



CRYSSALIS™

SOFTWARE/HARDWARE/ANTENNAS



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GROUND CONTROL SIMPLIFIED

Crysalis™ — AeroVironment's next-generation Ground Control Solution for command & control of compatible AeroVironment unmanned aircraft systems (UAS) & payloads through an intuitive user interface. Crysalis improves battlefield communication and collaboration by enabling users to easily share real-time information and coordinate mission-critical decisions.

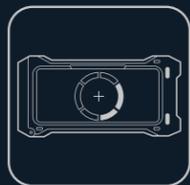
Crysalis offers complete interchangeability, either as a network of interconnected, modular elements or turnkey systems—both are adaptable to meet specific missions. Crysalis delivers a standardized User Experience (UX) across assets for streamlined training, operations and deployment.

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INTUITIVE USER INTERFACE

Improved situational awareness; designed to reduce cognitive load and training burden to allow the operator to focus on the mission. Streamlined battlefield communication & collaboration.



MODULAR AND ADAPTIVE

One Solution, Multiple Mission Capabilities; software-based GCS platform allows operators to meet dynamic mission needs.



STANDARDIZED USER EXPERIENCE

Streamlined operations and deployment across compatible UAS and their payloads with a full suite of software tools—from mission planning to multi-mode flight operations.



INTEGRATION WITH BATTLEFIELD SYSTEMS

Compatible with Nett Warrior and battlefield management applications to match increasingly complex network-centric battlefields.

TACTICAL MISSION OPERATIONS



Independent aircraft command & control, UAS operational hand-offs, and remote video terminal capabilities across the battlefield with direct or supporting roles, all equipped with Crysalis-enabled devices.

CUSTOMER BENEFIT

- » *Standardized UX—Streamlined Operations*
- » *Mastery of User Experience (AV UAS)*
- » *Rapid, Agile Operational Response*
- » *Reduced Operator Cognitive Load*

NETWORK-CENTRIC BATTLEFIELD



Today's battlefield is network-centric in nature requiring collaboration across multiple nodes/platforms. Crysalis allows multiple operators in the battlefield area with either direct or supporting roles to share mission-critical information quickly and securely.

CUSTOMER BENEFIT

- » *Modular & Adaptive—Operational Versatility*
- » *Simplified Battlefield Intelligence Sharing*
- » *Enhanced Mission Coordination/Execution*
- » *Interoperable with DoD systems*

ISR & ACTIONABLE INTELLIGENCE



Gathering actionable intelligence and real-time distribution up channels to strategic decision-makers is mission defining. Crysalis will aid operations by distributing intelligence in real-time from multiple sources when action can be taken.

CUSTOMER BENEFIT

- » *One Solution—Multi-Mission Capabilities*
- » *Faster Decision Making—Tactical Execution*
- » *Increased Force Projection/Protection*
- » *Shorten the Time from Target Identification to Prosecution*



CRYSLIS™ CONTROL // MAIN WINDOW

FLIGHT TIME 01:33

GCS STATUS 64% 4+ 100%

AIRCRAFT INFO AND BATTERY STATUS PA10880 - NAV 23.9V

AIRCRAFT TELEMETRY

RNG 0.3 nmi	G/S 6 m/s	AGL 371 ft
BRG 345°	W/S 2 m/s 0°	MSL 1750 ft → 1430 ft
N 34° 17' 16.01" W 118° 46' 52.71" 2021-07-07 11:37:28		

ALTITUDE ALT 1424ft

THROTTLE/ALTITUDE ADJUST + -

REVERSE THRUST [Icon]

PAYLOAD CONTROL [Icon]

WAYPOINT CONTROL [Icon]

FLIGHT MODE [Icon]

MISSION PLANNING WIZARD [Icon]

MISSION MANAGEMENT [Icon]

RADIO [Icon]

HOT KEY [Icon]

DIRECT CAMERA POINTING (DCP) [Icon]

SNAPSHOT VIEWS [Icon]

UAV ORIGIN

MAP CENTER

LAST USED

FROM AIRCRAFT

PRE-PLANNED

»» MISSION PLANNING WIZARD

Takes operators through a step-by-step process to set flight operations and mission waypoints, identify any DTED conflicts, or quickly re-fly missions previously saved to the UAS or GCS.

