



Federal Communications Commission
445 12th Street SW
Washington, DC 20554
(316) 821-9516

Title: Bell Textron STA License Request for Test & Evaluation of Airborne Video Downlink Transmission Hardware

Dear FCC,

This request for Special Temporary Authority (STA) is submitted, pursuant to 47 CFR 5.61, to request authorization to perform a series of flight tests, for the purpose of evaluating video downlink transmission hardware from Domo Tactical Communications (DTC). Transmitting hardware under evaluation consists of an airborne transmitter (DTC SOL7HDMRTX), as well as a relay station (DTC SOL7MRRPTR), for extended range from the ground-based receive station. This testing is for the sole purpose of evaluating the performance of the DTC hardware.

Location:

Arlington Municipal Airport and immediate vicinity
Arlington, Tarrant, TX
32:40:01N, 97:05:55W, 620' MSL

Testing to be centered on 32:40:02N 97:05:55W, with maximum radius of 5 miles and maximum flight altitude of 12,000' AGL

(Project detailed in subsequent pages)

Dates of Operation:

Two months, beginning 10/15/2021 and ending 01/01/2022

Operating Frequencies:

Airborne/Mobile: 2.43 GHz, Emission Designator 8M60MOD
Relay (Fixed Loc): 2.12 GHz, Emission Designator 8M60MOD

Stop Buzzer Contact:

Bell Data Operations
Bell Textron
(817) 280-4862

Respectfully,

Jeffrey L Hansen
Bell Flight Test Data Operations Engineer

Post Office Box 482
Fort Worth, TX 76101
(817) 280-4862

Test Objective

The STA Request support the evaluation of DTC video downlink hardware, as well as a DTC relay station for extended range and mitigation of line-of-sight obstructions existing in various test locations.

Concept of Operation

Figure 1 shows an overall map view of the testing area, including the ground-based station, relay station, and mobile transmitter paths. The test area is in the immediate vicinity of Arlington Municipal Airport, Arlington, TX (Tarrant County). The ground path for transmitter evaluation (preliminary to flight, to conserve fuel and flight time) is approximately 10 miles total distance, including return path, and is intended to verify that the equipment works, prior to scheduling and committing airborne assets. The anticipated flight radius is approximately two miles, limited mostly to the South and Southeast, depending upon flightpath clearances.

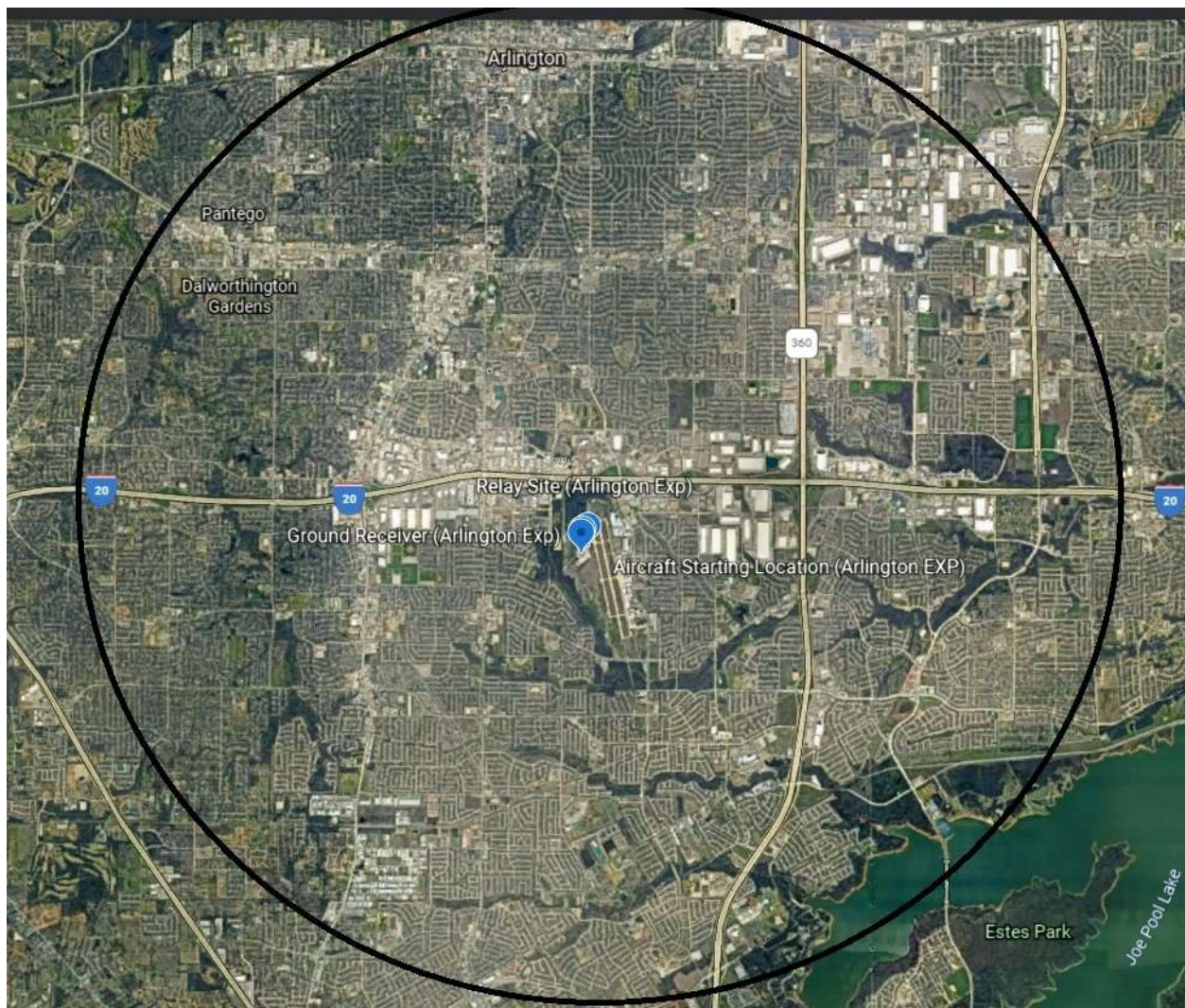


Figure 1: Anticipated Flight Area (approx. 2 mi radius)

Figure 2 shows the intended ground route, taken by a designated vehicle, equipped with the airborne video hardware. It will have the same electrical characteristics as the aircraft installation. The objective is to drive a route that has a line-of-sight (LOS) path to the relay receiver. We anticipate a varying of degree of LOS, along the path, due to RF masking by buildings and other topographical features, which will aid in evaluation of the hardware's mitigation of those factors.

