

# RAPTOR SCIENTIFIC®

## PRODUCT LINE CATALOG



Global Provider of Test & Measurement Services





## **Product Catalog Disclaimer**

Please note that the product catalog provided herewith is intended to showcase a selection of our company's offerings. It is important to understand that this catalog does not encompass our entire range of products. We offer a diverse and extensive range of products, and while we strive to include as many as possible, it is not feasible to list every single item in this catalog.

The purpose of this catalog is to provide you with a glimpse into our product line, highlighting some of our most popular and frequently requested items. However, we encourage you to reach out to our representatives or visit our website for a comprehensive overview of our complete product range.

We continuously innovate and introduce new products to meet the evolving needs of our customers. Therefore, it is possible that some products featured in this catalog may be discontinued or replaced with updated versions by the time you inquire or place an order. We apologize for any inconvenience this may cause and assure you that our team will be more than happy to assist you in finding suitable alternatives.

Please be aware that the images, descriptions, and specifications provided in this catalog are subject to change without prior notice. We make every effort to ensure the accuracy of the information presented, but due to factors beyond our control, such as manufacturing updates or market fluctuations, there may be occasional discrepancies. We recommend verifying the details with one of our representatives before making any purchasing decisions.

Furthermore, certain items featured in this catalog may be subject to export control regulations. It is the responsibility of the purchaser to comply with all applicable laws and regulations regarding the export, re-export, or transfer of these items. The catalog is intended for informational purposes only and does not constitute an offer to sell or export any controlled items.

Lastly, this catalog is intended for informational purposes only and does not constitute a legally binding offer. We appreciate your understanding and cooperation. For any further inquiries or to explore our complete product range, please do not hesitate to contact one of our dedicated team members.

Thank you for considering our products.

- Raptor Scientific

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# ABOUT RAPTOR SCIENTIFIC

Raptor Scientific is a leading provider of engineering, testing, and measurement services, including the design and manufacture of world class Mass Properties Instruments, Radar Cross Section Measurement Instruments, Air Data Test & Calibration Systems, Igniter Circuit Testers, Heat Flux Transducers & Sensors, Thermocouples, Oxygen Cleaning Systems, as well as Pressure and Temperature Test Devices for all types of users and developers.

# LEADING TECHNOLOGY FOR MISSION CRITICAL APPLICATIONS

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We offer an extensive range of test and measurement capabilities, including Mass Properties, Radar Cross Section, Air Data Test Systems, Pressure, Temperature, Torque and Force measurement instruments, and Igniter Circuit Testers for developers of high-performance systems for whom failure is not an option. Our groundbreaking solutions offer the highest level of accuracy, safety, and exceptional product reliability.

## Groundbreaking Solutions

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Raptor Scientific has a proven record of providing cutting-edge, highly complex solutions, with an engineer-to-engineer market strategy ensuring solutions meet highly customized needs. Our comprehensive solution set covers diverse platforms and applications with complementary solutions and multiple value-added features. Raptor's unmatched design engineering expertise balances innovation and profitability.

## Why Raptor Scientific?

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Raptor's unmatched performance, product offerings, testing expertise, and aftermarket services combined with a "culture of support" provide customers with vital feedback and guidance.



