



# NES-TSOFA

## NEW GENERATION UAV

### ► HIGHLIGHTS

Type : Class Mini, Multi rotors, 4 rotary wings

FPV Camera : 8MP MIPI CSI-2 tiltable camera: HD (1280x720), 1080p (1920x180), 4K UHD (3840 x 2160)

Payload Transport Version : CargoBay 2.5 lt or Optional 14 lt

Payload Surveillance Version and Camera / Compatible Gimbals\*  
Lidar; Daylight/IR; Multispectral; Hyperspectral; RF Catcher; Gas/NBCR Detector; etc.

Dimensions (unfolded) in mm :  
630 (L) x 980 (Frame Size) x 450 (Max H)

Dimensions (folded) :  
630 (L) x 540 (Frame Size) x 450 (Max H)

Max. Take-Off Weight : 10Kg

Max. Payload : 3 Kg (Reduced flight time)

Max Flight Time : (up to) 60 minutes with 1.5 Kg payload

Max Speed Cruise Speed : (up to) 112 Km/h - 31 m/s 16 m/s

Max wind resistance : Designed to meet 40 Km/h

Operating Temperature Range :  
Designed to meet -25° C / +55° C Desert Kit Option

Auto Pilot : FAA TSO certified, tested to DO160G and MIL-STD-810H. Engineered to DO-254 DO-178 Level C

Navigation : Certified GPS/SBAS, Tested to DO-160G, TSO-C145e, DO-178C DO-254 Level C. Protocols Mavlink / NMEA

### RELATED PRODUCT





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### ► HIGHLIGHTS

Batteries : Li-on State of the art

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Battery Weight : 3,8Kg

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Battery Charging Time : 50 Minutes

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Operating Frequencies : 2.402-2.478Ghz or Custom

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Datalink Range: 20Km /30Km/40Km Radio Line of sight

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### Example of optional Gimbals

EO (b1) : EO, Zoom 80x (x40 +2x Digital) 140g 60° WFOV 1.5° NFOV 0.75° DFOV  
Pitch -45° to + 80° Yaw/Roll 0° to + 360°

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EO/IR (b2) : EO, Zoom 40x (x20 +2x Digital) 115g EO Res: 1280 x 720; IR Res:  
640 x 480 60° WFOV 3° NFOV 1.5° DFOV Pitch -45° to + 135°  
Yaw/Roll -180° to + 180°

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EO/IR (b3) : EO, Zoom 40x (x20 +2x Digital) 320g EO Res: 1280 x 720;  
IR Res: 640 x 480 60° WFOV 3° NFOV 1.5° DFOV  
Pitch -45° to + 135° Yaw/Roll -180° to + 180°

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EO/IR (b4): EO, Zoom 40x (x20 +2x Digital) 350g EO Res: 1280 x 720;  
IR Res: 1280 x 720 60° WFOV 3° NFOV 1.5° DFOV  
Pitch -45° to + 135° Yaw/Roll -180° to + 180°

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EO/IR (b5) : EO, Zoom 80x (x40 +2x Digital) 640g EO Res: 1280 x 720;  
IR Res: 1280 x 720 60° WFOV 1.5° NFOV 0.75° DFOV Pitch -45° to + 80°  
Yaw/Roll 0° to + 360°

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EO/IR/LRF (b6) : EO, Zoom 42x (10.5x +4x) 680g; EO Res: 1920x1080. IR,  
Res: 640x512 LRF, 5-1500m, 905 nm IP66

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EO/IR/LRF (b7) : EO, Zoom 480x (30 +16x) 1500g; EO Res: 1920x1080. IR,  
Res: 640x512 LRF, 5-2000m, 905 nm IP 66

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# NES-TSOFA

## NEW GENERATION UAV

### ► OVERVIEW

Transponder : Civil and Military

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Radio Beacon : Up to 5 Days self powered

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Communications : Radiolink /4G-5G/Satcom

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Embedded Artificial Intelligence unit : Optional

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The NES-TSOFA is a state-of-the-art family of drones designed by Nolam Services & Industries, leader in high technology solutions for mission critical applications with a long history of satisfied private and public customers NES-TSOFA is bio-inspired and combines deep-tech expertise with mother nature's characteristics, resulting in an elegant design and rich technical functionality - that represents the best of art and science.

Three years of development, aerodynamics and optimization of performance studies carried together with a distinguished university, resulted in a breakthrough state of the art mini drone, capable of performing a wide variety of tasks, by switching the payload (from EO/IR gimbal to medicine containers). landing and taking-off from water too. NES-TSOFA includes a wide range of features such as optional Artificial Intelligence processing onboard, allowing swarm operations, transponders, radio catcher, satellite communications, 4G/5G and can reach a maximum speed of 112 Km/h with a 1.5 Kg payload. Customization is possible based on customers detailed requirements

**Order Part Number: NES-TSOFA -C-D-T-A-G**

#### **FRAME**

FPV Camera : 8MP MIPI CSI-2 tiltable camera: HD (1280x720), 1080p (1920x180), 4K UHD (3840 x 2160)

Motor : IP45 standard IP67 customized option

Propellers : Standard: 4x Carbon Propellers / Custom Low noise propellers (-5db)

Autopilot : Autopilot

GPS : Certified GPS/SBAS, Tested to DO-160G, TSO-C145e, DO-178C DO-254 Level C. Protocols Mavlink / NMEA

Battery : Battery LI-ION

Radio : IP Encrypted Datalink (256bit AES)