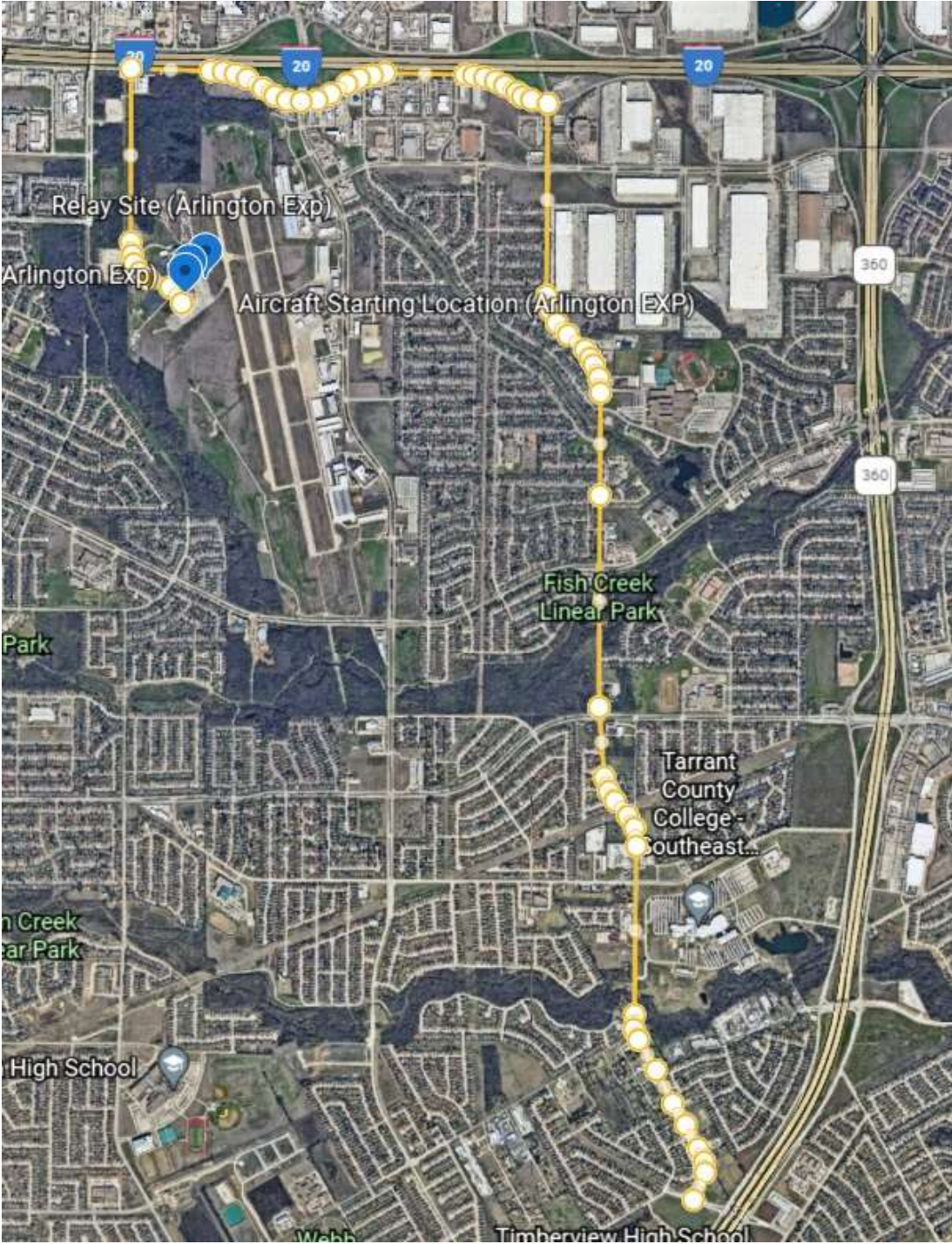


Figure 2: Proposed Ground Route

Figure 3 shows the intended flight path of the aircraft, to be performed after hardware performance is evaluated using ground routes. The path will be South and Southeast of the originating point and will attempt to maintain LOS with the relay site (as designed for the remote site). The duration of this test will be the minimum necessary amount of time required to verify system operation. Ground topology in the Arlington, TX vicinity is mostly flat, with no significant elevation variation along the flight path.

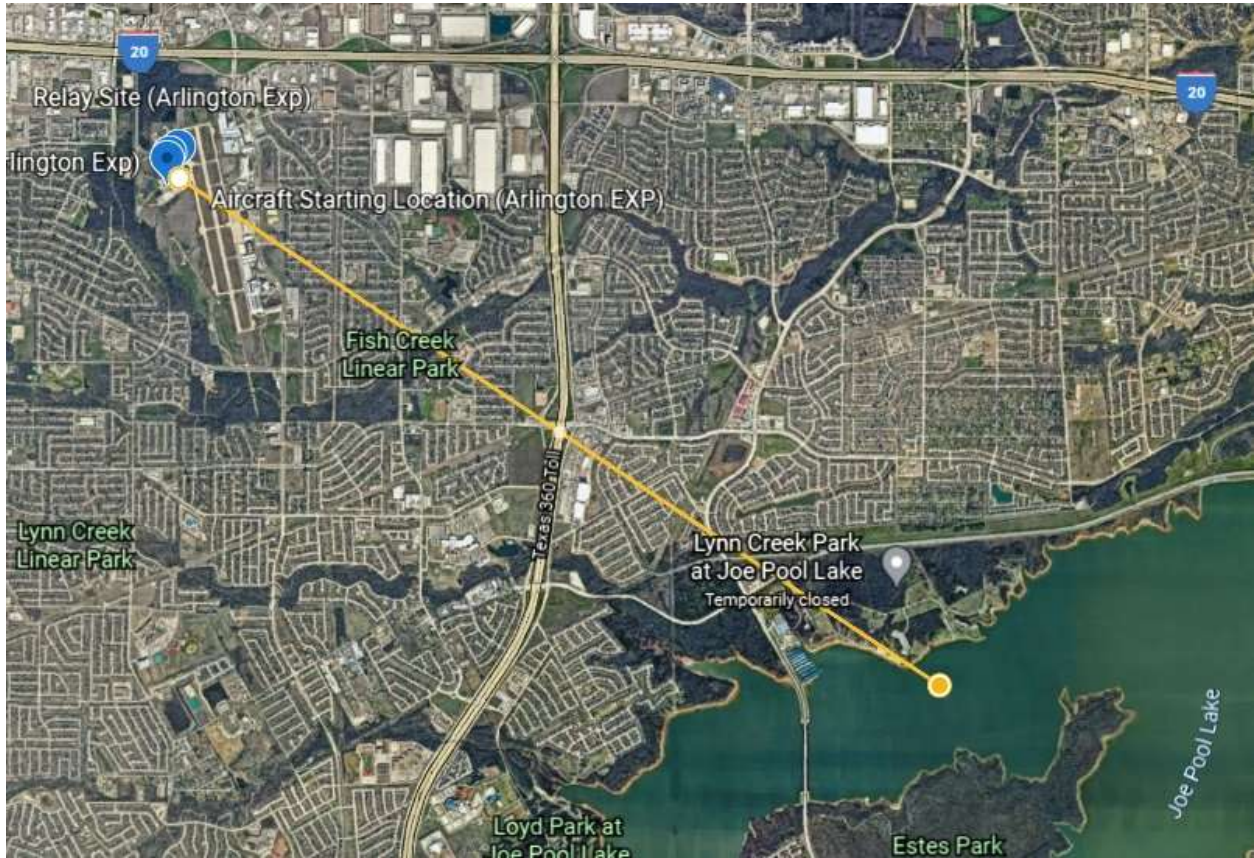


Figure 3: General Flight Path/Radius (two miles)

Figure 4 shows the location of the assets, at Arlington Municipal Airport. The relay site will be located at approximately 32:40:02N, 97:05:55W, 620' MSL (~62' AGL). The aircraft should operate at an altitude of no greater than 12,000' AGL, contingent on airspace clearances. The vehicle will maintain ground level.

