPC3180FEL320 for Equipment GLONASS and GPS for individual Grot-M (index 14C822) for individual use; 75 watt MOSFET (AFT05MP075N) for AR-2C "Arakhis" radio station; Pressure sensor MPXV5010GP; Microcontroller LPC2368fbd100 (LPC2368FBD100); Microcontroller LPC2362FBD100 for UAV "Zala 421-16E"; RF transistor MW7IC2425GN for UAV Takhion; Pressure sensor MPXV5010DP for UAV "Eleron-3SV"; Pressure sensor MPXV5010DP for UAV "E95M" air target type (No. 816); Microcontroller LPC2368FBD100; Pressure sensor MPXV5010GP for Strike UAV "KUB-BLA"; Pressure sensor MPXV5010DP for UAV "Eleron-3SV"; Microcircuit SA63GDK; Microcircuit HEF4053BT; Microcircuit C16C2552BIA CCD495 TuD1322D for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat"; Microcontroller LPC1769FBD100; PCM codec filter MC145481SD; microcontroller NXP LPC1769FBD100, SKA210.1 ZSD1822A (ARM Cortex-M3); microcircuit MC145, 481SD 5TK349 (PCM Codec – Filter) for Portable KH/VHF radio station R-353NK Code "Namoika-KS"; microcircuit 74HCT 4066D for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; microcircuit NXP Lpc2131fbd64/01 smp934.1 zsd1851f for T-72B3 tank; HF mixer (SA607DK); Loop of phase auto-adjustment of frequency (74HC4046AD); Radio frequency modulator (MC373) for Portable radio station R-392, code "Peanuts"; Static pressure measurement sensor MPX4115; Two-port inline piezoresistive monolithic differential pressure sensor MPXV5004DP for UAV "Orlan-10"; Microcircuit MC68040RC40A L88M QUV 1332 (32-bit microprocessor with cache memory); Microcircuit (receiver with eight-time latching and double inclusion (3 states)) 74ABT543AD L7A2H6 01 UnG1237C; Microcircuit (quadruple buffer, 3 states) 74ABT1250 L2R0R301 UnD1336A for Aviation strategic cruise missile Kh-101; Microprocessor MCIMX516AJM6C; Integrated power management circuit MC13892CJVL for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **NXP Semiconductors**¹⁴);
- 74HC54 1D for UAV Shahed-136 (Geran-2, 157 components); Microcircuit VCH162245A RK 20284.106 s XD 1348C for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; 16-bit microcircuit LVCH1622444 for Strategic aviation cruise missile of the X-101 type (Manufacturer: **Nexperia**¹⁵)¹⁶;

¹⁴ The same company is marked for other components as American

¹⁵ The same company is marked for other components as American and Chinese

¹⁶ The fact that the components for weapons are listed in the electronic database of the NSDC with an indication of the country, but without an indication of the manufacturer (if it has not been established), gives reason to believe that

– The crane of the hydraulic mechanism for raising and lowering the car cabin for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Power-Packer**);

– Angle sensor of the system of adjusting the level of the hydropneumatic suspension of the car; The electronic control unit of the hydropneumatic suspension level adjustment system of the car for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **VSE**);

– Microcircuit 74HC74 for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"; Microcircuit 74HC74 for Army self-propelled gun 2S5M "Hyacinth-S"; 20-bit level-shift bus switch with 10-bit output resolution CBTD16210 for Strategic aviation cruise missile of the X-101 type; Low voltage high efficiency low voltage FM mixer SA607DK CO45109 Fnr409B; Frequency Converter NXP SA607DK for Portable radio station R-392, code "Peanuts"; D-type double trigger for 2S19M1 "Msta-S" (Manufacturer: **Philips**);

from Italy: 5 Manufacturers

– Pneumatic drive for opening and closing cabin doors for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Camozzi Automation S.P.A**);

– Fastening (loop) of the armored escape hatch for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"*; Hinges of the hatch of the company's evacuation production Pommier Furgocar Srl for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Pommier FurgoCar SRL**);

