

ITRES Special Projects

Airborne Hyperspectral Mapping

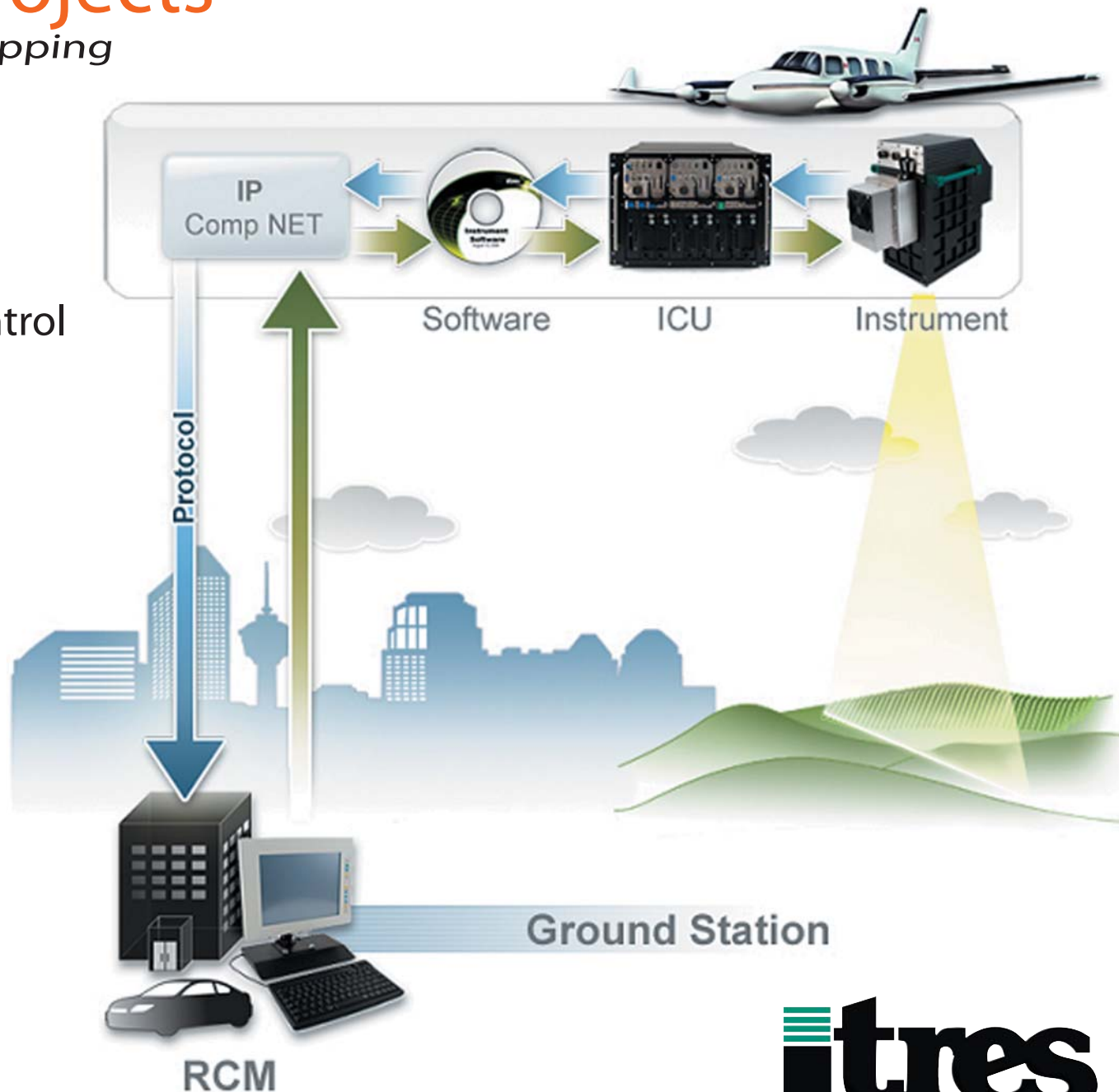
Remote Operation
Capability
RF-Based Hyperspectral
Acquisition Command & Control