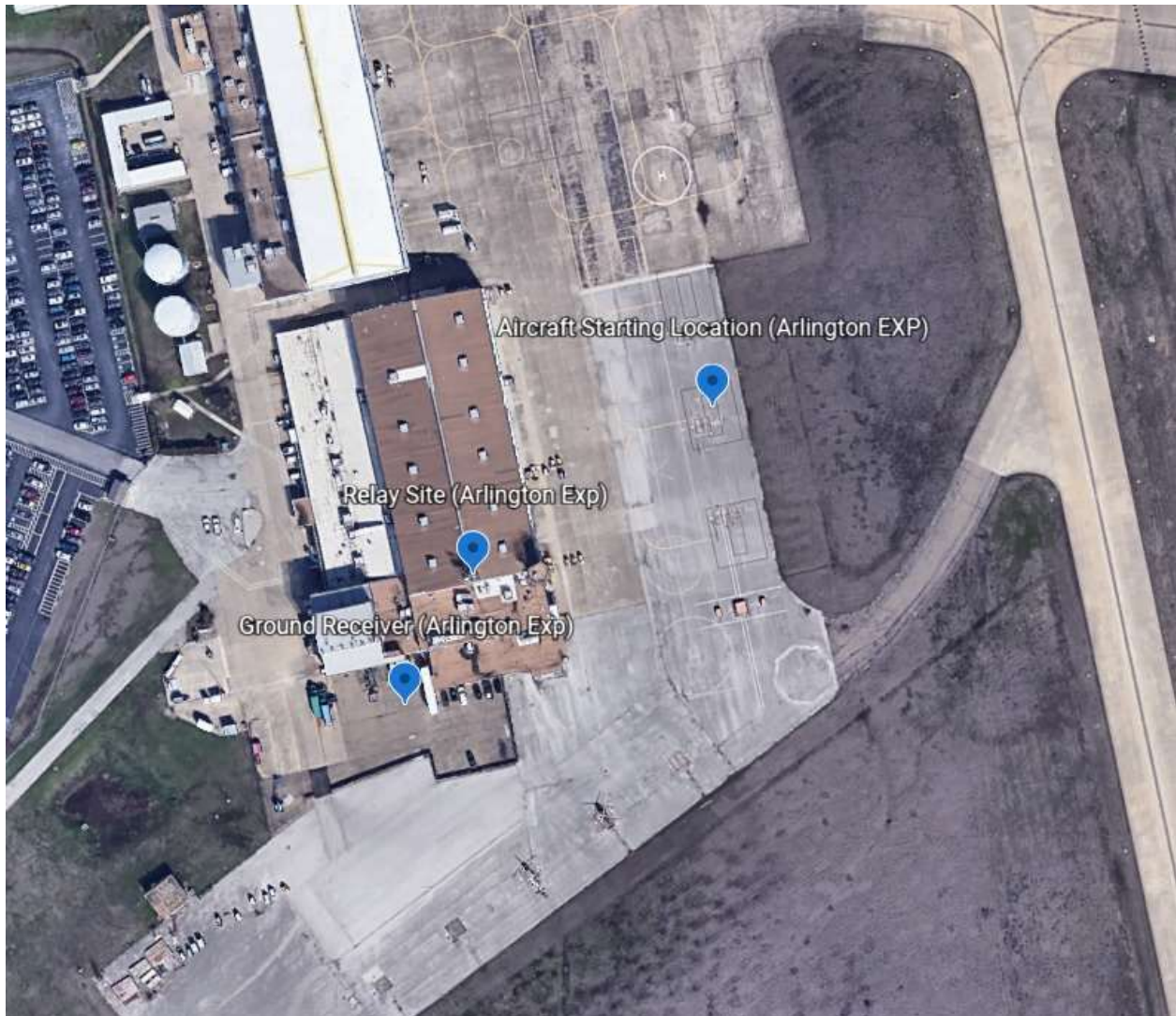


Figure 4: Site Overview, with Labeled Assets

The airborne equipment will be transmitting video information on a frequency of 2.43 GHz. That signal will be compatible with both the ground station and the receive input of the relay station. The receiver will have two receive channels, one configured for 2.43 GHz from the mobile transmitter and the other configured for 2.12 GHz from the relay station. When the mobile station is within the LOS area, the link will be direct via 2.43 GHz. When the mobile station loses LOS with the aircraft, the link will be made via 2.12 from the relay site. The mobile system is designed using Space Diversity techniques, whereby two antennae are used, mounted on areas of the structure that optimize a path to the receive site. On an aircraft, the placement considers aircraft attitude, heading, and structural masking. They transmit on the same frequency and the receiver discriminates between them for best quality. The mobile transmitter is a single channel unit. The output is fed into an RF power divider and the resulting output power is cut in half to each antenna.

Figure 5 is a drawing of the test environment concept. It illustrates the objective of receiving the signal directly from the test platform, while maintaining LOS, and then the signal path, through the relay, while NLOS.

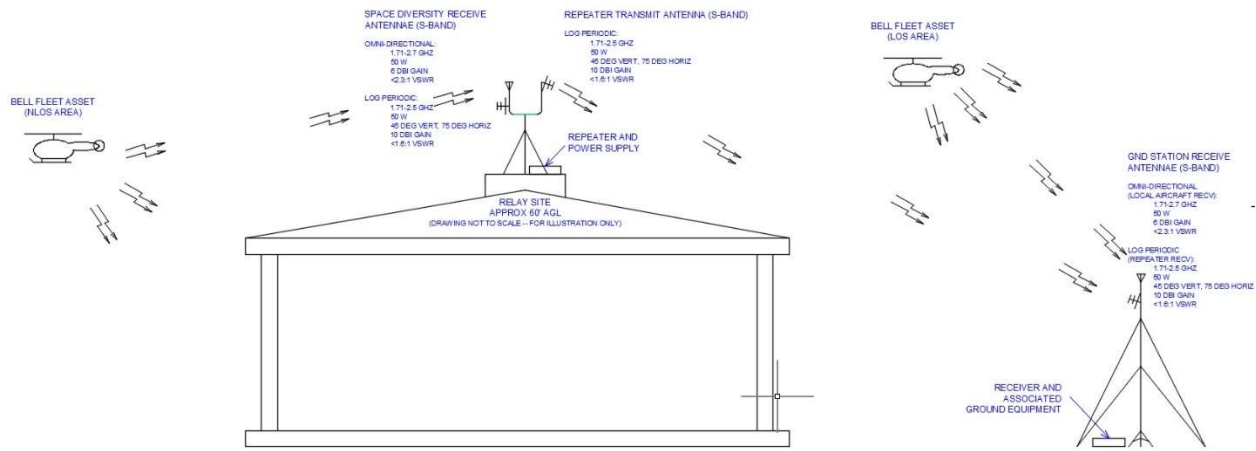


Figure 5: Test Objective Illustration

The test procedure is outlined below.