– Air conditioner cooling fan Comex Ventilator F31-P24E8002 /E-13S WPS for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"* (Manufacturer: **Comex Europe**);

– Dual-band antenna HP 2070 for Portable radio station R-392, code "Peanuts" (Manufacturer: **SIRIO Antenne**);

– Fuel coarse filter with fuel heating 6W.55.388.20.A1 for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **UFI Filters SpA**);

from Uzbekistan: 1 Manufacturer

– Microcircuits 286ЕП3 and 286ЕП4 for 3M-14 type cruise missile of the Kalibr missile complex (Manufacturer: **ОКБ "Фотон"/ Experimental Design Bureau "Foton"**);

from Turkey: 1 Manufacturer

– Cardan shaft (main, additional) of the car transmission for *Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K"*; Cardan transmission Tirsan Kardan for ZSA-T "Linza" No. Z87539490M0000034 (Manufacturer: **Tirsan Kardan Campus**);

if companies with the same name are listed as manufacturers from different countries (the products of these manufacturers do not match!), then these are really different companies from different countries with the same name or branches, subsidiaries or something similar. Nevertheless, what are these - subsidiaries with different products or a human factor (error in the electronic database?!). The affiliation of such companies to certain countries should, in my opinion, be verified, at least in the trade register of the countries. We do not exclude technical errors, but it seems more reliable to us that the same companies are registered as manufacturers in two countries for different types of products.

from Austria: 1 Manufacturer

- TDC-GP22 2111 for UAV "Mohajer-6" (Manufacturer: **Acam Messelectronic GmbH**);

from Poland: 1 Manufacturer

- Potentiometer CW-18 for "ORLAN-10" UAV (Manufacturer: **Telpod**);

OTHER COUNTRIES

from Japan: 31 Manufacturers + for 4 components is Manufacturer not specified

- Audio/video encoder MB86391 1048 z42 for UAV "Mohajer-6"; Electromagnetic relay F.T B4CB4.5Z 0624B8 for Portable VHF radio station R-168-5UN-2; Electromagnetic relay B4CB.5Z for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1" (Manufacturer: **FUJITSU**);
- Silicon N-MOSFET transistor K1158 EH, 5A 1901 for Portable KH/VHF radio station R-353NK Code "Namotka-KS"; RISC processor microcircuit RISController RC64475 13 47 for Strategic aviation cruise missile of the X-101 type; Two-way transceiver with protocol RS-232/RS-485 ISL 3333 IRZ H949CTK for Corsair UAV; Attenuator of the type F1912 for UAV "Orlan-10"; High-speed, synchronous, switchable, two-port, static OZP IDT 70V7339S166BCI 751413P W73436FN1 IND CO for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Renesas**);
- Camera block FCB-EV7520 for "ORLAN-10" UAV (Manufacturer: **SONY**);
- Inertial sensor nvenSense MPU-6000 for UAV "Orlan-10" (Manufacturer: **TDK Corporation**);
- 8-watt amplifier module RA08N1317M for Portable radio station R-392, code "Peanuts" (Manufacturer: **Electrostatic sensitive device**);
- Spark plug CM6 for "ORLAN-10" UAV; Spark plug for UAV "Kartograph" (Manufacturer: **NGK**);
- Electrolytic capacitor for Operational-tactical missile complex "Iskander-K" (Manufacturer: **Nippon Instruments Corporation**);
- Microcircuit 5511MILF 3239448 1332 for Strategic aviation cruise missile of the X-101 type (Manufacturer: **Nasayi Electronics corporation**);
- Connector for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **HIROSE GLOBAL (HIROSE ELECTRIC CO., LTD.)**);
- A component of the block ПYP M204SD02A for Mobile artillery reconnaissance and fire control point 1B119 "Rheostat" (Manufacturer: **Futaba Corporation**);
- Microcircuit EPSON H145H, H224H for T-72B3 tank; Real-time clock module interface (R4543 E D44) for Portable radio station R-392, code "Peanuts" (Manufacturer: **Epson**);
- Real Hour Yearbook Module R4543 for Portable radio station R-392, code "Peanuts" (Manufacturer: **Seiko Epson Corporation**);
- Microcircuit D16305GF for Army self-propelled gun 2S5M "Hyacinth-S" (Manufacturer: **NEC (Nippon Electric Company)**);
- 3-pin adjustable current source 0B4RW LM234 Z-3 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **National Semiconductor**);
- Receiver TA8804F, Down converter TA1322FN for UAV "Mohajer-6"; Component 149 P126 for X-47M2 "Kinzhal"; 1242: TLP627-4 for Missile type 9M727 of the Iskander-K operational-tactical missile system; n/a 1242: TLP627-4 for Operational-tactical missile complex "Iskander-K"; TLP126 optocoupler 805 P126; TLP250 optocoupler 1711 TLP250 for Portable KH/VHF radio station R-353NK Code "Namotka-KS"; microcircuit 74HC573D, L2D5S8, UXD1249G for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1"; (Manufacturer: **Toshiba**);

