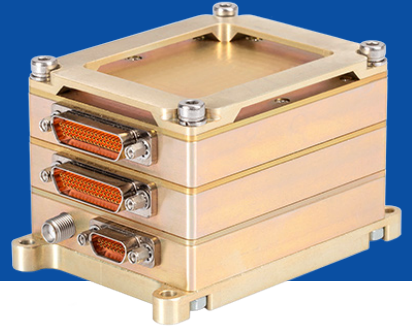


# STACKABLE DATA ACQUISITION and TELEMETRY SUITE



## GENERAL DESCRIPTION

TUALCOM offers its well-known telemetry and data acquisition product line as stackable configuration. In Stackable Suite each product is configured as identical and compact form factor which can either be stacked or installed individually to platform. Stackable Suite provides flexibility and scalability to meet changing data acquisition requirements.

Following data acquisition modules are available in TUALCOM Stackable Suite:

- **ICP (16x ICP)**
- **Differential (14x Differential ADC, 8 of them has digital gain and excitation voltage)**
- **Temperature (16x PT100/TC)**
- Heat Flux (16x PT100/TC)
- **Customised Solutions**
- **Digital (15x RS 485, 2x Ethernet, 8x TTL, 2x RS 232)**

Digital module can also be provided with 32 GB data recorder optionally. Each module also features UART output to monitor the collected data online. Each unit can provide IRIG 106 compatible (Chapter 4 and Chapter 7) data format. Also, each unit can be used standalone, i.e. can be connected Transmitter without Master module, if only one module will be used.

Telemetry transmitter module can be configured with 2W, 5W or 10W RF output with PCM/FM, CPM and SOQPSK modulation.

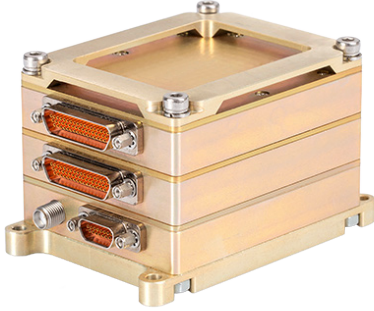
Configuration software is provided with Stackable Suite which enables user to modify settings for each module.

Modules are inter-connected with a proprietary high-speed data bus which provides low latency and error resistant data communication.

## APPLICATION AREAS

- **Fixed/Rotary Wing Aircraft Development**
- **Space Launch Vehicles**
- **Guided Munition Development and Tests**
- **Flight Test and Instrumentation**
- **Unmanned Autonomous System Test and Development**

# STACKABLE DATA ACQUISITION and TELEMETRY SUITE



**Data Encryption**  
AES 256 (Optional)

**Operating Temperature**  
-40 °C to +85 °C

**Environmental Condition**  
MIL-STD-810G

**Data Rate**  
Up to 16 Mbps

**Digital Inputs**  
Ethernet, RS 485, TTL, RS 232

**Analog Inputs**  
PT 100/TC, ICP, Differential  
Heat Flux

**Modulation**  
PCM/FM, CPM, SOQPSK

**FEC Optional**  
Reed Solomon (RS) and Convolutional,  
LDPC

## KEY SPECIFICATIONS

- Flexible
- Scalable
- Easy Configuration
- Excellent SWaP
- IRIG 106 Compatible
- AES 256 Option
- Adjustable Cut-off Frequency
- 32 GB Storage
- MIL STD 704F Compliant
- MIL STD 461F Compliant

|            | Channels  | Resolution | Sample Rate                            |
|------------|---|------------|--|
| ICP Stack  | 16 x ICP/IEPE   | 16-bit     | 200 kHz                                |
| PRS Stack  | 16 x differential (8 of them has separate excitation voltage) | 16-bit     | 200 kHz                                |
| TMP Stack  | 16 x PT100/TC   | 16-bit     | 50 Hz                                  |
| MIX Stacks | 4 x PT100/TC, 3 x ICP, 2 x Differential ADC, 3x Voltage Input | 16-bit     | 50 Hz for PT100/TC, 200 kHz for others |

|                 | Power Consumption (Nominal) | Operating Voltage | Dimensions (cm)  | Weight (g) |
|-----------------|-----------------------------|-------------------|------------------|------------|
| MAS Stack       | 4.3 W                       | +16 to +35 Vdc    | 7.5 x 6.0 x 1.3  | 96         |
| TX Stack (5 W)  | 22 W                        | +24 to +32 Vdc    | 7.5 x 6.0 x 2.15 | 169        |
| TX Stack (10 W) | 30 W                        | +24 to +32 Vdc    | 7.5 x 6.0 x 2.15 | 169        |
| PWR Stack       | 0.55 W + load               | +24 to +32 Vdc    | 7.5 x 6.0 x 1.3  | 150-200    |
| ICP Stack       | 1.68 W                      | +18 to +35 Vdc    | 7.5 x 6.0 x 1.3  | 95         |
| PRS Stack       | 1.45 W                      | +12 to +35 Vdc    | 7.5 x 6.0 x 1.3  | 94         |
| TMP Stack       | 1.44 W                      | +12 to +35 Vdc    | 7.5 x 6.0 x 1.3  | 93         |
| MIX Stack       | 1.44 W                      | +18 to +35 Vdc    | 7.5 x 6.0 x 1.3  | 95         |

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