1. Set up equipment in the locations identified previously
 - a. The relay station and associated antennae will be set up on the roof platform, currently used for the telemetry parabolic dish antennae
 - b. The ground receive station and associated antennae will be set up on the ground, near the building, but will LOS to the relay transmit antenna
 - c. The mobile equipment will be installed in the ground vehicle in such a manner as to replicate the aircraft installation.
2. Power on all system components
 - a. Ensure all links are established and received levels are acceptable
 - b. Verify video quality is acceptable
3. Evaluate the mobile transmitter using a ground path
 - a. The receive station will first verify that the local path, from the mobile transmitter (direct, not using the relay station) is established
 - b. The vehicle will drive away, along the pre-defined path
 - c. The ground station will verify that LOS paths change correctly from direct to relay
 - d. The ground station will continue to monitor video quality and note the approximate location of the vehicle when quality deteriorates, to ascertain cause
 - e. Upon completion of route, power down all equipment
4. Remove airborne equipment from vehicle and install into aircraft
5. Power on all system components
 - a. Ensure all links are established and received levels are acceptable
 - b. Verify video quality is acceptable
6. Perform the flight evaluation of the hardware
 - a. Verify direct video link is acceptable
 - b. Fly away, along the pre-defined flight path

- c. Evaluate video performance along the way
 - i. Change aspects ratios, toward the receive station, via aircraft attitude and heading to establish performance criteria
- d. Upon completion of route, return to base and land
 - i. Verify acceptable handoff to local link with ground station
- e. Power down all equipment upon completion of test

Table 1 lists the RF equipment in the proposed system.

Qty	Supplier	Part No	Function	Gain (dBi)	TX Pwr (W)
Relay RF Equipment					
1	Domo Tactical Comm	SOL7MRRPTR	Signal Relay (RX/TX)	-	2
2	L-Com	HG72710LP-NF	High Gain, Directional RX/TX Ant	10	-
1	L-Com	HG172706U-PRO	Omni-Directional RX Ant	4.5	-
Airborne RF Equipment					
1	Domo Tactical Comm	SOL7HDMRTX	Airborne Video Transmitter	-	2
2	Domo Tactical Comm	ANT4.5N-200250	Airborne TX Ant	4.5	-
Ground Receive Equipment					
1	Domo Tactical Comm	PRORXD-1U	COFDM Receiver/Decoder	-	-
2	L-Com	HG72710LP-NF	High Gain, Directional RX Ant	10	-
1	L-Com	HG172706U-PRO	Omni-Directional RX Ant	4.5	-

Table 1: RF Equipment in System

Table 2 lists the Effective Radiated Power (ERP) in watts, assuming no path loss for transmission from both the airborne installation and the relay site.

Path	TX PWR P(w)	Ant Gain (dBi)	Lossless ERP (w)
Omni-Directional (A/C)	2	4.5	3.4
Directional (Relay)	2	10	12.2

Table 2: Effective Radiated Power for Associated Paths

The following pages consist of supplier documentation, pertinent to the various devices in the system.

ANT 4.5 – 4.5dBi Omni Antenna

COFDM – Video, Audio Telemetry and IP Products

COBHAM

November 2012 Data Sheet

The most important thing we build is trust



The ANT4.5 is a wide band, high gain omnidirectional antenna for use in the 1.15 to 1.4 GHz frequency range at high power levels up to 20W.

The ANT4.5 utilises a co-linear dipole array radiator with integrated balun, making it ground plane independent and suitable for use on any mounting platform, such as man packs and mobile electronic devices. The antenna is designed and intended for use in extreme operational conditions.

Product Features:

- Collinear design gives better gain than dipole and monopole antennas.
- Low VSWR across the band.
- Rugged and light weight

Specification:

Mechanical

Height	350mm
Diameter	25mm
Weight	<300g
Colour	Black
Mounting Method	Direct to connector
Ground Plane Requirement	Ground Plane Independent

Electrical

Frequency Range	1150-1400MHz
VSWR	<2:1
Nominal input impedance	50Ω
Feed Power Handling	20W
Gain (typical)	4-5dBi
Gain Minimum	3.5dBi
Elevation 3dB Beam width	35-55°
Polarisation	Vertical
Azimuth Ripple	±1dB

Environmental:

Wind Survival	100km/h
Temperature Operational	-31 to =51°C
Temperature Storage	-31 to =71°C
Vibration	MIL-STD-167-1 Type 1
Shock	20G/10mS X,Y,Z axes
Water and Dust resistance	MIL-STD-820F (506.4)

Product Codes:

ANT4.5-115140

Products are available to security users only, in licensed frequency bands. These products are not approved for use by unlicensed users. Commercial products are available to unlicensed users - contact Cobham Tactical Communications and Surveillance direct for details

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www.cobham.com/tcs

1710-2700 MHz 6 dBi Gain Omnidirectional PRO Series
Antenna - Type N Female Connector, Fiberglass Radome



HG172706U-PRO

Features

- All weather operation
- Includes heavy duty steel mast mounting brackets
- Lightweight fiberglass radome
- Integral N-Female connector
- Rugged industrial grade design
- 360° Omnidirectional Pattern
- 6 dBi gain

Applications

- 1800, 1900, 2100, 2600 Cellular Band Operation
- Supports midband LTE and 5G networks
- Point to Multipoint and Non Line of Sight (NLOS) Applications

Description

The L-com HG172706U-PRO is a high performance LTE outdoor omnidirectional antenna specifically designed for cellular networks. L-coms HG172706U-PRO has 4 to 6 dBi gain and can be used to broadcast Cellular LTE signals. The HG172706U-PRO operates from 1710 to 2700 MHz which is ideal for 5G, LTE, PCS, UMTS applications including LoRA, LTE-M, and NB-IOT. The Multi-Band design of the L-com HG172706U-PRO antenna eliminates the need to purchase different antennas for each frequency. This simplifies installations since the same antenna can be used for a wide array of telecommunication applications where wide coverage is desired.