Full Real-Time Remote Control
of VNIR, SWIR, or Thermal
Hyperspectral Imagers

Flexible - Utilizes Existing IP-
Compatible RF Data Downlinks

Enables Real-Time QA and Decision
Making by Ground Personnel

Unmanned Airborne Vehicle (UAV)
& Small Aircraft Compatible



Flexible, UAV-Compatible Hyperspectral Imaging

With the introduction of remote radio frequency (RF) down-link capability, ITRES again pushes the operational capabilities of commercial airborne hyperspectral mapping to a new frontier. Real-time ground-based control and monitoring of hyperspectral IR mapping imagery acquired using an Unmanned Airborne Vehicle (UAV) or small personal aircraft is available, without the need for an on-board operator.

A new miniaturized Instrument Control Unit, custom readout system, and down-link hardware/software system utilizing TCP/IP-based protocols makes this possible. The system is flexible, in that it can be used with any existing TCP-compatible RF downlink system.

RF Control Modes

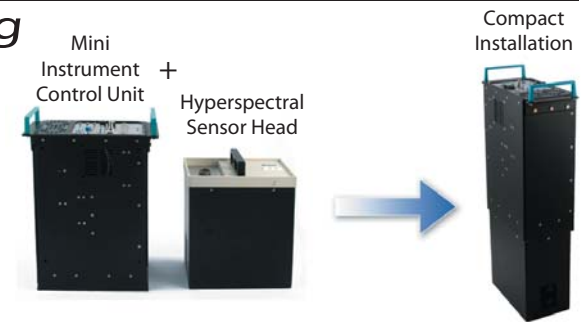
1. Full remote control plus full data download and archiving;
2. Full remote control plus real-time visual download (1-3 bands);
3. Blind remote control.



ITRES Special Projects

Airborne Hyperspectral Mapping

Interested in further information? You can easily contact ITRES by telephone, e-mail at info@itres.com, or visit us on the web at www.itres.com.



Remote Downlink Modes and Throughput by Sensor

Sensor	Mode 1: Full control, all data is sent to a processing station, on-board data backup		Mode 2: Full control, only selected bands are sent to a processing station, on-board data backup. Operator chooses which band's data is sent down during a flight line.		Mode 3: Full control combined with "blind mode", on-board data backup. Only critical information is sent down. Instantaneous switch to modes 1 or 2.	
	Uplink Bandwidth (Kbytes/sec)	Downlink Bandwidth (Kbytes/sec)	Uplink Bandwidth (Kbytes/sec)	Downlink Bandwidth (Kbytes/sec)	Uplink Bandwidth (Kbytes/sec)	Downlink Bandwidth (Kbytes/sec)
CASI 1500 (VNIR) Burst Data Rate (Kbytes/sec) 10,000.00 # Spatial Pixels 1500.00 # Spectral Channels 288.00 Frame Rate (f/sec) up to 100	0.064	10,000.064	0.064	3-300	0.064	0.100
CASI 550 (VNIR) Burst Data Rate (Kbytes/sec) 2,500.00 # Spatial Pixels 550.00 # Spectral Channels 288.00 Frame Rate (f/sec) up to 100	0.64	2,500.64	0.64	1.1-110	0.64	0.100
TASI 600 (TIR)/ SASI 600 (SWIR) Burst Data Rate (Kbytes/sec) 16,400.00 # Spatial Pixels 640.00 # Spectral Channels 128.00 Frame Rate (f/sec) up to 100	0.64	16,400.64	0.64	1.3-130	0.64	0.100
TABI 320 (Thermal IR) Burst Data Rate (Kbytes/sec) 384.00 # Spatial Pixels 320.00 # Spectral Channels 1 (broadband) Frame Rate (f/sec) up to 100	0.64	384.64	0.64	0.64-64	0.64	0.100

All ITRES sensors are calibrated to a traceable standard.
 Specifications subject to change without notice. ©2008 ITRES Research Limited