Mars Perseverance Rover on Raptor Scientific custom Weight and CG instrument



# OUR PRODUCTS

## Avionics Systems

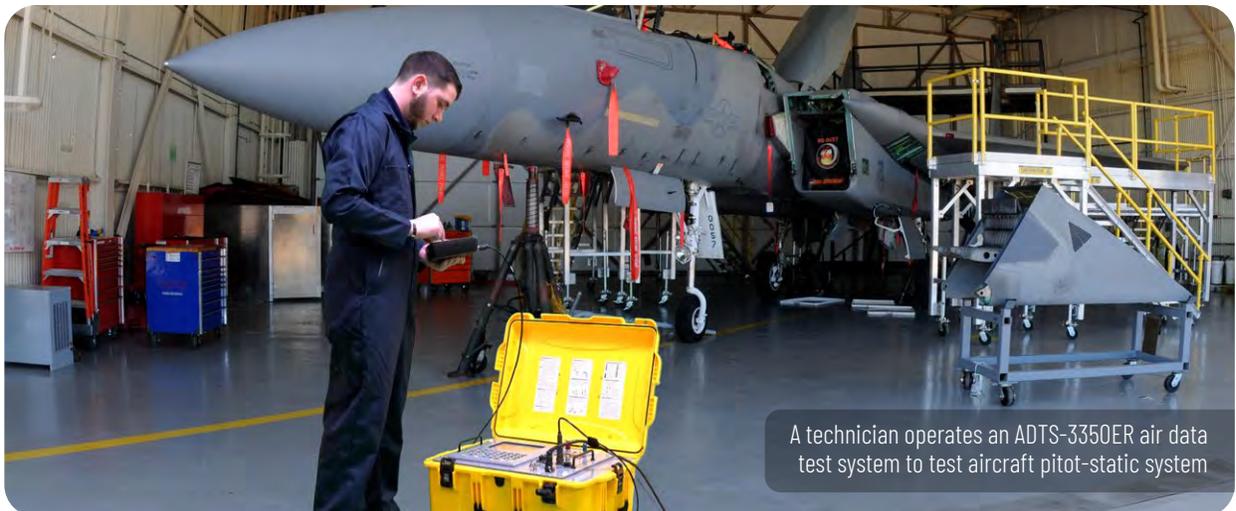
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Our line of Air Data Test Sets (ADTS) and Air Data Calibrators (ADC) offers our commercial and military customers a common equipment approach for testing pitot static and air data applications. Our off-the-shelf solutions can be customized to fit most customers' requirements. This provides significant cost savings and enhanced logistical support benefits for almost any program.

## Pressure, Air and Temperature Systems

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The accuracy and durability of our pressure, temperature, torque, and force instruments are relied upon in the punishing environments encountered by the DoD, NASA, and other clients worldwide. Our portable instruments are housed in rugged cases designed to withstand prolonged exposure to the conditions encountered in shipboard, submarine, hangar, and outdoor environments.



A technician operates an ADTS-3350ER air data test system to test aircraft pitot-static system

## Torque and Force Calibrators

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Self-contained, semi-automated, multi-functional calibrators, which provides a rapid, highly accurate and safe means for calibrating and testing a wide variety of torque and force measuring instruments. These calibrators allow the ability to calibrate all types of torque wrenches, torque multipliers, force gauges, cable tensiometers and cable testers throughout stand ranges.

## Mass Properties

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Raptor Scientific is the premier provider of mass properties instruments and services utilized in mission-critical applications. Our unmatched engineering expertise, combined with superior testing and aftermarket services deliver industry-leading precision capabilities. We have sold more moment of inertia and center of gravity instruments than any other company, offering the most accurate instruments in the world.

## Igniter Circuit Testers

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Raptor Scientific designs and manufactures igniter circuit testers approved by the US Department of Defense for failsafe measurement of mission-critical components, like squibs, bridge-wires, explosives, missiles, or rocket ignition. Our igniter testers come in single-channel and purpose-built multi-channel models for testing simple electronics paths to complex multi-path circuits.

## Heat Flux Transducers and Thermocouples

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Raptor Scientific manufactures high-performance heat flux transducers, thermocouples and related parts used in heat flux sensors and infrared radiometers. Applications include defense, space, and industrial/commercial activities involving the ability to measure very high temperatures in hostile environments. These products are often the only source for certain applications, such as space flight certified heat flux transducers, infrared radiometers, and gas base thermocouples, and are listed as the standard for many U.S. and International fire testing specifications.

## RF Systems

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Our integrated measurement systems are highly capable, portable, and easy to operate. Our integrated measurement systems utilize radar technology to measure and help maintain the radar signature of the customer's asset. Our products are used throughout the life cycle of stealth assets, from research and design through manufacturing and extending to the operational environment.