The HG172706U-PRO from L-com has omnidirectional patterns with vertical polarization and features Type N connectors. The Type N connectorized HG172706U-PRO antenna from L-com is designed specifically for outdoor operation and is ideal for point to multipoint use in large open areas such as base station installations or large campuses. The included mounting bracket and hardware makes this antenna very easy to install. This LTE outdoor omnidirectional antenna just like our wide selection of superior quality RF parts, ship same day. Contact our knowledgeable and friendly technical support and sales staff for your answers on antennas or other L-com products.

Configuration

Design	Omni
Band Type	Single
Radiation Pattern	Omni Directional
Polarization	Vertical
Connector Type	N Female
Number of Ports	1

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	1,710		2,700	MHz
Input VSWR			2.3:1	
Impedance		50		Ohms
Gain		6		dBi
Input Power			50	Watts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications:
1710-2700 MHz 6 dBi Gain Omnidirectional PRO Series Antenna - Type N Female Connector, Fiberglass Radome HG172706U-PRO

1710-2700 MHz 6 dBi Gain Omnidirectional PRO Series
Antenna - Type N Female Connector, Fiberglass Radome

HG172706U-PRO



Mechanical Specifications

Radome Material	Fiberglass
Size	
Length	12.7 in [322.58 mm]
Width	1.6 in [40.64 mm]
Mounting Mast Diameter	1.18 to 2.36 in [29.97 to 59.94 mm]
Weight	3.3 lbs [1.5 kg]

Environmental Specifications

Temperature	
Operating Range	-40 to +70 deg C
Wind Survivability	124.27 MPH [199.99 KPH]
Humidity	91

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

1710-2700 MHz 6 dBi Gain Omnidirectional PRO Series Antenna - Type N Female Connector, Fiberglass Radome from L-com has same day shipment for domestic and International orders. Our portfolio includes coaxial cable assemblies, connectors, adapters and custom products as well as lightning and surge protectors, NEMA rated enclosures, and an RF product line which includes antennas, amplifiers, passive, and active components.

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. L-com reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. L-com does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and L-com does not assume liability arising out of the use of any part or document.

HyperLink Wireless 698-960/1710-2700 MHz DAS 11 dBi Log Periodic Antenna Model: HG72710LP-NF

Applications

- DAS (Distributed Antenna Systems)
- 700 MHz and cellular applications
- AWS (Advanced wireless services) and PCS (Personal communications services)
- IEEE 802.11b/g WiFi applications
- LTE networks

Features

- Superior Performance
- Weatherproof ABS
- Internal combiner eliminated the need for separate coax cables for each frequency
- Supplied with tilt and swivel mast bracket



Description

Superior Performance

The HyperLink HG72710LP-NF is a high performance wide band log periodic antenna designed to operate from 698-960 MHz and 1710-2700 MHz. This Wideband design eliminates the need to purchase different antennas for each frequency. This simplifies installations since the same antenna can be used for a wide array of wireless applications where wide coverage is desired.

The HG72710LP-NF is ideal for Distributed Antenna Systems, DAS. A DAS system is used to distribute Cellular and WiFi signals throughout a building or area. It is also suited for directional and multipoint IEEE 802.11b/g/n wireless LANs, public wireless hotspot applications and other systems operating in the 2.4GHz ISM band. The broadband characteristics of the antenna enable it to operate over a very wide frequency range. This antenna features 9/10 dBi of gain and a 56°/45° vertical beam width.

Rugged and Weatherproof

The internal components of this antenna are enclosed within a UV-stable white ABS radome for all-weather operation. It is supplied with a tilt and swivel mast mount kit.



Specifications

Electrical Specifications

Frequency	698-960 MHz	1710-2500 MHz
Gain	9 dBi	10 dBi
Horizontal Beam Width	78°	75°
Vertical Beam Width	56°	45°
Front to Back Ratio	≥ 19 dB	
Polarization	Vertical	
Impedance	50 Ohm	
Max. Input Power	50 Watts	
VSWR	≤ 1.6:1	

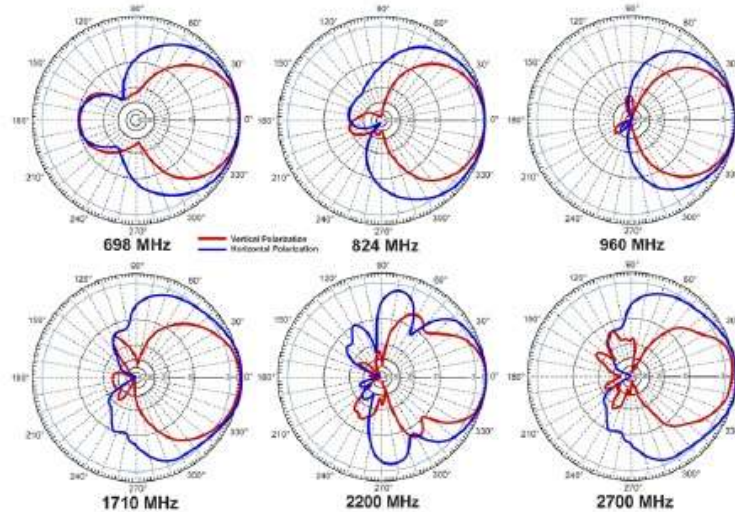
Mechanical Specifications

Weight	2.01 lbs. (0.91 kg)
Dimensions L x H x W	11.6 x 8.1 x 2.4 in. (295 x 207 x 60 mm)
Radome Material	UV-Stable White ABS
Operating Temperature	-40° C to 85° C (-40° F to 185° F)
Mounting	1.5 in. (40 mm) to 1.9 in. (50 mm) dia. masts
RoHS Compliant	Yes

Wind Loading Data

Wind Speed (MPH)	Loading
100	23.5 lb.
125	36.2 lb.

Antenna Gain Patterns



Power Dividers**0.8-2.5 GHz****Wireless Band Power
Combiners / Dividers**

- Wireless Communications PCS and Cellular Coverage
- Broadband – 0.8 to 2.5 GHz
- Complete Series – 2-Way thru 16-Way Models
- Sealed Versions Available
- High Isolation ≥ 20 dB,
Typical ≥ 26 dB Isolation
- Excellent Phase and Amplitude Balance

Specifications**Type N (F), 0.8 to 2.5 GHz, 30 W**

FREQUENCY RANGE (GHz)	MODEL	CONNECTORS	BAND SEGMENTS (GHz)	VSWR (max.)		INSERTION LOSS (dB max.)	ISOLATION (dB min.)	AMPLITUDE BALANCE (dB max.)	PHASE BALANCE (max.)	AVERAGE POWER* (W max.)			WEIGHT	
				INPUT	OUTPUT					A	B	C	oz.	gr.
0.8-2.5	3372A-2	TYPE N (F)	0.8-1	1.40	1.40	0.3	22	0.2	3°	30	5	0.5	7.8	220
			1-2.5	1.40	1.40	0.6	22	0.2	3°	30	5	0.5		
0.8-2.5	3372A-3	TYPE N (F)	0.8-2.5	1.60	1.50	0.8	15	0.5	8°	30	5	0.5	20.1	570
0.8-2.5	3372A-4	TYPE N (F)	0.8-2.5	1.40	1.35	0.8	22	0.3	6°	30	5	0.5	22.9	650
0.8-2.5	3372A-6	TYPE N (F)	0.8-1	1.70	1.50	0.8	18	0.5	8°	30	5	0.5	60	1700
			1-2.5	1.80	1.60	1.0	18	0.7	10°	30	5	0.5		