– NCR18650B for UAV "Mohajer-6"; Battery type NCR18650B for UAV Shahed-136 (Geran-2, 157 components); Card reader for installing an SD card FCI SD Card P113421B01-V3 for UAV-kamikaze Shahed-136 of Russian production; Relay 4A 1/20HP125 for X-47M2 "Kinzhalt"; Video camera Panasonic GP-MH310-3S Afor UAV Takhion; Relay 4A 1/20HP125 250VAC for UAV "Kartograph"; Signal relay (ATX203SA) for Portable radio station R-392, code "Peanuts" (Manufacturer: **Panasonic**);

– Tantalum capacitor 226E for UAV "Mohajer-6"; Tantalum capacitors 226D 98LU1, 476V 51LB1, 476V 91461, 337 A 40J24/70L23, 476V 405J0 and 226D 00E55, Tantalum capacitors (BpLA "M...") 106V 80502 for UAV Shahed-136 (Geran-2, 157 components); Tantalum capacitor 106D 905A1 for T-72B3 tank (Manufacturer: **Kyocera Corporation**);

– Electromagnetic relay G2RL-24-CF for T-72B3 tank; FA wireless LAN module WE-MIDCOM 7490200110 WF1339 for Corsair UAV (Manufacturer: **OMRON**);

– Bearings for UAV Shahed-136 (Geran-2, 157 components); Electrolytic capacitor for Missile type 9M727 of the Iskander-K operational-tactical missile system (Manufacturer: **Nippon Thompson CO**);

– Electrolytic capacitors, in particular: Electrolytic capacitor type SMD N3 for UAV Shahed-136; Electrolytic capacitor 16V 10 μ F for UAV Shahed-136 (Geran-2, 157 components) (Geran-2, 157 components) (Manufacturer: **Nichicon Corporation**);

– Integrated circuit 7942 (5AA W03C), Ultra-high-efficiency noise filter type SMD BNX023, Non-isolated DC/DC converter 005 06ERS N0309003 for UAV Shahed-136 (Geran-2, 157 components); A rare miniature non-isolated point-of-load DC converter for embedded applications.005 (06ERS #0306001); Ultra-high-efficiency noise filter of the SMD type BNX023; Integrated circuit 7942 (5AA W03C); Integrated circuit BDGJP 7507 for Unmanned aerial vehicle "Shahed-136" (GERAN-2); Output combined filter for suppression of electromagnetic interference BNX002, muRata amplifier BNX022; Broadband interference suppression filter BNX022 for X-47M2 "Kinzhalt"; Power filter (bnx025) for AR-2C "Arakhis" radio station; DC converter NTE0303MC; DC converter NPH15S2412IC, NPH15S2403IC, NPH15S2405IC for T-72B3 tank; Microcircuit BNX022 for UAV "Kartograph"; Output combined filter for suppression of electromagnetic interference BNX002-01 for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (Ц/И2.209.029); Isolated DC/DC converters with one output NTE0305MC G1415 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Murata**);

– Quartz crystal A4YLR10 for Complex 1K144-E "Sectant" (Manufacturer: **Nihon Dempa Kogyo**);