Our products are proudly  
manufactured in the USA

# AVIONICS TEST SYSTEMS

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## **Air Data Calibrators (ADC)**

The ADC Series are industry-leading air data calibrators capable of controlling and measuring altitude and airspeed pressures to the highest degree of accuracy. Our calibrators utilize high-precision transducers with proven long-term stability for our customer's air data applications.

## **Flightline Pitot Static Test Sets**

The ADTS Series are portable, ruggedized, self-contained Air Data Testers capable of accurately controlling and measuring altitude and airspeed pressures. These test sets are used to calibrate, test, and troubleshoot aircraft Pitot and Static systems and instrumentation on the flight line. The control and measurement ranges and accuracy of these test sets meet or exceed requirements for nearly all commercial and military aircraft test applications.

## **Air Data Calibration Test Systems**

The Air Data Calibration Test System ADCTS-1000 Series is a high-precision advanced Secondary Air Data Calibration system. The ADCTS Series is self-contained in a highly maneuverable rack enclosure which is perfect for calibration and avionics labs and instrument shops. An Air Data Calibrator is at the heart of each ADCTS-1000 and can perform manual or automated tests and calibration for a variety of air data equipment - tailored any system to meet customer-specific needs to support commercial and military requirements.

## **Air Data Support Equipment**

Raptor Scientific offers a range of flightline and laboratory support equipment for our calibrators and test set series. These include hose assemblies, pitot static adapters and kits, line switching manifolds, universal and fixed power supplies, pressure and vacuum sources.





ADC-2500V3  
Air Data Calibrator



ADC-2550 Air  
Data Calibrator



Benchtop  
Power Supply



ADTS-3350ER Air  
Data Test Set



Pitot Static Breakout Box  
with Line Switching Unit

### Flightline Air Data Test Sets

### Part No.

ADTS-3350ER Air Data Test Set .....	ADTS-3350ER
ADTS-3300JS Air Data Test Set (F-15) .....	ADTS-3300JS
ADTS-3250 Air Data Test Set (2-channel) .....	ADTS-3250-2W
ADTS-3250 Air Data Test Set (3-channel) .....	ADTS-3250-3W
ADTS-2000 Air Data Test Set .....	ADTS-2000
TTU-205D Pressure-Temperature Test Set .....	18910480000
TTU-205J Flight Control System Test Set .....	200317658-30

### Air Data / Pressure Calibrators

### Part No.

ADC-2522 Air Data Calibrator .....	ADC-2522
ADC-2530 Air Data Calibrator .....	ADC-2530
ADC-2550 Air Data Calibrator .....	ADC-2550
ADC-2550V3 Air Data Calibrator .....	ADC-2550V3
ADC-2555 Air Data Calibrator .....	ADC-2555
ADC-2575 Air Data Calibrator .....	ADC-2575
ADC-2500 Air Data Calibrator .....	ADC-2500
ADC-2500V3 Air Data Calibrator .....	ADC-2500V3
Precision Pressure Controller Monitor .....	1890581000X

### Benchtop / ATE Air Data Test Sets

### Part No.

ADTS-1530 Air Data Test Set .....	ADTS-1530
ADTS-1555 Air Data Test Set .....	ADTS-1555
ADTS-1575 Air Data Test Set .....	ADTS-1575
F-16 I-AIS Air Data System .....	TVCS-5500-16

### Ground Support Equipment

### Part No.

Line Switching Unit (LSU) Series .....	LSU Series
Pitot Static Adapter Kit Series .....	PSK Series
Pitot Static Adapters .....	PSA Series

### Lab Support Equipment

### Part No.

Power Supply, Fixed 115VAC 400Hz .....	TVCS-PS-1350
Power Supply, Universal .....	TVCS-PS-1351
Pressure Source Series (115/220V) .....	ADC-2500-PRES-XXX
Vacuum Pressure Unit, benchtop .....	VPU-1000
Vacuum Pump Source Series (115/220V) .....	ADC-2500-VAC-XXX

### Services

### Part No.

ISO17025 Accredited Calibration Services .....	SV-CAL
Repair & Overhaul Services .....	SV-RPR
Training .....	TRNG

Aircraft Pitot Static Adapters



# CALIBRATORS & TESTERS

## Pressure / Vacuum Calibrators

calibration and test of pressure and vacuum measurement instruments including Oxygen Clean, gauges and systems.

