SkyLink

C-band CNPC Dual Radio Data Link

Overview

SkyLink is a C-Band (5030-5091 MHz) bi-directional, Multiple Input & Single Output (MISO) dual radio system offering UAS operators reliable platform control using aviation-protected spectrum. It fully complies with the RTCA DO-362A standard: *Command and Control (C2) Data Link Minimum Operational Performance Standards (Terrestrial) for Control and Non-Payload Communication (CNPC) between an Unmanned Aircraft System (UAS) and its Ground Control Station*.

Features

- Airborne radio with a dipole antenna complies with Category AXS of DO-362A.
- Ground radio with 16 dBi antenna gain complies with Category GXLS of DO-362A.
- Airborne (ARS) and Ground (GRS) Radio Systems share a common radio design,
- Dual Radio System
  - *User Plane* Radio
    - Transparent bi-directional data link between GRS and ARS
  - *Control Plane* Radio
    - Handles signaling between ARS and GRS entities in support of link management.
    - Hand-over function when passing pilot control from a *Serving* GRS to *Target* GRS
    - Signal losses due to propagation, pattern diversity, and depolarization (except during hand-over) are mitigated.
- Dynamic transmit power: 10W or 100mW
- Status, integrity, and health monitoring
- UTC synchronized TDD message frame structure
- Environmental DO-160G
- Software DO-178C Level C
- Complex Hardware DO-254 Level C

ARS Technical Specifications

Specification	Value
Input Power	6S LiPo / 24 Vdc
Size	33 x 51 x 78 mm
Weight	125 grams
Operating Temp	-45 to 70°C
Radio	
Band	C-Band: 5030 to 5091 MHz
Transmit Power	10 W / 100 mW switchable
Receiver Sensitivity	-113.5 dBm
Doppler Capture Range	±12.5 kHz
Data Transmission	
Modulation Symbol Rate	138 ksps 5/8 TCC
User Data Bits (FEC Rate)	216 Bytes / 50ms
Timing/Position Input	
UTC	1 PPS Time Pulse
Position	NMEA 0183 115,200 bps
Interface	RS-232
Environmental	
DO-160G	Temperature Cat B2
Part Numbers	
SkyLink ARS	UAV-1006082-001
SkyLink GRS	UAV-1006090-001
SkyLink GPS Ethernet HUB	UAV-1006103-001
5GHz Blade Antennas	UAV-1006129-001
truFYX EXT GPS	UAV-1004957-001
George G3 Autopilot	UAV-1005526-001

Regulatory

- FCC 47 CFR Part 87
  - 2AFFTC2XCP0 (in process)

uAvionix

C-band CNPC Dual Radio Data Link

SkyLink

SkyLink GRS Specification

Specification	Value
Input Power	24 Vdc
Size	42 x 264 x 746 mm
Weight	225 grams
Operating Temp	-45 to 70°C
Radio	
Band	C-Band: 5030 to 5091 MHz
Transmit Power	10 W
Receiver Sensitivity	-113.5 dBm
Doppler Capture Range	±12.5 kHz
Antenna Gain	12 ±1 dBi
Data Transmission	
Modulation Symbol Rate	138 ksps 5/8 TCC
User Data Bits (FEC Rate)	216 Bytes / 50ms
Timing/Position Input	
UTC	1 PPS Time Pulse
Position	NMEA 0183 115,200 bps
Interface	RS-232
Environmental	
DO-160G	Temperature Cat B2