AUTOMATIC CHECKS

✓ DISK DRIVE SPACE	✓ INS BOARD
✓ RADIO	✓ PRIMARY PAYLOAD
✓ GPS	
✓ MISSION VALIDITY	

SKIP PREFLIGHT NEXT

»» BUILT-IN PRE-FLIGHT CHECKLIST

Comprehensive checklist covering avionics & navigation systems, radio systems, mission waypoints, aircraft and payload control and aircraft instrumentation reducing the time from set-up to deployment.

Selected Vehicle PA10880

Air Data Age 00:00

Avionics Software Version 0.4

Magnetic, True Heading 225°, 225°

Pitch, Bank Angle 0°, 0°

Yaw, Roll Rate 0°/s, 0°/s

Climb Rate 0.0ft/s

Airspeed, Target Airspeed 13m/s, 13m/s

Video

Map

Split

Summary

Diagnostics

»» MISSION FLIGHT DIAGNOSTICS & CAMERA MODES

View aircraft, GPS, telemetry, radio, GCS and mission plan diagnostics at any time with dynamic retasking. Select from multiple view options including Real-time Video, Map, Split Screen and Summary mode to customize your viewing experience.

CAMERA LASER

GIMBAL STATUS

STOWED UNSTOWED

ORIENTATION

FRONT SIDE

CAMERA SELECT

OFF EO IR

FILTERED

ZOOM: 1/3

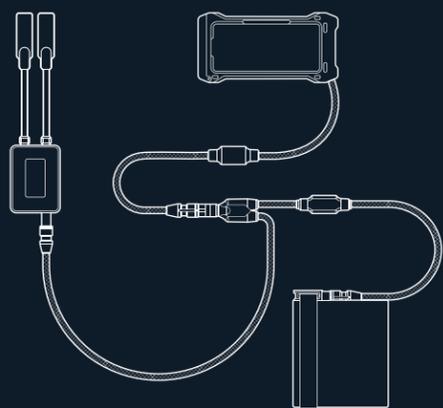
SKIP PREFLIGHT NEXT

»» PAYLOAD CONTROL

Quickly access multiple camera and payload status and control options with zoom capability.

CRYSALIS™ RVT

REMOTE VIDEO TERMINAL



USE CASE

Single operator [wearable], situational awareness, battlefield coordination and support to large and/or small teams; passive downlink video viewing and UAS telemetry data

DISTINCTIONS

PORTABILITY // WEARABLE

RANGE // 5 km

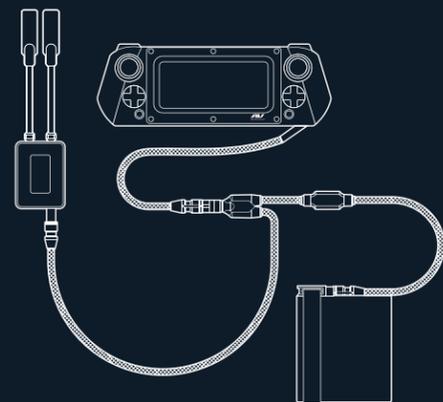
SETUP TIME // 5 min

COMPONENTS

- » End User Device (EUD): Samsung™ smartphone in Juggernaut Case™
- » APP: Crysalis™ RVT
- » Antenna: pDDL
- » Battery: Single BB-2557

CRYSALIS™ ULTRALIGHT GCS

ULTRALIGHT & WEARABLE



USE CASE

Single operator [wearable]; ideal for on-the-move and mobile ISR operations; virtual touchscreen or tactile joystick control of UAS and payloads