## Torque & Force Calibrators

Calibration of torque and force measurement tools and instruments up to 20,000 ft-lbs.

## Temperature Calibrators

Precision dry well temperature calibrators. Range from -40°F to 1200°F.

## Instrument Cleaning & Contamination Prevention

Gauge cleaning kits, super pressure fittings and Oxygen clean rated equipment.

## Test Chambers

Safety Test Chambers for proof and burst testing, depth gauge calibration and other specialized applications.

## Tachometer Testers

Calibrators for checking RPM indicators, Tachogenerators 4200 Regulus Temperature Calibrator and optical hand-held tachometers.



3461-1-104 Portable Calibration System



4200 Regulus Temperature Calibrator



Nomad™ Digital Pressure Gauge

Model 3750 Hand Pump



3112 Portable Live Pressure Tester



**Pressure Calibrators**

3112 Portable Live Pressure Tester .....	3112-100-2000
3540 Portable Gauge Tester .....	3540-1-1
3461 Portable Calibration System .....	3461-1-1
3461 Portable Calibration System, Oxygen Clean .....	3461-1-104
3689A Precision Pressure Standard .....	3689A

**Tire Gauge Calibrators**

3566 Tire Gauge tester .....	3566-1-1
3665 Tire Gauge Calibrator .....	3665-1-1

**Nitrogen Pressure Amplifiers (10,000 PSI)**

3194 Portable Pneumatic Amplifier .....	3194-F
3666 Automatic Pressure Calibration System .....	3666-10K-3

**Hydraulic Pressure Calibrators**

3712 Hydraulic Pressure Calibrator Kit .....	3712-1-1
3712 Hydraulic Hand Pump .....	3712-4-3
3750 Portable Pressure Calibration Kit, w/ gauges .....	3750-001-001
3750 Hand Pump (vacuum, pneumatic, hydraulic) .....	3750-011-001

**Dry Block Temperature Calibrators**

3604A Portable Temp Calibrator High Temp .....	3604A-1-101
3605A Portable Temp Calibrator Low Temp .....	3605A-1-101
4200 Portable Temp Calibrator -Dual Power .....	4200-001-001

**Tachometer Test Set**

3800 Tachometer Test Set (120V or 220V) .....	3800-001-XXX
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**Torque, Force and Tension Calibrators**

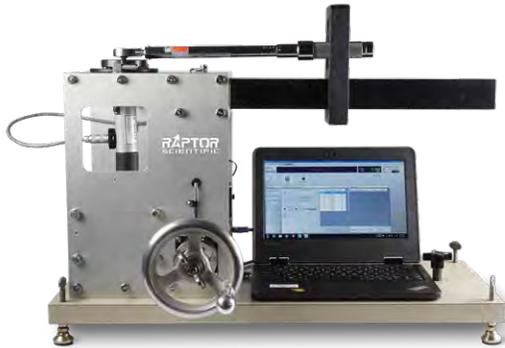
3695 Torque and Force Bench (20,000 lb-ft) .....	3695-1-1
3714 Portable Torque Calibrator (250 lb-Ft range) .....	3714-1-250
3714 Portable Torque Calibrator (500 lb-Ft range) .....	3714-1-500
3615 Cable Tensiometer Calibrator .....	3615-1-1

**Test Chambers**

3681 Vacuum/Low Pressure test chamber .....	3681-1-1
3510 Safety Test Chamber .....	3510

**Instrument Cleaning Systems**

3646 Instrument Cleaning System .....	3646-1-1
3646 Instrument Cleaning System, Oxygen Clean .....	3646-1-104



3714 Portable Torque Calibrator



3510 Safety Test Chamber

3689A Precision Pressure Standard



Model 3566  
Tire Gauge  
Tester

3666 High  
Pressure  
Calibration  
System



# PHYSICAL PROPERTIES

## Weight and Center of Gravity (CG) Measurement Devices

26 standard models that can assess large spacecraft over 35,000 lbs down to bullet-sized objects of a few grams and millimeters.