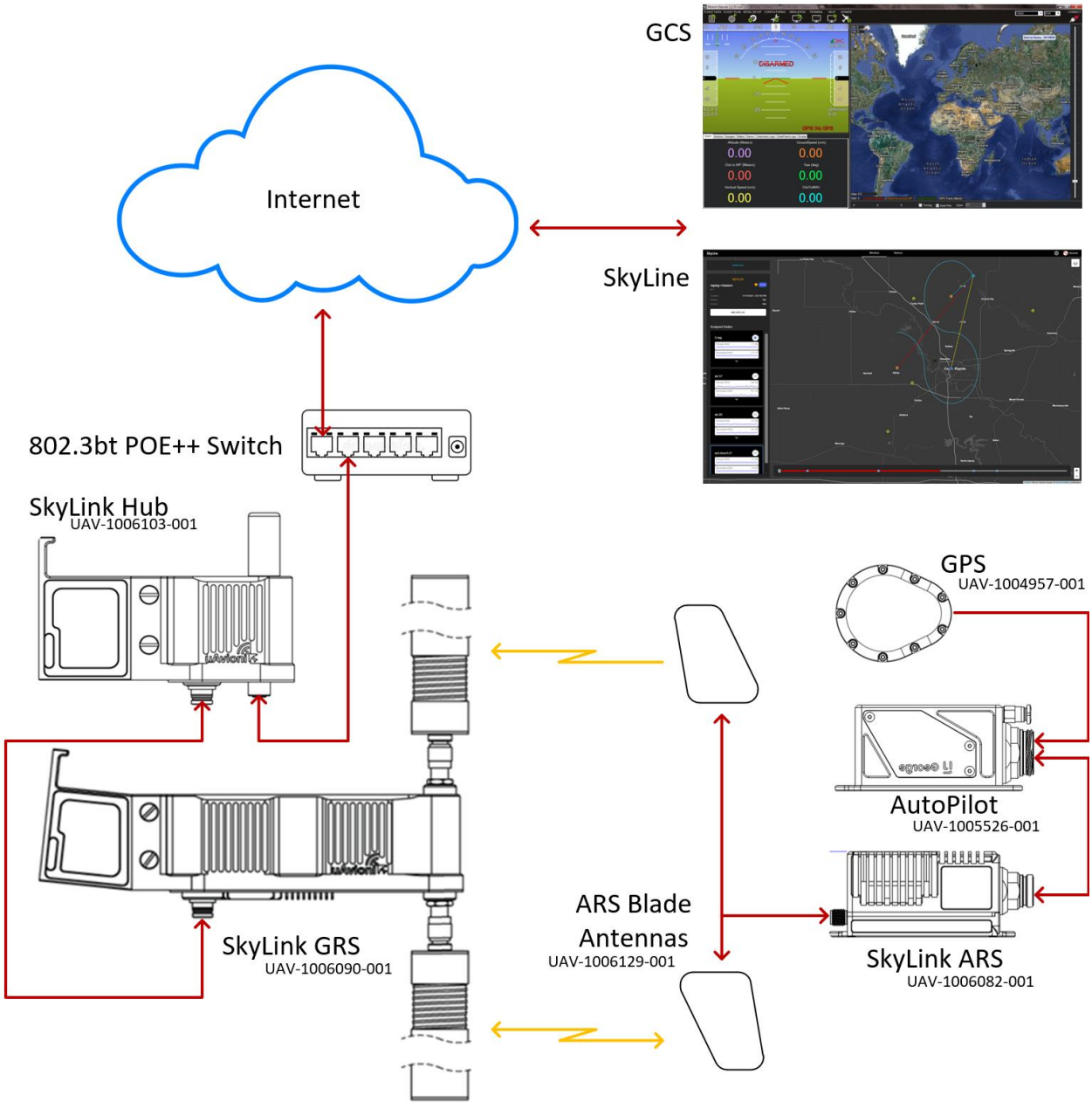
SkyLink HUB Specification

Specification	Value
Input Power	802.3bt POE++
Size	40 x 150 x 115 mm
Weight	125 grams
Operating Temp	-45 to 70°C
GPS	
GPS L1 C/A with SBAS	12 GPS Channels 3 SBAS Channels
HPA / VPA	5 m / 7 m
Velocity Accuracy	3 m/s
Time Accuracy	30 ns
Update Rate	5 Hz
Data Transmission	
Modulation Symbol Rate	138 ksps 5/8 TCC
User Data Bits (FEC Rate)	216 Bytes / 50ms
Timing/Position Output	
UTC	1 PPS Time Pulse
Position	NMEA 0183 115,200 bps
Interface	RS-232
Environmental	
DO-160G	Temperature Cat B2