# NES-TSOFA

## NEW GENERATION UAV

**Order Part Number: NES-TSOFA -C-D-T-A-G**

**OPTION G Ground Control Station :**

**G20** : Rugged handheld GCS with Toughpad 800cd/m<sup>2</sup> IPS $\alpha$  display capacitive 10-finger multi-touch 10" display. Runs on Windows or Linux. Peripherals: Wifi Bluetooth W3G, 4G, LTE, USB connector RJ45 Gigabit Ethernet. Interfaces: Front Joystick options (up to 4) OTTO Hall-effect, Castle style joystick IP68S, Alps Potentiometer, joystick, ControlMEC Hatswitch, Custom by customer requirement

**G30** Rugged Ground Control Unit Case with up to four channels for multi-UAV operation, dual display 50Hz Control rate, 1 mrad Resolution, 3 user switches, Joystick connector (DB-15 female), Ethernet, -40°C to +55°C, GPS RF connector, Internal Redundant battery. Weight 18Kg. Tracking Antenna: aluminum tripod, 2.4GHz with a range up to 30 km

**G50** Rugged Ground Control Unit Case with up to four channels for multi-UAV operation, dual display 50Hz Control rate, 1 mrad Resolution, 3 user switches, Joystick connector (DB-15 female), Ethernet, -40°C to +55°C, GPS RF connector, Internal Redundant battery. Weight 18Kg. Tracking Antenna: aluminum tripod, 2.4GHz with a range up to 50 km

**OTHERS OPTIONS**

**B** Battery Charger: AC &DC dual input balance, programmed battery type, cell count, charge current, charge terminal voltage for Li-ION Li-PO, LiFe, LiTo NIMH/NICD and Lead Acid batteries

**CB** CargoBay 2.5 lt or optional CB14 for 14 lt

**HT** Desert configuration kit for high temperature scenarios

**P** Parachute with FTS

**RP** Rugged Pelicase

**C OPTIONS COLOR**

**00** No Color : Carbon Fiber

**W** White

**M** Mill

**C** Custom



# NES-TSOFA

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### **R RANGE OPTIONS**

- 21** 21 km UAV Antenna 2.4 GHz ISM Band 11 dBi Omnidirectional - 8 Degree Electrical Down-Tilt - Multipoint and Mesh Application N-Female Connector, includes heavy duty pole mounting brackets
- 35** 35 km Rugged GCS, waterproof with up to four channels for multi-UAV operation, Battery with up to 13 hours of operation (includes LCD battery level indicator) 2.4GHz grid Omnidirectional 2 axis tracking system, heavy duty tripod, rugged transport box, Military grade“
- 50** 50 km Rugged GCS, waterproof with up to four channels for multi-UAV operation, Battery with up to 13 hours of operation (includes LCD battery level indicator) 2.4GHz grid Omnidirectional 2 axis tracking system, heavy duty tripod, rugged transport box, Military grade“

### **T TRANSPONDER OPTIONS**

**00** Not present

**C** Civil: ADS-B, MODE A C and S replies. TSO-C88b internal altitude sensor/encoder. TSO-C112e Level 2els, Class 1 Mode S transponder, TSO-C166b Class B1S Extended Squitter transmitter. Conformity DO-181E Level 2els, Class 1, DO-260B Class B1S, DO-178C Level C, DO-254 Level C ,DO-160G

**M** Civil: ADS-B, MODE A C and S replies. TSO-C88b internal altitude sensor/encoder. TSO-C112e Level 2els, Class 1 Mode S transponder, TSO-C166b Class B1S Extended Squitter transmitter. Conformity DO-181E Level 2els, Class 1, DO-260B Class B1S, DO-178C Level C, DO-254 Level C, DO-160G

**RB** Transmitter Beacon : 5 Days continuous option

### **A OPTION ARTIFICIAL INTELLIGENCE**

**00** Present

**01** Not present



# NES-TSOFA

## NEW GENERATION UAV

Order Part Number: NES-TSOFA -C-D-T-A-G

### G GIMBAL OPTIONS

00 Present

01 Not Present 01 "EO, Zoom 80x (x40 +2x Digital) 140g Daylight only 60° WFOV 1.5° NFOV 0.75° DFOV Pitch -45° to + 80° Yaw/Roll 0° to + 360°

02 EO, Zoom 40x (x20 +2x Digital) 115g EO Res: 1280 x 720; IR Res: 640 x 480 60° WFOV 3° NFOV 1.5° DFOV Pitch -45° to + 135° Yaw/Roll -180° to + 180°

03 EO, Zoom 40x (x20 +2x Digital) 320g EO Res: 1280 x 720; IR Res: 640 x 480 60° WFOV 3° NFOV 1.5° DFOV Pitch -45° to + 135° Yaw/Roll -180° to + 180°

04 EO, Zoom 40x (x20 +2x Digital) 350g EO Res: 1280 x 720; IR Res: 1280 x 720 60° WFOV 3° NFOV 1.5° DFOV Pitch -45° to + 135° Yaw/Roll -180° to + 180°

05 EO, Zoom 80x (x40 +2x Digital) 640g EO Res: 1280 x 720; IR Res: 1280 x 720 60° WFOV 1.5° NFOV 0.75° DFOV Pitch -45° to + 80° Yaw/Roll 0° to + 360°

06 EO, Zoom 42x (10.5x +4x) 680g; EO Res: 1920x1080. IR, Res: 640x512; LRF, 5-1500m, 905 nm IP66

07 EO Zoom 480x (30 +16x) 1500g; EO Res: 1920x1080. IR, Res: 640x512 ; LRF, 5-2000m, 905 nm IP 66

08 Multispectral: Blue, green, red, red edge, near-IR (global shutter, narrowband) GSD 8 cm per pixel (per band) at 120 m (~400 ft) AGL 1 capture per second (all bands), 12-bit RAW 47.2° HFOV

1X 1 Lidar ,2 Multispectral ,3 Hyperspectral , 4 RF – Catcher ,5 Gas ,6 NBCR Detector ,Specs TBA