

# Gemini 720iks

## Real-time multibeam imaging sonar for shallow water applications

The Gemini 720iks is a shallow rated version of the industry recognised Gemini 720is, offering the same imaging performance as the Gemini 720is but in a more compact package. The smaller and lighter Gemini 720iks is ideal for small ROVs and shallow water operation where size and weight is critically important.

A real-time, high frequency imaging solution, the Gemini 720iks operates at 720 kHz and combined with Trittech's advanced processing electronics, it produces images of outstanding clarity, benefitting from 512 beams which results in a 0.25° effective angular resolution. The Gemini 720ik has been developed specifically for shallow water operations with low power consumption and Compressed High Intensity Radar Pulse (CHIRP) processing for greater definition at long range.

The product also has an integrated Velocity of Sound (VoS) sensor to ensure extremely accurate imaging and measurement.

The Gemini 720iks is supplied with Genesis, Trittech's data acquisition and logging software, which offers users the ability to operate a number of Trittech sensors using this single software program.

Software development kits (SDKs) are also available for Windows and Linux operating systems.



### Applications

- Obstacle Avoidance
- ROV/AUV Navigation
- Target Detection
- Search and Recovery

### Features

- 720 kHz operating frequency
- Wide 120° horizontal field of view
- CHIRP processing
- Integrated velocimeter for accurate ranging
- Real-time video-like imagery
- Clear wide angle field of view
- Suitable for low visibility environments

| Best Suited Applications | Depth Rated | Frequency | 3 Year Warranty | SDK |
|--------------------------|-------------|-----------|-----------------|-----|
| ROV, AUV                 | 350 m       | 720 kHz   | ✓               | ✓   |

| Acoustic specifications | Low frequency mode             |
|-------------------------|--------------------------------|
| Operating frequency     | 720 kHz                        |
| Angular resolution      | 1.0° acoustic, 0.25° effective |
| Range                   | 0.1 - 120 m / 0.4 - 394 ft     |
| Number of beams         | 512                            |
| Horizontal beam width   | 120°                           |
| Vertical beam width     | 20°                            |
| Range resolution        | 4 mm / 0.2 in <sup>1</sup>     |
| Update rate             | 5 - 97 Hz (range dependent)    |
| Mode of operation       | CHIRP and CW                   |
| Speed of sound          | Integrated VoS sensor          |

## Interface

|                         |                                                                               |
|-------------------------|-------------------------------------------------------------------------------|
| Supply voltage          | 19 to 74 Vdc                                                                  |
| Power requirement       | 9.5 - 27 W (range dependent) <sup>2</sup>                                     |
| Main port protocol      | Ethernet                                                                      |
| Auxiliary port protocol | RS232, TTL in, pass-through power (2.5 A max)                                 |
| Connector type          | Aegir Technologies Marine MKS (W) 07 (inter-mateable with Impulse equivalent) |

## Physical specification

|                                |                               |
|--------------------------------|-------------------------------|
| Depth rating                   | 500 m / 1148 ft               |
| Weight in air                  | 1.40 kg / 3.08 lbs            |
| Weight in water                | 0.43 kg / 0.96 lbs            |
| Temperature rating (operating) | -10 to +35 °C / -14 to +95 °F |
| Temperature rating (storage)   | -20 to +50 °C / -4 to +122 °F |

| Software requirements | Minimum                               | Recommended     |
|-----------------------|---------------------------------------|-----------------|
| Included              | Genesis                               |                 |
| Processor             | 2 GHz                                 | 3 GHz Quad Core |
| Graphics              | 3D hardware accelerated graphics card |                 |
| SDK                   | Available on request                  |                 |
| Operating system      | Microsoft Windows 7, 10, 11           |                 |

<sup>1</sup> Software switchable

<sup>2</sup> The power consumption range quoted is accurate for a standalone unit and ignores cable losses

Specification subject to change in line with Trittech's policy of continual product development

| Dimensions         | Length | Width | Height |
|--------------------|--------|-------|--------|
| Measurements in mm | 150    | 125   | 65     |

3D model is not to scale