## Moment of Inertia (MOI) Measurement

Capable of measuring a wide range of object sizes and weights and can measure MOI to better than 0.1%.

## Full Mass Properties

Instruments combine CG and MOI measurements with the world's most accurate technology.

## Dynamic Balancing

Measure Product of Inertia (POI) as well as Center of Gravity (CG) in both static or dynamic modes. Configurations accommodate explosion-proof and vacuum environments.

## Gimbal Balancing

We create the only comprehensive set of machines for gimballed platforms, such as those used in sensor suites and guided projectile seekers.

## Moment Weight Scales

Test the balance and moment weight of blades, fans and engine turbines with the extraordinary sensitivity of our single-axis or multi-axis measurement devices.

## Fixtures and Accessories

We fabricate custom-made adapters and positioning fixtures for all types of objects.

## Igniter Circuit Testers

Safe measurement of firing circuits in mission-critical components and complex systems.



Product of Inertia Spin Balance



KSR Center of Gravity Moment of Inertia Series



Gimbal Balance Machine

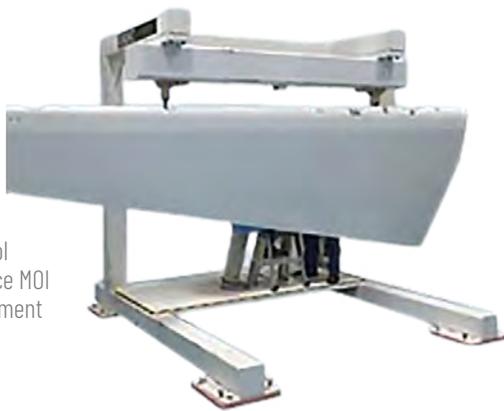


XR Moment of Inertia Instrument

XKR Small  
Payload Moment  
of Inertia  
Instruments



Igniter  
Circuit  
Testers



Control  
Surface MOI  
Instrument

**Products**

Air Bearing .....	FG-AB
Center of Gravity .....	FG-CG
Fixture .....	FG-FXT
Full Mass Properties .....	FG-KSR
Gimbal Balance .....	FG-GB
Igniter Circuit Tester .....	FG-ICT
Moment of Inertia .....	FG-MOI
Multi-Axis Moment Weight .....	FG-MMW
Product of Inertia .....	FG-POI
Single-Axis Moment Weight .....	FG-MW
Upgrade .....	FG-UPG
Weight & Center of Gravity .....	FG-WCG

**Part No.**

**Services**

Basic Support .....	SP-BS
Calibration .....	SP-CAL
Factory Service .....	SP-FV
Field Service .....	SP-FS
Lease, Igniter Circuit Tester .....	LE-09
Lease, Mass Properties Instrument .....	LE-08
Measurement Service .....	SP-MSRMT
Misc Repair .....	SP-MR
PM and Engineering Services .....	SP-PM
Service, Igniter Circuit Tester .....	SV-ICT
Training .....	TRNG

**Part No.**



CST-100 Starliner Spacecraft capsule on Raptor Scientific custom Weight and CG instrument

# HEAT FLUX & RADIOMETERS

## Heat Flux Transducers

Heat Flux transducers are passive devices that generate an electrical signal proportional to the total heat rate applied to the surface of the sensor, which can be used to very accurately calculate heat flux. The sensor measures the local heat flux density in one direction and expresses the result in watts per square meter. Our transducers can be used for measurement on direct contact applications greater than 50 MW/m<sup>2</sup> range with a less than 10 $\mu$ s response time.

## Thermocouples

The response time achievable with our thermocouples lends to applications that require extremely quick measurements, such as the inside of a gun barrel and combustion chambers, where the metal wall surface temperatures shift rapidly. Response times as low as 1 microsecond for direct contact temperature measurements exceeding 3,000°F, and diameters as small as 0.015-inches. Our thermocouples can also be mounted “through-the-wall” where it is important to not disturb the surface geometry (ie. applications for rocket nose cones, cannon projectiles, or wind tunnel models).

