



# Communication Suite for UAVs

LOS, SATCOM and SDR

ELK-1882 NC<sup>2</sup> Family



## Introduction

The Communications Suite for UAVs provides UAV operators, maneuvering forces and C4I centers with a complete communications solution, including broadband data transfer from sensors such as radar, SIGINT and VISINT operating throughout a region. The suite is designed for easy adaptation to a range of UAV types, including MALE and HALE platforms. The suite enables both line of sight (LOS) and beyond line of sight (BLOS) communications for maximum mission flexibility and reliability. Robust and dependable, the UAV communications suite is based on ELTA's field-proven ELK-1882 NC<sup>2</sup> product family deployed on UAVs worldwide.

The modular communication suite can be configured with the following capabilities:

**LOS Wideband** – primary flight data link and transfers data to Ground Datalink Terminals (GDT) from all the sensors.

**LOS/NLOS Narrowband** – a secondary link responsible for redundancy in case of signal disruption (electronic attack, weather), guaranteeing continuous UAV data link and command & control connection.

**SATCOM Wideband** – automatic switchover to ensure a continuous data, video and command & control connection when the UAV flies BLOS.

**SATCOM Narrowband** – a secondary link for controlling the UAV in the event communication is lost.

**Software Defined Radio (SDR)-ARC-840D** – enables the UAV operator to communicate by voice and data with soldiers in the field and operators in the ATC (Air Traffic Control) tower.

## Key Features

- Long-range, very high data rate
- Low latency
- COMSEC & TRANSEC - Resistant to jamming by means of intelligent algorithms
- Optimized SWaP
- MIL STD supported
- ATOL (Automatic Take Off and Landing) &
- RVT (Remote Video Terminal) supported
- Modular – fully adaptable to customer requirements (frequency band options, modulations, transmission power, antenna) – see table



SATCOM WB  
& NB AAU



Directional  
LOS AAU



NC2 Hub/Terminal TRU



NC2 Hub/Terminal TRU



ARC-840D



## Specifications

Airborne communications systems are configured to match the UAV type, size and mission requirements. To consolidate space on the UAV, a single Airborne Transmission/Receiver Unit (ATRU) can support both LOS communications and SATCOM. The suite adheres to Size, Weight and Power (SWaP) requirements and is ruggedized for highly reliable operation in harsh environments (MIL STD - 810F & G, 461F).

Parameters/ Specifications	Mission LOS WB	Flight Data & Backup LOS NB	Mission SATCOM WB	Backup SATCOM NB	SDR
Frequency Band	C, X, Ku, Ka	UHF, L, S, C, X, Ku	Ku, Ka	Ku, Ka	V/UHF for voice L band for data
Data Rate*  (Up/Down adapted for customer requirement's)	Downlink: up to 100Mbps @400Km  Uplink: Up to 2Mbps @400Km	Downlink: up to 10Mbps  Uplink: up to 1Mbps	Outbound: up to 200Kbps  Inbound: up to 15Mbps	1, 4, 8, 32 Kbps	75bps – 56Kbps UHF SATCOM  100Kbps – 2Mbps U/ Lband MANET Networks
Down & Uplink TDD = Time Division Duplex FDD = Frequency Division Duplex	TDD/FDD	TDD/FDD	FDD	FDD	FDD
Airborne Antenna	Omni directional, Directional (Planar/dish)	Omni directional, Directional (Planar/dish)	Directional (Dish - 30, 46, 60, 75cm) AESA	Micro AESA SATCOM Terminal 28x11x5cm	Omni directional
Airborne Tracking	Auto tracking, 2 or 3 axis, pedestal	Auto tracking, 2 or 3 axis, Airborne pedestal	Auto tracking, 2 or 3 axis, Airborne pedestal	Auto tracking	
Payload Weight (Depends on configuration)	4-20Kg	4-20Kg	20Kg	1.5Kg	10Kg