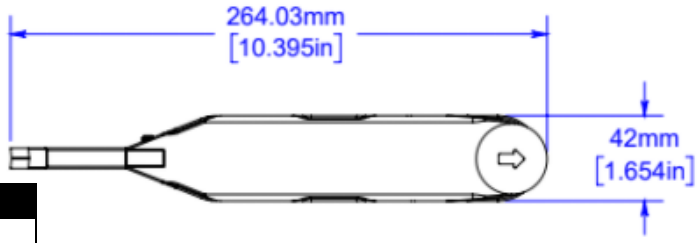
uAvionix

C-band CNPC Dual Radio Data Link

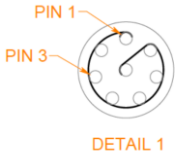
SkyLink

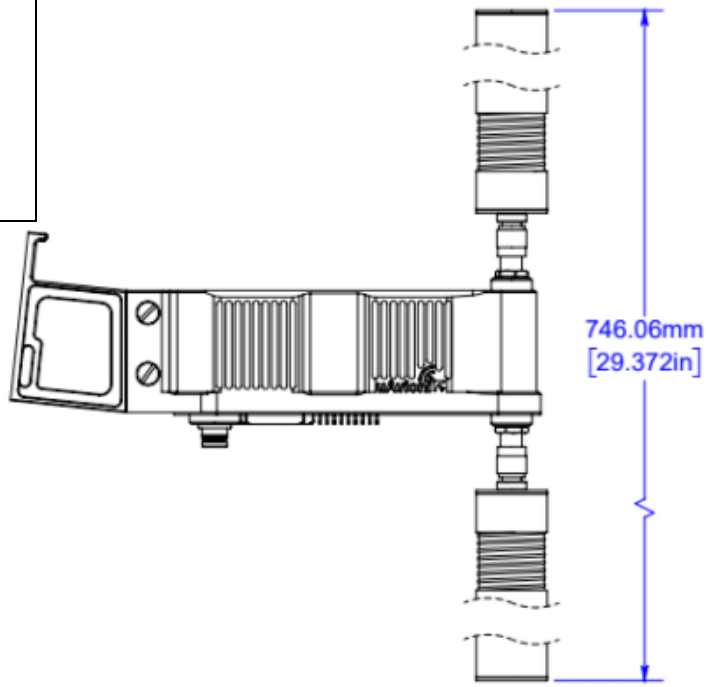


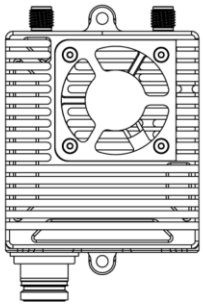
Mechanical Specifications

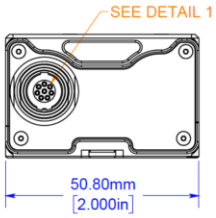


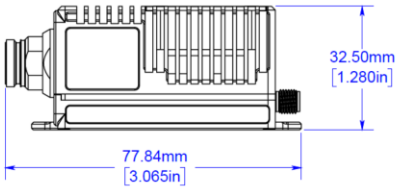
Pin	Type	GRS/ARS	HUB
1	GND		
2	NAV	IN	OUT
3	CTRL RX	IN	OUT
4	CTRL TX	OUT	IN
5	PWR	24V	24V
6	USER RX	IN	OUT
7	USER TX	OUT	IN
8	PPS	IN	OUT











Pin	Type	M12 X-Code
1	D1+	
2	D1-	
3	D2+	
4	D2-	
5	D3+	
6	D3-	
7	D4+	
8	D4-