– Reference voltage source APEX USA VRE3025J 106871116 for X-47M2 "Kinzhalt"; Microcircuit VRE3025JS for UAV "Kartograph" (Manufacturer: **Apex Microtechnology**¹⁷);

– Microcircuit Sanyo LC79401 8URL, Microcircuit LA6324N OT7 for Electronic computer "BAGET-43" (Manufacturer: **Sanyo Semiconductor Co. Ltd**¹⁸);

– The output power amplifier uses a solid-state high-frequency module (RA60H3847M1); Solid-state high-frequency module RA60H3847M1 for The Silok-01 electronic warfare (EW) system; Two-stage amplifier for portable radio stations RA08N1317M 158AT-G; Radio frequency module (RA30H4047M); Radio frequency module (RA30H1317M1) for Portable radio station R-392, code "Peanuts" (Manufacturer: **Mitsubishi**);

– Electrolytic capacitors 16V 470: μ F (M) and 16V 10 μ F (M) for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Elna Co. Ltd**);

– Electrolytic capacitor 16V 470 μ F for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Rubycon Corporation**);

– Inductance coil 101, Inductance coil 10 0E, Inductance coil 150 μ H 150 4436 (Rated current 1.8A Resistance 174 m Ω) for X-47M2 "Kinzhalt"; Inductance coil 150 M60; Inductance

¹⁷ Other products in the source are listed as American by a company with the same name.

¹⁸ The company is listed as American with other products.

coil 220M M36 for Strategic aviation cruise missile of the X-101 type; Power inductor (smd type) 2R5 M1N for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Sumida Corporation**);

– Camera Canon IXUS 175 for UAV Takhion; camera CANON for Granat-3 UAV (Manufacturer: **CANON**);

– The engine is a single-cylinder, gasoline, four-stroke engine FG-40 № ASSS8EAF4222 for "ORLAN-10" UAV; Engine FG-17 for Granat-3 UAV; Saito engine for UAV "Orlan-10" (Manufacturer: **Saito**);

– Carburetor for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Walbro** - Japanese-American company);

– Pivot head with thread IKO, type PHS, Electrolytic capacitor 560 µF for UAV Shahed-136 (Geran-2, 157 components); Microcircuit MB87J2140 0243 Y02 for Missile type 9M727 of the Iskander-K operational-tactical missile system; microcircuit MB87J2140 0243 Y02 for Operational-tactical missile complex "Iskander-K"; Optoisolator (S2801-4) for The Silok-01 electronic warfare (EW) system (Manufacturer: **not specified**);

from the Republic of Korea (R.O.K., or South Korea): 10 Manufacturers

– Schottky rectifier module 82CNQ100ASM for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **XQXAYJR**);

– Compact solid-state microwave amplifier (APCT-0.70-2.70-50-32U) for The Silok-01 electronic warfare (EW) system (Manufacturer: **UWB TECH**);

– Video cameras VTC-Z7833H for UAV "Supercam-S350" (Manufacturer: **Dyna Logic**);

– Microcircuit BL05A PUYRB for Aviation strategic cruise missile Kh-101 (Manufacturer: **KODENSHI KOREA CORP**);

– Chip RCP1500Q03 for UAV "Orlan-10" (Manufacturer: **RN2 Technologies**);

– RAM memory chip K4M51323P for Equipment GLONASS and GPS for individual Grot-M (index 14C822) for individual use; Memory chip DDR1, 512Mb K4H510838J-LCCC for Automated radio jamming station R-330 BMW; Microcircuit K6T0808C1D for GLONASS/GPS satellite navigation equipment GLONASS/GPS transceiver transceiver "GROT-V"; Microcircuit K6T0808C1D for Army self-propelled gun 2S5M "Hyacinth-S"; Microcircuit K6R4016V1D-UI10; RAM memory K4S511632D for UAV "Kartograph"; 256 kbit RAM memory K6T0808C1D-TF70 for S19M1 "Msta-S" (Manufacturer: **Samsung Electronics**);