* Average Power Rating Into a load VSWR of (A) 1.2 to 1, (B) 2 to 1 and (C) ∞ VSWR

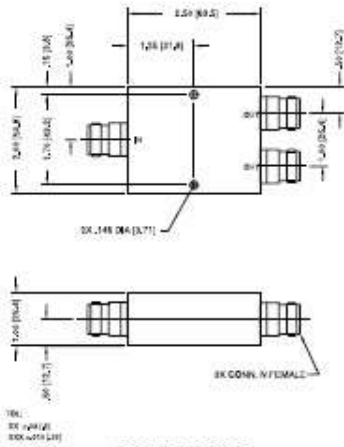
SMA (F), 0.8 to 2.5 GHz, 30 W

FREQUENCY RANGE (GHz)	MODEL	CONNECTORS	BAND SEGMENTS (GHz)	VSWR (max.)		INSERTION LOSS (dB max.)	ISOLATION (dB min.)	AMPLITUDE BALANCE (dB max.)	PHASE BALANCE (max.)	AVERAGE POWER* (W max.)			WEIGHT	
				INPUT	OUTPUT					A	B	C	oz.	gr.
0.8-2.5	4372-2	SMA (F)	0.8-1	1.35	1.30	0.3	25	0.2	3°	30	5	0.5	3.5	100
			1-2.5	1.35	1.30	0.5	25	0.2	3°	30	5	0.5		
0.8-2.5	4372A-3	SMA (F)	0.8-2.5	1.60	1.50	0.8	15	0.5	8°	30	5	0.5	6	170
0.8-2.5	4372A-4	SMA (F)	0.8-2.5	1.40	1.35	0.8	22	0.3	6°	30	5	0.5	8.8	250
0.8-2.5	4372A-6	SMA (F)	0.8-1	1.70	1.50	0.8	18	0.5	8°	30	5	0.5	17	482
			1-2.5	1.80	1.60	1.0	18	0.7	10°	30	5	0.5		
1.9-2.5	4162-8	SMA (F)	1.9-2.5	1.50	1.40	1.1	22	0.5	6°	30	5	0.5	17.6	500
1.9-2.5	4162-16	SMA (F)	1.9-2.5	1.60	1.40	1.2	19	0.8	10°	30	5	0.5	19.4	550
0.8-1	4152-8	SMA (F)	0.8-1	1.30	1.30	0.8	20	0.4	6°	30	5	0.5	22.9	650
0.8-1	4152-16	SMA (F)	0.8-1	1.30	1.30	1.5	20	0.6	10°	30	5	0.5	30	850

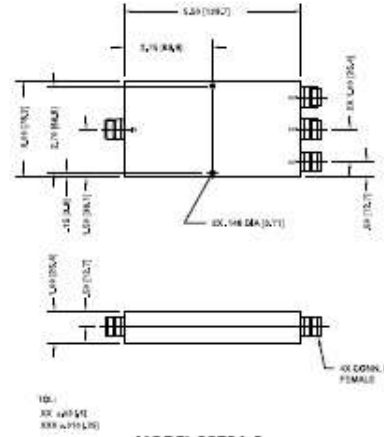
* Average Power Rating Into a load VSWR of (A) 1.2 to 1, (B) 2 to 1 and (C) ∞ VSWR

Power Dividers

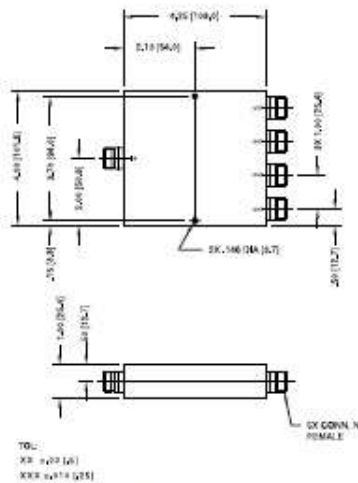
Outline Drawings



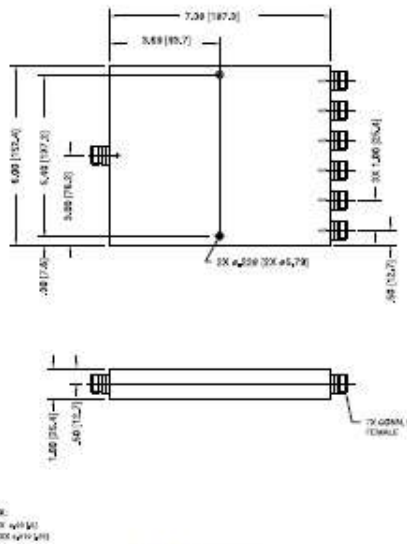
MODEL 3372A-2



MODEL 3372A-3



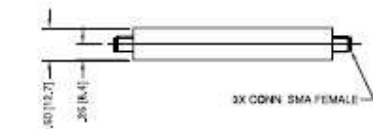
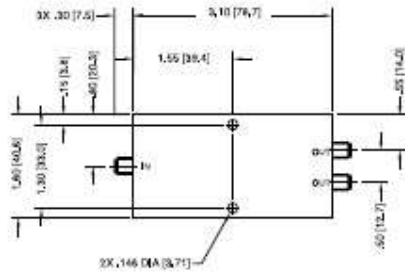
MODEL 3372A-4



MODEL 3372A-6

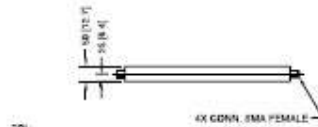
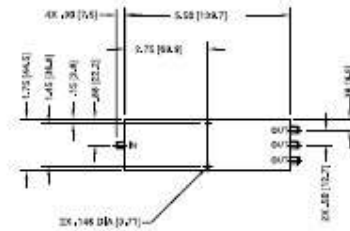
Dimensions in inches (mm in parentheses), unless otherwise specified.
Connectors mate without interference per MIL-STD-348.

Outline Drawings



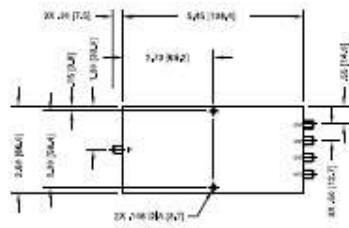
TOL:
XX ±.02 (.5)
XXX ±.015 (.38)

MODEL 4372-2



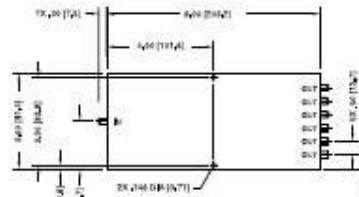
TOL:
X ±.02 (.5)
XXX ±.015 (.38)

MODEL 4372A-3



TOL:
XX ±.02 (.5)
XXX ±.015 (.38)

MODEL 4372A-4



TOL:
XX ±.02 (.5)
XXX ±.015 (.38)

MODEL 4372A-6

Dimensions in inches (mm in parentheses), unless otherwise specified.
Connectors mate without interference per MIL-STD-348.