DISTINCTIONS

PORTABILITY // WEARABLE

RANGE // 5 km

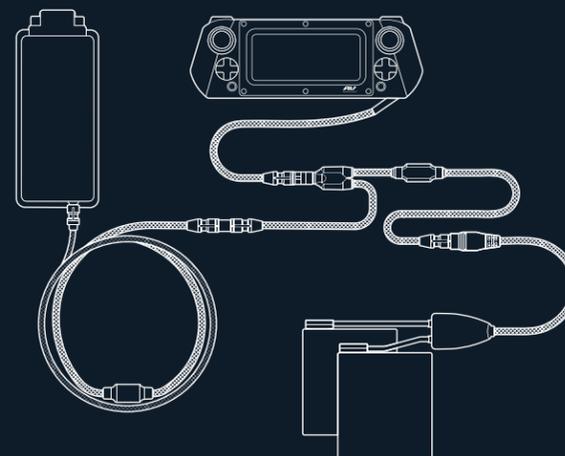
SETUP TIME // 5 min

COMPONENTS

- » EUD: Crysalis™ Controller Pro
- » APP: Crysalis Control
- » Antenna: pDDL
- » Battery: Single BB-2557

CRYSALIS™ TACTICAL GCS

LIGHTWEIGHT & MODULAR



USE CASE

Single operator deployment and launch, full control of UAS and payloads through virtual or tactile joysticks; backpackable, lightweight, and rugged for use in any environment with an operational range up to 20 km

DISTINCTIONS

PORTABILITY // BACKPACKABLE

RANGE // 20 km

SETUP TIME // 10 min

COMPONENTS

- » EUD: Crysalis Controller Pro
- » APP: Crysalis Control
- » Antenna: Standard Range Antenna
- » Battery: Dual BB-2557

CRYSALIS™ COMMAND GCS

EXTENDED ISR OPERATIONS



USE CASE

Single or dual operator deployment; all-in-one modular and flexible ground control system and payloads through tactile joysticks; ideal for command-level operations; semi-fixed positions

DISTINCTIONS

PORTABILITY // MAN-PACKABLE

RANGE // 20 km

SETUP TIME // 15 min

COMPONENTS

- » EUD: Crysalis™ Controller Lite, Panasonic™ laptop
- » APP: Crysalis Control
- » Antenna: Standard Range Antenna
- » Battery: Dual BB-2557

CONFIGURE YOUR SYSTEM



OPTIONAL END USER DEVICES

A	CRYSLIS CONTROLLER PRO	Samsung smartphone in custom wrapper; virtual touchscreen or tactile joysticks for active input to Crystals Control app
B	CRYSLIS CONTROLLER LITE	Custom controller with tactile joysticks for active input to Crystals Control app
C	CRYSLIS RVT	Samsung smartphone in Juggernaut Case; touchscreen
D	ANDROID® PHONE	Standard phone-based EUD
E	PANASONIC LAPTOP	Fully ruggedized 2-in-1 hybrid laptop

COMPATIBLE ANTENNAS

i	pDDL	pDDL: Ultra-compact
ii	STANDARD RANGE ANTENNA	Lightweight; patch/omni-directional configuration
iii	ERA	Add-on kit for the standard antenna

NETWORK CONNECTIVITY

AeroVironment's Digital Data Link (DDL) is a small, lightweight, broadband digital network module enabling enhanced command and control of small UAS. DDL is IP-based, allowing maximum flexibility and interoperability between small airborne and ground systems with limited power and bandwidth to maximize the number of systems that can operate in a given area.



DDL FREQUENCIES



COMPATIBLE UAS



PATHS TO UPGRADE // CRYSLIS GCS



LEGACY GCS

NOT INCLUDED

CRYSLIS™ RVT

COMPONENTS NEEDED

- 1 SAMSUNG SMARTPHONE IN JUGGERNAUT.CASE
- 2 CRYSLIS RVT APP
- 3 CABLING
- 4 pDDL

CRYSLIS™ ULTRALIGHT GCS

COMPONENTS NEEDED

- 1 CRYSLIS CONTROLLER PRO
- 2 CRYSLIS CONTROL APP
- 3 CABLING
- 4 pDDL

CRYSLIS™ TACTICAL GCS

COMPONENTS NEEDED

- 1 CRYSLIS CONTROLLER PRO
- 2 CRYSLIS CONTROL APP
- 3 CABLING

CRYSLIS™ COMMAND GCS

COMPONENTS NEEDED

- 1 CRYSLIS CONTROLLER LITE
- 2 CRYSLIS CONTROL APP
- 3 CABLING