– Industrial battery for UAV "Zala 421-16E"; Industrial battery INR18650MJ1 +ET234H212A2 for Strike UAV "KUB-BLA"; Accumulator elements INR18650MJ1 for AV "Supercam-S350" (Manufacturer: **LG**);

– Microcircuit IN74HC4094AD 1925 for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **IXEMICON**);

– TV module Vision Hi-Tech VB193C-W for UAV "Eleron-3SV" (Manufacturer: **Visionhitech Co., Ltd.**);

– HC4046 for Portable VHF radio station R-168-5UN-1 Code "Aqueduct-5UN-1" (Manufacturer: **System Logic Semiconductor**);

from Taiwan: 25 Manufacturers

– Flash memory 25Q64JVS1Q for UAV "Mohajer-6"; Flash memory Winbond 25Q16JVIQ 2217 6203 DL900ZZ for UAV Shahed-136 (Geran-2, 157 components); Flash memory Winbond integrated circuit 25G64FVS16 1347; 64 Mbit flash memory 25Q64FVS1Q for X-47M2 "Kinzhal"; Winbond microcircuit W83627HG AW for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Digital potentiometer 87417F2-D/L1 for Automated radio jamming station R-330 BMW; Serial flash memory (16 Mbit) 25Q16JVIQ 2023

6004 5J700ZZ for Unmanned aerial vehicle "Shahed-136" (GERAN-2) (Manufacturer: **Winbond Electronics Corporation**);

- Electrolytic capacitor Hitano 100 μ F 63V for R-170V Exciter of HF-VHF radio transmitters "Artek-Sirius" (UJ12.209.029) (Manufacturer: **HITANO ENTERPRISW CORP**);

- Integrated circuit PEX8618-BA50BC G b1013 NIU811.00C for Corsair UAV (Manufacturer: **PLX Technology**);

- Electrolytic capacitor PC3AB LGX11 for Aviation strategic cruise missile Kh-101 (Manufacturer: **Ligitek Photovoltaic Co., Ltd**);

- Unipolar DC/DC power converter MCWI03-24S12 for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Minmax Technology CO (MINMAX)**);

- Filter on surface acoustic waves TQP3M9009 for UAV "Mohajer-6"; Bandpass filter on surface acoustic waves TA1163A for UAV "Orlan-10" (Manufacturer: **Tai-Saw Technology**);

- Electronic component LTCYM 9E00 e3 for Portable KH/VHF radio station R-353NK Code "Namotka-KS" (Manufacturer: **Lite-On Technology Corporation**);

- Microcircuit NANYL 1202 NT6DM32M16AD-T31 115494Z1ELL TW for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets" (Manufacturer: **Nanya Technology Corporation**);

- RAM 2 GB DDR2 Transcend for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Memory Card Transcend CompactFlash 133x 16 Gb for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Transcend**);

- Memory 256 MB (32 MB x 8) MX29GL256FHT21-90Q for X-47M2 "Kinzhal"; Memory chip MX29LV040C1C-706 for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Flash memory chip MX29LV040CQ1-70G 4M - BIT [512K x 8] CMOS; Microcircuit MX B134515 29LV040CO1-70G 3P159200 for Aviation strategic cruise missile Kh-101; 4 megabit flash memory B152915 29LV040CQI-70G 3S343000 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Macronix International**);

- High-performance fully static 32-bit X86 processor DM&P Vortex86DX® 1711-D-PBGP CFA-4K8619 ISOinChip®; System on a crystal, built on an x86-compatible core Vortex86DX for X-47M2 "Kinzhal"; Microcircuit Vortex86DX for UAV "Kartograph" (Manufacturer: **DM&P Electronics**);

- Transistor ME4542GA36-1 N and channel transistor P 30B (D-S) Mosfet for UAV "Lancet"; P-channel 60 V (DS) MOSFET FR5305 for 3M-14 type cruise missile of the Kalibr missile complex (Manufacturer: **VBsemi Electronics Co., Ltd**);

- Capacitor TEAPO 220 μ F 160V for UAV-kamikaze Shahed-136 of Russian production (Manufacturer: **TEAPO**);

