

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
INDIAN INSTITUTE OF REMOTE SENSING
IIRS
DEHRADUN
PURCHASE & STORES
INVITATION TO TENDER**

Ph No: 0135 - 2524317, 4318
Fax 0135 - 2748041
Email: pns@iirs.gov.in

Date :22/09/2014

M/s

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Our Ref No : GIRS 2014-000265-01

Tender Due: 15:00 Hrs IST on 16/10/2014

Dear Sirs,

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets / literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure(Form No:)

S.No.	Description of Items with Specifications	Unit	Quantity
1	Pixhawk 3DR-RTF-X8-2014	NOS.	1
2	Accessories with following components (Detailed as per annexure enclosed)	SET.	1


DELIVERY AT: IIRS

MODE OF DESPATCH DOOR DLVRY

DUTY EXEMPTIONS

SPECIAL INSTRUCTIONS NIL

SPECIFIC TERMS


V.V. NARAYANAN KUTTY
PURS. & STORES OFFICER
For and on behalf of the President of India
The Purchaser

O/C

GENERAL TERMS & CONDITIONS:

1. Material should be delivered & installed at IIRS.
2. Payment will be made within 30 days from date of receipt of supply and acceptance of the material for orders value upto Rs. 2.0 lakhs. For order value above 2.0 lakhs, 90% payment within 30 days and 10% against Bank Guarantee for the warranty period.
3. We cannot furnish Form C/D. Please indicate the applicable percentage of Trade tax / VAT in your quotation, if applicable. Otherwise the quoted rate will be considered as inclusive of all taxes.
4. Clearly mention the Make/Brand of the item in your quotation. Please enclosed the Authorization Certificate from the principal of the quoted Make/Model along with the quotation.
5. Also clearly mention the exact delivery period and validity of your offer shall be min. 60 days

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INDENTNO 2014000265 DESCRIPTION PIXHAWK 3DR-RTF-X8-2014

Accessories with following components

1. Tarot T-2D Brushless Gimbal Kit for 3DR X 8
- 2- Y6/X8/Aero Battery Pack.
- 3- RTF Quad/X8 Replacement Kit.
- 4- Telemetry: 3DR Radio 433 MHz
- 5- GoPro HERO3+
6. Speaktrum DX7s 7 CH Transmitter with AR8000
- 7- On Screen Display : 5.8 Ghz OSD/FPV System

Item wise detail specification

Annexure-1

1. Pixhawk 3DR-RTF-X8-2014 Specifications

- Pixhawk Autopilot System
- 3DR Power Module with XT60 connector
- 3DR ublox GPS with magnetometer
- 880 Kv brushless motors
- 20 Amp ESCs with SimonK firmware
- 10x4.7 slow-fly APC propellers
- One (1) 4S 6000 mAh battery pack, battery charger and battery bag
- **Pixhawk Specifications**
 - 32-bit STM32F427 Cortex M4 core with FPU
 - 168 MHz/256 KB RAM/2 MB Flash
 - 32 bit STM32F103 failsafe co-processor
- **Sensors:**
 - ST Micro L3GD20 3-axis 16-bit gyroscope
 - ST Micro LSM303D 3-axis 14-bit accelerometer / magnetometer
 - Invensense MPU 6000 3-axis accelerometer/gyroscope
 - MEAS MS5611 barometer
- **Interfaces:**
 - 5x UART (serial ports), one high-power capable, 2x with HW flow control
 - 2x CAN
 - Spektrum DSM / DSM2 / DSM-X® Satellite compatible input up to DX8
 - Futaba S.BUS® compatible input and output
 - PPM sum signal
 - RSSI (PWM or voltage) input
 - I2C®
 - SPI
 - 3.3 and 6.6V ADC inputs
 - External microUSB port
- **Power System:**
 - Ideal diode controller with automatic failover
 - Servo rail high-power (7 V) and high-current ready
 - All peripheral outputs over-current protected, all inputs ESD protected

2. Tarot T-2D Brushless Gimbal Specifications :

- Support GOPRO Hero3 video auxiliary output
- Supply voltage polarity protection and voltage compensation
- Motor drive end short-circuit protection
- Custom initial pitch angle
- Sensitivity parameter adjustment and software 3D pose show thru PC Connection
- Adjustable rocker rate mode and position mode
- Supported receiver type : conventional receiver, S-BUS receiver, DSM2/DSMJ/DSMX receiver
- Support for remote devices : PPM/PCM/2.4G
- Working voltage : DC 7.4V ~ 14.8V (Recommended 12V, three lithium battery)
- Working current : 200mA-500mA (power supply voltage and the motor related)
- Working environment temperature: -15 °C ~ 65 °C
- Processor: Dual 32-bit high-speed ARM core processor
- Sensor : Three axis MEMS gyroscope and MEMS accelerometers
- Maximum angular rate : 2000 ° / sec

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- o Maximum acceleration : 16G
- o Control frequency: 2000Hz
- o Motor drive frequency: 20KHz (no noise smoothing driven)
- o Control accuracy : 0.1 ° (Pixel Grade)
- o Control angle range : -45 ° ~ 45 ° (roll), -135 ° ~ 90 ° (tilt)
- o Pose solver algorithms : PTZ dedicated brushless motor decoupled EKF algorithm

3. Y6/X8/Aero Battery

- (LiPo) batteries. 4S 6000 mAh

4. RTF Quad/X8 Replacement Kit

- o Two 880 kV brushless motors (black)
- o One 10 x 4.7 regular propeller
- o One 10 x 4.7 pusher propeller
- o One blue arm
- o One black arm
- o Two motor collets with propeller nuts
- o Two 20 A ESCs with SimonK firmware
- o Four landing gear plates (two legs)
- o Spare assembly bolts
- o Spare nuts
- o Spare spacers and standoffs

5. Telemetry:

- o Two radio modules with antennas
- o Micro-USB cable
- o Android OTG adapter cable
- o 6-wire Pixhawk connector cable
- o 6-to-5-position APM and PX4 connector cable

• Specifications:

- o Interchangeable air and ground modules
- o 433 MHz
- o Micro-USB port
- o 6-position DF13 connector
- o 100 mW maximum output power (adjustable)
- o -117 dBm receive sensitivity
- o Based on HopeRF's HM-TRP module
- o RP-SMA connector
- o 2-way full-duplex communication through adaptive TDM UART interface Transparent serial link
- o MAVLink protocol framing
- o Frequency Hopping Spread Spectrum (FHSS)
- o Configurable duty cycle
- o Error correction corrects up to 25% of bit errors
- o Open-source SIK firmware compatible
- o Configurable through Mission Planner and APM Planner
- o Supply voltage: 3.7-6 VDC (from USB or DF13 connector)
- o Transmit current: 100 mA at 20 dBm

6. Spektrum DX7s 7 CH

# of Channels	7
Modulation	DSM2/DSMX
Band	2.4GHz
Receiver	AR8000
Model Memory:	20
Modes:	1,2,3 and 4
Transmitter (Tx) Battery	4 Cell 2000mAh Ni-MH
Charger	

On Screen Display

- Specifications
- Screen size: 7 inches
- Screen type: TFT LCD Screen/long life, LED backlight
- Resolution: 800x480
- Brightness: 450 cd/m²
- Contrast: 500:1
- View angle: 140/120 degree
- Working voltage: DV 7-12 V (center positive) or 11.1 V Li-battery
- Power consumption: < 8 w
- Built-in 5.8 GHz dual diversity receiver automatically for best reception
- Built-in 2CH 5.8 GHz AV output and 1-channel AV input
- Multilanguage menu support
- Working temperature: -10 degree to 65 degree centigrade