PRORXD-1RU

Professional Dual Channel Receiver and Decoder

Overview:

The excellent RF performance is complemented by an extremely flexible decoding platform, with low-delay SD and HD MPEG2 and H.264 decoding ensuring compatibility with all Domo Broadcast and most third party encoders. An optional second decoder can be enabled, allowing two SD or HD signals to be decoded. Multiple output formats are offered with composite and SDI outputs in SD and HD-SDI including embedded audio. ASI transport stream in/out is available and HDMI outputs are provided for use with domestic TVs. A comprehensive graphical on screen display (OSD) is available for monitoring and diagnostics, which can be enabled or disabled separately on the two video outputs.



Product information:

Product Includes

CA0512	External XLR audio cable
CA0579	HD/X external XLR audio cable
CA0649*	External 12V 6.57A 80W desktop PSU

* Requires AC cable

Accessory Options (sold separately)

AP000481	UK power cable for CA0649
AP001483	US power cable for CA0649
AP004634	EU power cable for CA0649
AP007192	AU power cable for CA0649
PRORXDSRFP-1RU	Single rack front panel extender 1RU
PRORXCPLKT-1RU	PRORXD-1RU coupling kit
PRORXD-DEC2	Enable second HD decoder (license)
PRORXD-UP	Two way diversity upgrade (license)
RX-PACDN-UP	ASI packet diversity (license)
DCB/DCBGS	Downconverters - various bands available
Antennas	Various frequencies available
CABRF1/3/10	TNC/TNC 50Ω RF cable, 1, 3 or 10m lengths
BNC/BNC/5/10	BNC/BNC 75Ω ultra flexible cable, 5 or 10m lengths

Related Documents

100167	PRORXD Broadcast Receiver User Guide
100223	PRORXD-1U-Quick-Start-Guide

Features and Benefits:

- Single 4-way or dual 2-way diversity COFDM receiver – maximal ratio combining across all RF inputs for maximum sensitivity and flexibility
- Dual SD/HD MPEG-2 and MPEG-4 4:2:2 decoding capability
- Composite SD/HD-SDI, HDMI outputs plus ASI in/out IP streaming out
- B&B and tri-level genlock supported
- News gathering/SNG vehicles
- Events coverage
- Video assist

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August 2019

DTC

PRORXD-1RU

Professional Dual Channel Receiver and Decoder

Technical Specification:

Inputs	
Power	XL94 (m)
RF	BNC (50-850MHz) x 4
ASI In	BNC
FB	5-way Lemo
Deblock	BNC
RS232 Control	9-way D-type on optional breakout cable

Output	
Switchable CBVS/SDVHD/SDVASI	BNC x 2
HDMI	HDMI type A x 2
ASI Out	BNC
Audio	5-way DB Lemo x 2
RS232 Data	9-way D-type on optional breakout cable x 2

Video (dual decoding option)	
Resolutions (SD)	PAU/NTSC
Resolutions (HD)	720p50, 720p59, 720p60, 1080i50, 1080i59, 1080i60, 1080p23, 1080p24, 1080p25, 1080p29, 1080p30, 1080p50, 1080p54, 1080p60, 1080p75, 1080p74, 1080p75, 1080p75, 1080p75, 1080p75
Supported video codecs	H.264 SD/HD 4:2:0/4:2:2 MPEG-2 SD/HD 4:2:0/4:2:2 MPEG-4 Part 2 ASP (DTC proprietary)
Delay	From 15ms end-to-end (mode dependant)

Audio	
Switchable output	One stereo pair of balanced analogue audio or two balanced AES/EBU (four channels) per decoder
Analogue output	Stereo +18dBm (on 600 ohm)
AES/EBU	Balanced (110 ohm)
Sample rate	48kHz
Format	MPEG audio layer 1 or 2 64kbps to 384kbps

Ethernet	
Mode	10/100 Ethernet ports x 2
Function	Remote control via web-browser UDP/RTP/TS streaming over IP

ASI	
Mode	Byte or burst mode

Data Interfaces	
RS232 data output	1K2 to 115K2 baud switchable
Features	GPS data extraction

Control	
Remote control	Network web browser control interface
Local control	Front panel display with navigation keys
On screen display	Spectrum, RX SNR, RX power

Physical	
Dimension	220mm (W), 320 mm (D), 44mm (H)
Weight	2.1kg

Power	
DC input	9 to 26V reverse polarity protected
Power consumption	27-49W (downconverter dependant)

Environment	
Temperature range	-20°C to +60°C

Software License Code	
Silver (included)	DVB-T, Video Decoder, SD Only (MPEG-2, H.264-SD), Ultra Mobile Video Link (UMVL)
Gold	Silver plus Narrowband 2.5MHz & 1.25MHz (H.264-HD & MPEG-4 ASP), Second Decoder, IP Streaming, IP Decoding
Platinum	Gold plus Narrowband 6.25kHz, 4:2:2

Export of encrypted products is subject to United Kingdom regulatory export controls.

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SOL7MRRPTR

SOL07 Miniature Robust Repeater

Overview:

The SOL07 Robust Repeater unit from Domo Tactical Communications is an integrated single box COFDM repeater which can operate in a variety of transmission bandwidths allowing the user to trade off image quality against range, to suit all types of missions.

The SOL07 Robust Repeater has DTC technology at its core and is ideal for extending the range of wireless video links in harsh external environments, including mobile and urban. The incoming signal is re-transmitted without decoding and hence without the need for an encryption key at the repeater.

Supplied in a sealed IP67 rated aluminium enclosure, the SOL07 Robust Repeater can achieve LOS range extensions of tens of miles and NLOS range extensions of greater than one mile thanks to its integral 2W RF power amplifier.