## Infrared Radiometers

IR Radiometers are used for measuring heat flow through air (heat flux) greater than 20 solar constants maximum recordable temperature. Kendall Radiometers are self-calibrating cavity radiometers which provide an accurate absolute standard for total irradiance. The radiometer receiver is a blackbody cavity which has an electrical heater installed so that substituted electrical heating is equivalent to the incoming irradiance at the radiometer aperture. IR Radiometers are primarily used for the testing of satellites, green power industry with solar panels and solar concentrating power plants. Our products have the ability to measure up to 20 solar constants (20x the power of the sun).



Kendall MK I IR Radiometer Control Unit with Filter





Heat Flux transducer

Heat Flux transducers for use in wind tunnels, arc jet testing, high performance jet engines, internal combustion engines and fire prevention testing

Heat Flux probe



Thermocouple for temperature measurement on direct contact applications

**Heat Flux Transducers/Radiometers**

**Part No.**

64 Series Heat Flux Transducers/Radiometers .....	64 Series
Ellipsoidal Radiometer .....	EP Series
Platinum Thin Film Gages .....	PTF Series
Universal Heat Flux Meter .....	H-201
Heat Flux Meter, Hand-Held .....	H-203
Heat Flux Indicator .....	H-204
High Temperature Heat Flux Transducers .....	H Series
5-Channel Heat Flux Meter .....	5H203-DR1
Furnace Heat Flux Probe .....	GTW Series
Space Flight Qualified Heat Flux Sensors .....	20850 Series

**Kendall Absolute Radiometers**

**Part No.**

Kendall MK I, Master Control Unit .....	MK I
Kendall MK IV, Water Cooled .....	MK IV
Kendall MK V .....	MK V
Kendall MK VI Solar 5° Pyrheliometer .....	KM VI
Kendall MK VIII, Irradiance to 20 kW/m <sup>2</sup> .....	MK VIII
Kendall MK IX, Irradiance to 1000 W/m <sup>2</sup> .....	MK IX
Kendall MK X, Mini Control Unit .....	MK X
Kendall MK XI, Irradiance to 20 W/cm <sup>2</sup> .....	MK XI

**Thermocouples**

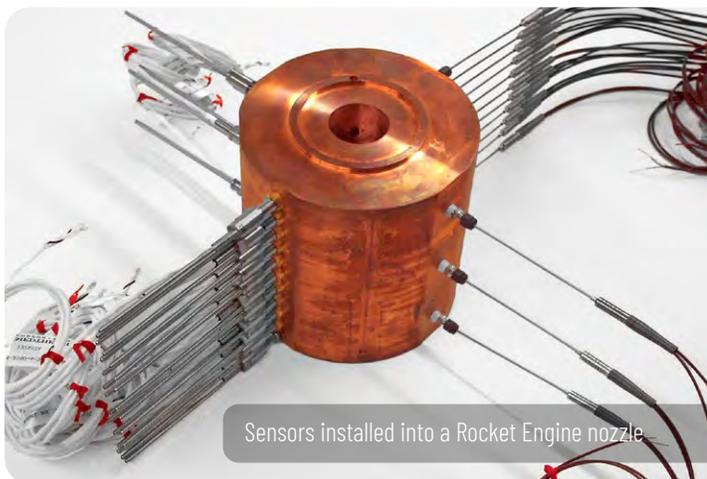
**Part No.**

Fast Response Thermocouples .....	TCS Series
Miniature Thermocouples .....	TCFW Series
Aerodynamic TC Probes .....	TCS-802 Series
High Temperature Flight Thermocouples .....	11410 Series
Industrial Thermocouples .....	MgO Series
Flight Gas Temperature Thermocouples .....	11190 Series
Flight Thermocouple Reference Junctions .....	50269 Series

**Heat Flux Transducer Recalibration**

**Part No.**

HFT(s), Pyrometers, Calorimeters .....	Recalibration
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# RF SYSTEMS

## **InfiniScan Max**

The InfiniScan Mechanically Assisted, or MAX, system variant leverages metrology-grade location tracking and built-in automation for highly accurate and repeatable aperture formation. The MAX system RF Head leverages the WaveCore source/receive module to cover the frequency range of 2-18 GHz, coupled with a custom-designed antenna to collect both horizontal and vertically polarized data. The incorporation of automation to control the aperture formation and maintain true desired observation geometry greatly improves measurement performance over traditional methods.