- Voice codec W681360RG for Portable satellite communication station P-438-N (Manufacturer: **Nuvoton Technology**);

- Display BL12864GERNHn\$ Bolymin QC OK 1311205019 140317 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets"; Monochrome OLED display with Bolymin passive matrix and built-in controller SSD1303 for Combat attack helicopter Ka-52, code: "Alligator", index "800.06" (Manufacturer: **Bolumin Inc (or Bolymin)**);

- Oil seals for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **NAK (Taiwan)**);

- Amplifier TC3133 1406 for Basic set of the intelligence, management and communication complex of military intelligence KRUZ-VR "Strilets" (Manufacturer: **Transcom Inc**);

- Fan FFB9025BVHE for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Delta Electronics, Inc**);
- Microcontroller VIVOTEK (VVTk-8112P) 2033 7SQV13746.26.7) for Autonomous signaling system "Radio Barrier" (Manufacturer: **VIVOTEK INC.**);
- Single port transceiver IP101GR 2137011 PDC №479.00 for Autonomous signaling system "Radio Barrier"(Manufacturer: **IC PLUS Corp.**);
- Fit Fintek F85226FG for Operator terminal of the software and hardware complex for armoured vehicles of the Unified Control System of the Sozvezdiye Tactical Link (hereinafter referred to as the USS TK); Integrated chip Finntek FB 1216AII-I A2071A1 010 z 1 for Corsair UAV (Manufacturer: **Finntek**);
- Switch controller Realtek RTL8305SC for UAV Takhion (Manufacturer: **Realtek**);
- Flash drive 8 GB INDUSTRIAL CF6 for Automated radio jamming station R-330 BMW (Manufacturer: **Apacer**);
- Microcircuit 74ABT2150 LOH170 02 UnG1147A; Microcircuit ART573A 1K21L.602 UnG304B for Aviation strategic cruise missile Kh-101 (Manufacturer: **UN Semiconductor**);
- Microcircuit 150 M60 for Aviation strategic cruise missile Kh-101 (Manufacturer: **Productwell Precision Elect. Co**);

from Thailand: 1 Manufacturer

- Electronic thermostat with a sensor ETC-24 5400003601 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Formula industries Company Limited**);

from Iran: 1 + for 1 component is Manufacturer not specified

- High-voltage contact tip for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer: **Oje Parvaz Mado Nafar MADO (Iran)**);
- Board RC TABESH19 BN215_PWB/Jul20-V2.2 for UAV "Mohajer-6" (Manufacturer: **not specified**);

from Israel: 1 Manufacturer

- Explosion-proof landing seats "Plasan Terra"; Car armoring (Combined: armored steel and ceramic armor protection) for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **Plasan Sasa Ltd**);

from Philippines: 1 Manufacturer

- Transistor CBH CLF1G0060-30 for Automated station for placing obstacles ASP R-330Zh "Zhitel" (Manufacturer: **Ampleon**);

from Hong Kong: 3 Manufacturers

- TAO970A for UAV "Mohajer-6" (Manufacturer: **OMO Electronic Components**);
- Runcam Owl Plus FPV Camera Review – Night Flying TAO970A for UAV "Mohajer-6" (Manufacturer: **Runcam**);
- LM317 for UAV "Mohajer-6" (Manufacturer: **E-Tech Electronics LTD**);

from not specified: Manufacturer & country: not specified

- Airspeed sensor for UAV Shahed-136 (Geran-2, 157 components) (Manufacturer&country: **not specified**);

from Belarus: 2 Manufacturers

– Socket for external engine start (electrical equipment) 600А 24В ПС-315-100Р for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **ОАО Радиотехника**);

– Multifunctional monitor (on-board information and control system of the car) №1 МФМ НКШР 467846.017-01 and Multifunctional monitor (on-board information and control system of the car) №2 МФМ НКШР 467846.017-01 for Multi-purpose armored vehicle of increased security KamAZ-63968 of the family of unified armored vehicles "Typhoon-K" (Manufacturer: **СКБ Запад**).

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