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## Defence & Security Products Division

### DANOS 2

Danos 2 is a man portable day and night sensor system featuring high performance thermal and day sensors for fast permanent and temporary surveillance needs.

- Detection ranges up to 13.7 km
- 4 Sensor heads per control station
- Rapid Deployable Man Portable System
- Housed inside two Ruggedised Airportable Boxes
- Hard wired / Microwave transmitter / receiver



# DANOS 2

## Man Portable Day & Night Observation System

DANOS 2 provides short, medium or long range Surveillance Target Acquisition using 2 sensor technologies.

### Surveillance Sensor

Danos 2 is configured to operate with a wide range of sensors as follows:-

**Day camera** including lenses up to 2004mm

**MINI TIU3** range of thermal cameras including Standard and High Definition with lenses up to 150mm. Fitted as standard

**TISI** Thermal weapon sight (removable to be used as hand held) Optional

**VISI** Thermal hand held observation system (removable to be used as hand held) Optional

### Standard Danos 2 camera features

- Germanium window as standard (thermal)
- Totally light independent
- Detection range to 13.7km (vehicle)
- 25Hz refresh rate as standard
- Thermal band 8-14 $\mu$  m
- Video Motion Detection compatible
- All weather IP67 sealed units
- Rugged epoxy painted aluminium housing
- Day camera colour/monochrome

### Pan/Tilt Positioner

Operational angles (°)	Pan	Tilt
Over the top	Continuous 360° using slip rings	-90° to +25°
Backlash	Less than 0.15°	
Speed	30° per sec.	

### Control Station

Housed in a waterproof case the Control unit lap top provides control of up to 4 camera outstations with full pan tilt, zoom control and camera selection.

Video transmission and data transmission Modules fitted.

Batteries and charger as standard

Optional Video stabilisation

Optional Video Enhancement

### Hard Disk Digital Video Recorder

Input signal : Composite analogue or S-Video

Output signal : USB 2.0

Audio input : External audio source

Power : 5 V, USB bus

Support : 25 Frames/sec in 720 x 576 PAL video resolution

Compatible with : Windows® 2000/XP/Vista 32bit/Windows 7

Default settings allow up to 24 hours recording on a 32 GB card

### RF/Microwave link (Optional)

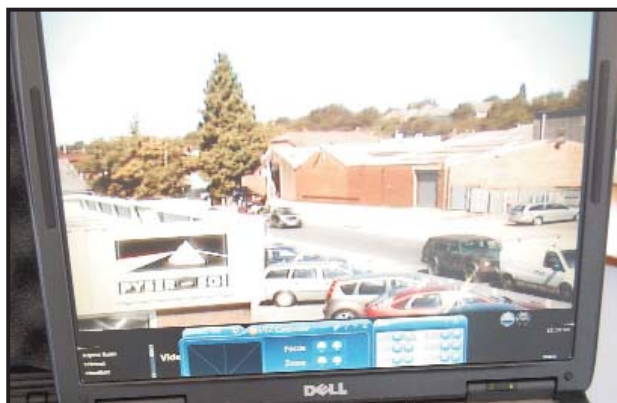
4.9-5.8GHz -1W max- Multi Channel  
Range < 1000m (longer range available as an option)  
Digital Secure MPEG2  
128 Bit HW AES Encryption  
ID Pairing, QOS  
Dynamic Power / Channel Setting  
MIMO Technology  
Integrated directional antennae  
IP65 Housing

### Data Transmission

433.92MHz (EU)  
RS485  
Baud rate 2400, 4800, 9600, 19200  
Supports 8 bit data, with no 'forbidden' codes  
Data Transmitted Indicator  
Data Received Indicator  
Data Error Indicator  
Test Packet Transmit Mode to aid installation  
2 Independent Relay Outputs  
IP65 Housing  
Compliant with ETSI EN 300 220-1

### Sensor Head Outstation

All the above control equipment is housed in a waterproof case with battery back up and external power supply.





# Lens Options and Detection Distances

## Thermal Camera

Standard Definition SD 384 x 288				Human			Vehicle		
DANOS 2 Code				I	R	D	I	R	D
*15mm	HFOV	35°	S15	127	192	381	318	529	953
*35mm	HFOV	15.5°	S35	296	449	889	741	1235	2223
*45mm	HFOV	12°	S45	381	577	1143	953	1587	2858
50mm	HFOV	11°	S50	423	641	1270	1058	1764	3175
75mm	HFOV	7.3°	S75	635	962	1905	1588	2646	4763
100mm	HFOV	5.5°	S100	846	1282	2540	2116	3528	6350
150mm	HFOV	3.7°	S150	1270	1824	3810	3166	5292	8526
High Definition HD 640 x 480									
DANOS 2 Code									
14mm	HFOV	44°	H14	170	283	508	423	706	1271
*18mm	HFOV	34.8°	H18	220	367	660	550	917	1650
*25mm	HFOV	25.1°	H25	306	509	917	764	1273	2292
*35mm	HFOV	17.9°	H35	428	713	1283	1069	1782	3208
*45mm	HFOV	13.7°	H45	550	917	1650	1375	2292	4125
50mm	HFOV	12.4°	H50	611	1019	1833	1528	2546	4583
75mm	HFOV	8.3°	H75	917	1528	2750	2292	3819	6875
100mm	HFOV	6.2°	H100	1222	2037	3667	3056	5093	9167
150mm	HFOV	4.2°	H150	1833	3056	5500	4583	7639	13750