Features and Benefits:

- Single box COFDM repeater
- Environmentally sealed to IP67
- Retransmits both HD and SD video
- No need for storage of encryption keys - video is retransmitted without decoding
- Proprietary Narrowband COFDM modes down to 625KHz for extreme range performance
- Industry standard DVB-T modulation for interoperability with existing systems
- Integrated 2W RF amplifier
- Simple "fit and forget" deployment
- Internal cavity RF filters

Product Information:

Product Includes

AP010331	Ethernet RJ45 to RJ45 cable
CA3146	Power 6-way Amphenol to banana plugs cable
SM581	USB support stick

Accessory Options (sold separately)

AP010310	2dBi omni half wave dipole, 1.98-2.7GHz, gooseneck TNC(m)
AP002164	Right-angle TNC (m-f) adaptor
SOL7HDMRTX	SOL07 HD Miniature Robust Transmitter

Related Documents

Resource ID 100311	SOL07 Miniature Robust Repeater User Guide
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SOL7MRRPTR SOL07 Miniature Robust Repeater

Technical Specification:

IO	
Power	6-way Amphenol
RF transmit	TNC 50C (f)
RF receive	TNC 50C (f) x 2
Control and programming	RJ45 Ethernet

RF	
Power	2W (adjustable)
Tuning step	250kHz

* Frequency	
198270	1.98-2.70GHz Transmit - 1.98-2.26GHz Receive - 2.42-2.70GHz

* Other frequencies available on request

DVB-T Modulation	
Bandwidth	8MHz, 7MHz and 6MHz modes
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK, 16QAM, 64QAM
Guard interval	1/4, 1/8, 1/16, 1/32
Bitrates	3.732Mbps to 31.668Mbps

Narrow band/UMVL Modulation	
NB bandwidth	2.5MHz, 1.25MHz and 625kHz modes
UMVL bandwidth	8MHz, 7MHz and 6MHz modes
FEC	1/3, 2/3
Constellation	QPSK, 16QAM, BPSK, 8PSK
Guard interval	1/8, 1/16
NB bitrates	144kbps to 4.879Mbps
UMVL bitrates	1.317kbps to 14.869Mbps

Power	
DC input	10-16V (12V nominal)
Power consumption	42W max.

Physical	
Dimension	175mm (L), 225mm (W), 70mm (H)
Weight	2.86kg approx.

Environment	
Temperature range	-20°C to +50°C
Sealing	IP67 with mated connectors

Software License Code	
Silver (included)	DVB-T, Ultra Mobile Video Link (UMVL)
Gold	Silver plus Narrowband 1.25MHz and 2.5MHz
Platinum	Gold plus Ultra Extreme Narrowband 625kHz

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SOL7HDMRTX

SOLO7 Miniature Robust HD Transmitter

Overview:

The SOLO7 Robust HD Transmitter unit from Domo Tactical Communications is a feature-rich COFDM digital video transmitter, which can operate in a variety of transmission bandwidths allowing the user to trade off image quality against range, to suit all types of missions. Excellent range, performance and spectral efficiency are offered when operating in the unique 2.5MHz, 1.25MHz and 625kHz narrow bandwidth modes.

The SOLO7 Robust Transmitter has DTC technology at its core and is ideal for establishing prolonged rugged wireless video links in harsh external environments, including mobile and urban. Security is ensured with our built-in 32-bit ABS encryption or, for greater security, AES128/256 bit encryption is also available subject to export control.

Supplied in a sealed IP67 rated aluminium enclosure, the SOLO7 Robust Transmitter can achieve LOS ranges of tens of miles and NLOS range of greater than one mile thanks to its integral 2W RF power amplifier.



Features and Benefits:

- Environmentally sealed to IP67
- Integrated HD and SD H.264 video encoding
- HD-SDI and analogue composite video inputs
- Proprietary narrowband COFDM modes down to 625KHz for extreme range performance
- Industry standard DVB-T modulation for interoperability with existing systems
- Integrated 2W RF amplifier
- Simple "fit and forget" deployment

Product Information:

Product Includes

CA3146	Power cable, 6-way Amphenol to banana plugs
CA3891	Config cable, 13-way Amphenol to 9-way D-sub
SA4580	USB support stick

Accessory Options (sold separately)

AP010310	Omni antenna 1.98-2.7 MHz 2dBI gooseneck TNC (m)
AP002164	Right-angle TNC (m-f) adaptor
SOL7MRRPTR	SOLO7 Miniature Robust Receiver

Related Documents

Resource ID 100310	SOLO7 HD Miniature Robust Transmitter User Guide
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SOL7HDMRTX

SOLO7 Miniature Robust HD Transmitter

Technical Specification:

IO

Power	6-way Amphenol
HD-SDI video	BNC 75Ω (f)
Composite analogue video	BNC 75Ω (f)
Control and programming	13-way Amphenol
RF transmit	TNC 50Ω (f)

RF

Power	2W (adjustable)
Tuning step	250kHz

* Frequency

198270	1.98-2.70GHz
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* Other frequencies available on request.

DVB-T Modulation

Bandwidth	8MHz, 7MHz and 6MHz modes
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK, 16QAM, 64QAM
Guard Interval	1/4, 1/8, 1/16, 1/32
Bitrates	3.792Mbps to 31.668Mbps

Narrowband/UMVL Modulation

NB bandwidth	2.5MHz, 1.25MHz and 625kHz modes
UMVL bandwidth	8MHz, 7MHz and 6MHz modes
FEC	1/3, 2/3
Constellation	QPSK, 16QAM, BPSK, 8PSK
Guard Interval	1/8, 1/16
NB bitrates	144kbps to 4.879Mbps
UMVL bitrates	1.317kbps to 14.809Mbps

Video

SD input format	PAL, NTSC (with or without pedestal) 720x576i 50Hz 720x480i 59Hz
HD input format	1920x1080i 60/59.94/50Hz 1920x1080p 30/29.97/25/24/23.97Hz 1920x1080psf 30/29.97/25/24/23.97Hz 1280x720p 60/59.94/50Hz
3G input format	*1920x1080p 60/59.94/50Hz (via 3G-SDI level A or B dual link)
H.264 compression	AVC/H.264/MPEG-4 Part 10 High profile level 4.0 4:2:0 or 4:2:2 (optional)
ASP compression	ASP/MPEG-4 Part 2 with NB modulation and SD only
Coding options	Horizontal scaling of 3/4, 2/3, 1/2, 1/4 Vertical scaling of 1/2, 1/4 Sub-frame rate of 1/2, 1/4, 1/8, 1/24
Encoder delay	1s to 10ms (mode dependent)
Encoder bitrates	0.25Mbps to 32Mbps

* 3G-SDI support subject to maximum encoder resolution limitations in initial software release of 960x1080p60/59.94 or 1280x1080p50

Other

Remote control	RS-232 control from PC GUI application or other device
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Encryption

Standard	ABS 32-bit
Licensed	AES 128/256-bit (subject to export control)



SOL7HDMRTX

SOLO7 Miniature Robust HD Transmitter

Technical Specification (cont.):

Power

DC Input	10-16V (12V nominal)
Power consumption	27W max.

Physical

Dimension	120mm (L), 200mm (W), 35mm (H)
Weight	1.1kg approx.

Environment

Temperature range	-20°C to +50°C
Sealing	IP67 with mated connectors

Software License Code

Silver (included)	DVB-T, Ultra Mobile Video Link (UMVL), MPEG-4 H.264
Gold	Silver plus MPEG-4 ASP, Narrowband 1.25MHz and 2.5MHz, SDI Ancillary Data
Platinum	Gold plus Ultra Extreme Narrowband 625kHz
AES128TX	AES 128-Bit Encryption
AES256TX	AES 256-Bit and AES 128-Bit Encryption

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