



Non-Intrusive Flight Test Instrumentation

A Product by MEMKO Pty Ltd.

Revolutionising Flight Testing

NIFTI is a small, rapidly deployable, wireless sensing system that collects acceleration, strain and environmental data using sensor nodes that adhesively mount to the exterior surface of any aircraft.



*Actual Size



Wireless, time-synchronised flight test system for in-service aircraft



Mounts adhesively to key locations for rapid installation and removal



Suitable for any aircraft, from an ultralight to a fighter jet



Developed in close collaboration with DST Group and the RAAF Air Warfare Centre



DESIGNED & MANUFACTURED
IN AUSTRALIA



Available Now

Order your
NIFTI today:

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NIFTI™ Sensor Nodes

Datasheet V1.7



Description

The Non-Intrusive Flight Test Instrumentation System, or NIFTI, is a network of nodes that are mounted externally to an aircraft to collect flight test data. This eliminates the need to internally wire sensors to a dedicated aircraft for flight testing.

Battery Specifications

Battery Type	Lithium Polymer
Capacity	440 mAh
Voltage	3.7 V
Max Charger Voltage	4.2 V

Data Capture Specifications

Flash Storage Capacity Data	512 MB
File Format	.csv

Radio Specifications

Operating Band	915 MHz (ISM)
Throughput	Up to 1 Mbps
Receiver Sensitivity	-133 dBm
Transmitter Power	+20 dBm

Installation Specifications

Recommended Mounting Tape	3M™ VHB™ Tape 4941F
Safe Installation Period ²	3 Months

Environmental Specifications

Operating Temperature ²	-50 °C to +50 °C
Recharging Temperature	0 °C to +45 °C
Recommended Storage Temperature	-20 °C to +45 °C
Maximum Operating Altitude	50'000 feet
Minimum Pressure	11.6 kPa
Operating Humidity ²	≤100%RH
Storage Humidity ²	≤75%RH
Ingress Protection ²	IP55

Mechanical Specifications

Enclosure Material	ULTEM™ RESIN 1000
Mass ²	40 grams
Length	67.1 mm
Width	48.8 mm
Thickness	9.3 mm

Accelerometer Node

The NIFTI™ Accelerometer Node captures high resolution measurement data using a 3-axis accelerometer at a sampling rate of up to 4000 Hz.



System Specifications

Sample Rate	up to 4000 Hz
No. of Sample Channels	3 x 24-bit
Capture / Sleep Times ¹	2 / 33 Hrs @ 4000Hz 8 / 22 Hrs @ 1000Hz 16 / 7 Hrs @ 500Hz
Charge Time	3 Hrs to fully charge

Interface Specifications

- Micro USB 2.0

Accelerometer Specifications

- 3-axis Microelectromechanical System (MES) Accelerometer

Sensor Bandwidth	up to 1000 Hz
Noise Density [at ± 10g]	80 µg/√Hz
Sensitivity due to Temperature	±0.015 %/°C
g Range/Resolution	±10 g/0.019 mg ±20 g/0.038 mg ±40 g/0.076 mg

Temperature Sensor Specifications

Range	-40 °C to +125 °C
Resolution	0.11 °C

Strain Gauge Node

The NIFTI™ Strain Gauge Node captures high resolution three-channel measurement data from external sensors at a sampling rate up to 2000 Hz.



System Specifications

Sample Rate	up to 2000 Hz
No. of Sample Channels	3 x 24-bit
Capture / Sleep Times ¹	2 / 27 Hrs @ 2000Hz 4 / 18 Hrs @ 1000Hz 6 / 9 Hrs @ 500Hz
Charge Time	3 Hrs to fully charge

Interface Specifications

- Micro USB 2.0
- External Sensor Port to connect with peripheral sensors, e.g. strain gauges, via an analogue/digital interface

Analog to Digital Converter Specifications

Data Channels	3
Analog Bandwidth	4000 Hz

Temperature Sensor Specifications

Range	-40 °C to +85 °C
Resolution	±0.5 °C

¹Value measured at sea level, at 25 °C with strain gauges fitted, using timed capture to fill data storage and remaining battery capacity used for sleep.

²Value subject to operational conditions & requirements.

Contact Us

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