\*Applicable to link budget



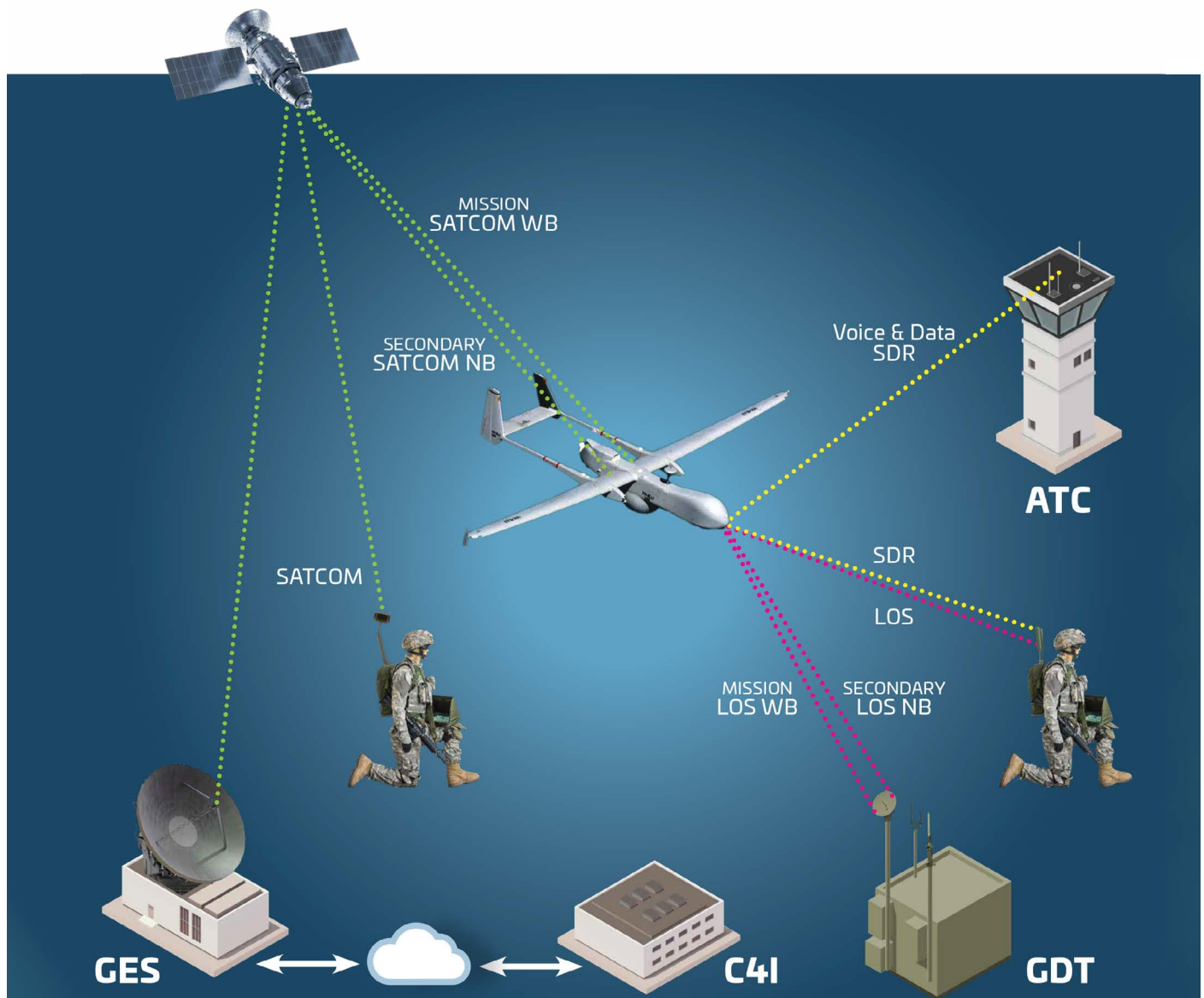
# Communication Suite for UAVs

## LOS, SATCOM and SDR

### ELK-1882 NC2 Family

#### Uninterrupted Communication

The suite's key advantage is the ability of the UAV to maintain a continuous data link even in the event of disruption, whether by jamming, network congestion, weather or other reasons. When the UAV is beyond line of sight, the data link is automatically transferred from the LOS Wideband (WB) to SATCOM WB. Both LOS and SATCOM Narrowband (NB) units provide redundancy to each of its main mission links, and the SATCOM NB provides automatic backup for the UAV if communication is lost. Since there are more channels being provided with different bandwidths supported, the suite can execute more efficient Electronic Counter Counter Measure (ECCM) strategies to overcome jamming and cyber-attacks. The suite employs Communications Security (COMSEC) and Transmission Security (TRANSEC) combined with intelligent algorithms using such methods as frequency hopping and spread-spectrum.



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