## **InfiniScan Handheld**

The handheld unit employs the WaveCore microwave transceiver which contains all the RF electronics and antennas to cover the frequency range of 2 - 18 GHz. Simple user controls and an on-board display allow the user to operate all functions of the software to calibrate the radar, align to the target, measure the target, and view the data which was collected.

## **InfiniScan Backpack Unit**

The backpack unit has a padded waistband and shoulder straps as well as a hard-shell enclosure that houses custom electronics to provide power and communication signals to the handheld unit. Ruggedized and latching circular connectors and a custom cable are the only interfaces between the backpack and handheld unit. An auxiliary circular connector provides access to additional signals such as Ethernet, USB, and VGA.





Legacy  
SCI-Xe-AC

<b>Product</b>	<b>Part No.</b>
HH1, High Performance Workstation .....	DK51000D
HH1, Rugged Workstation .....	DK51001D
HH1, TEMPEST Workstation .....	DK51002D
HH2, High Performance Workstation .....	DK52000D
HH2, Rugged Workstation .....	DK52001D
HH2, TEMPEST Workstation .....	DK52002D
MAx, Band 3 .....	DK53000D
MAx, Band 2, Band 3, Mini-MAx .....	DK53004D
Modernization Upgrade, SCI-2k, LS1 .....	RFS-3KA
Modernization Upgrade, SCI-2k-B2A .....	RFS-3KB
InfiniScan Transmitter Set .....	DK10100D
InfiniScan Alignment Wand .....	DK01422D
Analysis Workstation, High Performance, Handheld ..	DK10310D
Analysis Workstation, Rugged, Handheld .....	DK10300D
Analysis Workstation, TEMPEST, Handheld .....	DK10301D
Analysis Workstation, Rugged, MAx .....	DK10321D
Analysis Workstation, TEMPEST, MAx .....	DK10322D
System Referencing Set A .....	DK10200D
System Referencing Set B .....	DK10201D
Mobility Kit B, Base .....	DK10002D
Mobility Kit B, HH1 .....	DK10002D-01D
Mobility Kit B, HH2 .....	DK10002D-02D
Mobility Kit B, HH1 & HH2 .....	DK10002D-03D
Sensor Payload, Band 2, IPS .....	DK01423D
Sensor Payload, Band 2, no IPS .....	FA01423D
Sensor Payload, Band 3, IPS .....	DK00787D
Sensor Payload, Band 3, no IPS .....	FA00787D
Sensor Payload, Band 3, no IPS, no pan .....	FA00501D-01D
Sensor, Band 3, no IPS .....	FA00370D
Sensor Payload, Band 4, IPS .....	FA00450D
RFS-R3 Rotator .....	CC10100D
InfiniScan Mini-MAx .....	FA13001D



InfiniScan  
MAx with  
Band 3



InfiniScan (HH2)  
on Mobility Kit B

## Raptor Scientific Product Lines



### Raptor Scientific - Avionics Systems

Peterborough, NH 03458



**(603) 924-5922**

CAGE: 1A9E1



### Raptor Scientific - Pressure Temperature

Woodland Hills, CA 91367



**(818) 887-5460**

CAGE: 13859



### Raptor Scientific - Physical Properties

Berlin, CT 06037



**(860) 829-0001**

CAGE: 52892



### Raptor Scientific - Heat Flux / Radiometers

Huntsville, AL 35804



**(256) 837-2000**

CAGE: 53103



### Raptor Scientific - RF Systems

Livermore, CA 94550



**(925) 443-9001**

CAGE: 1K9E2

Visit us online at [www.raptor-scientific.com](http://www.raptor-scientific.com) to learn more.