Key: I = Identification, R = Recognition, D = Detection. All distances in metres. Lenses marked \* are manual focus, others are motorised focus. HFOV = horizontal field of view



Thermal 25mm focal length lens HD

## Standard Day Camera

8mm-96mm

HFOV 43°-3°

Other focal lengths available on request up to 2004mm



Day - 96mm. Lens at full zoom



Day - 8mm. Lens at wide angle

# Ordering Information Danos 2

## Danos 2 consists of two modules

- 1. Control Station comprising:-**
  - Semi ruggedized laptop computer
  - Rechargeable battery pack, charger and
  - mains cable
  - Power and telemetry control equipment pre-equipped for up to four Camera head/outstations
  - All fitted into Peli-type case
  - All interconnect cables
- 2. Camera Head/Outstation comprising:-**
  - Day/night 8-96mm colour/monochrome camera ( other options available on request )
  - Mini TIU3 Thermal surveillance camera ( user selected -- see below )
  - Continuous rotation pan / tilt on rugged tripod
  - Rechargeable battery and mains supply pack in Peli-type box

The above gives a complete hard wired system and is delivered in one air-transportable Peli-type box.

## Ordering a basic system with one camera head/outstation

Part No 8256015 is the basic generic Danos 2 System complete, the Camera Head/Outstation being connected by cable to the Control Station **but with the choice of Mini TIU3 thermal camera still to be added.**

The choice of thermal camera uses the Danos 2 code appearing against each camera in the table on page 3. This code is added to the end of the generic part number above. For example 8256015H45 is a complete Danos 2 system using a Mini TIU3 High Definition camera with a 45mm lens, H meaning High Definition and 45 defining the lens focal length.

The complete list of standard configurations is:-

**Standard Definition SD**  
**384 X 288**

**High Definition HD**  
**640 X 480**

8256015S15  
8256015S35  
8256015S45  
8256015S50  
8256015S75  
8256015S100  
8256015S150

8256015H14  
8256015H18  
8256015H25  
8256015H35  
8256015H45  
8256015H50  
8256015H75  
8256015H100  
8256015H150

## Adding more Camera Head/Outstations

The Control Station is pre-equipped as standard to serve up to four Camera Head/Outstations with no modification necessary. This means that more can be added later in addition to the initial number ordered. So up to three extra outstations can be added as extra modules to the basic single outstation system, either as part of the initial system or at a later date. In common with the initial outstation each additional one includes the complete equipment list and day camera listed under point 2 above.

Additional units use exactly the same part number as the basic system but with the addition of the number 2, 3 or 4 – each number defining an outstation.

For example 8256015**S1002** means a second outstation which is equipped with a Mini TIU 3 Standard Definition with a100mm lens. So a complete system with three outstations in total would be ordered as follows :-

8256015H45 Basic Danos 2 system with first outstation using a High Definition 45mm lens Mini TIU3 camera  
Plus  
8256015S752 Second outstation using a Standard Definition 75mm lens Mini TIU3 camera  
Plus  
8256015H1503 Third outstation using a High Definition 150mm lens Mini TIU3 camera

## Adding Microwave control/Radio TX and RX

All Danos 2 systems are pre-equipped to operate any outstation by cable or RF/Microwave link.

Conversion from cable to RF/Microwave can be done as part of the initial system order or as a retrofit with no modifications needed to the control station. To add RF/Microwave functionality to any outstation, or to a single outstation system simply add the letter M to the end of the Part Number.

For example

8256015H45M is a Basic Danos 2 system with first outstation using a High Definition 45mm lens Mini TIU3 camera operated by RF/Microwave up to 1 Km line of sight instead of hard wired by cable And a three outstation system could be

8256015H45 is a complete Danos 2 single outstation basic system using a Mini TIU3 High Definition with a 45mm lens in its first outstation, cable connected

Plus

8256015H1002M is a second outstation using a Mini TIU3 High Definition with a 100mm lens with RF/Microwave instead of cable connected

Plus

8256015S753 is a third outstation using a Mini TIU3 Standard Definition with a 75mm lens, cable connected.

## Other Configurations

Danos 2 is a very versatile and flexible modular system and can be custom made to any user specific requirements.

It can be configured with outstations using:-

- Alternative day or day/low light cameras of focal lengths up to 2004mm
- Twin day or day/low light cameras instead of single day and single thermal cameras
- Single or twin thermal cameras including variable or step zoom models
- Image intensified cameras including Pyser-SGI BICAM, TRICAM and VERTIGO
- VISI and TISI hand held thermal imaging surveillance cameras and sights

In addition Electronic Image Stabilisation and/or Electronic Image Enhancement can be incorporated into the Control Station to function on all cameras.

**Please contact us for your specific system requirements.**

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Visit our website on [www.pyser-sgi.com](http://www.pyser-sgi.com) for further information on the complete range of products available from Pyser-SGI Limited.



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