



An optional add-on unit for SOLiD ALLIANCE and EXPRESS DAS systems.

Connects to DAS remote units to support additional bands, like VHF/UHF services.

Flexible mounting options. Rugged construction meets the latest fire codes and requirements for harsh environmental conditions.

- NFPA 72 Compliant / NEMA 4 Certified, UL Labeled
- Quality Checked and Fully Bench Tested
- Easy Installation, Rapid Commissioning and Simplified Management
- Rack or Wall Mounting, Indoors or Outdoors
- Convection Cooling – No Mechanical Fans

Operation

The Add-On Remote is an optional unit for ALLIANCE multi-carrier and EXPRESS single-carrier DAS deployments for supporting additional RF bands using one additional single or dual band amplifier (RDU). The AOR chassis is connected externally to the main remote with RF jumpers.

For the EXPRESS DAS, the AOR connects to the Main Remote Unit (MRU) and is used exclusively for VHF+UHF bands. For the ALLIANCE DAS, the AOR can be connected to the 1W LROU, 2W L2ROU or 5W MROU.

For the 1W LROU, the AOR can support: VHF+UHF, 700LTE SISO, 700LTE MIMO, 2300MHz (using the 2W L2RDU_2300_WCS module) or 2500MHz TDD.

For the 2W L2ROU: VHF+UHF, 2300MHz or 2500MHz TDD.

For the 5W MROU: only VHF+UHF.

For the downlink signal path, the AOR receives RF signals directly from the main remote. The signals move to the Remote Drive Unit (RDU) where they are amplified and filtered to remove out-of-band signals. The amplified RF signals from the AOR are fed back to the multiplexer of the main remote which combines all the RF signals and delivers them to the antenna port. The process is reversed for the uplink path.

The AOR also includes 2 SMA connectors for Tx and Rx paths in deployments where separate antennae are required from the AOR chassis (typically for VHF and/or UHF support). If a duplexed output is needed, an external duplexer (not provided by SOLiD) is required to combine the simplex ports out of the AOR.

VHF/UHF RDUs

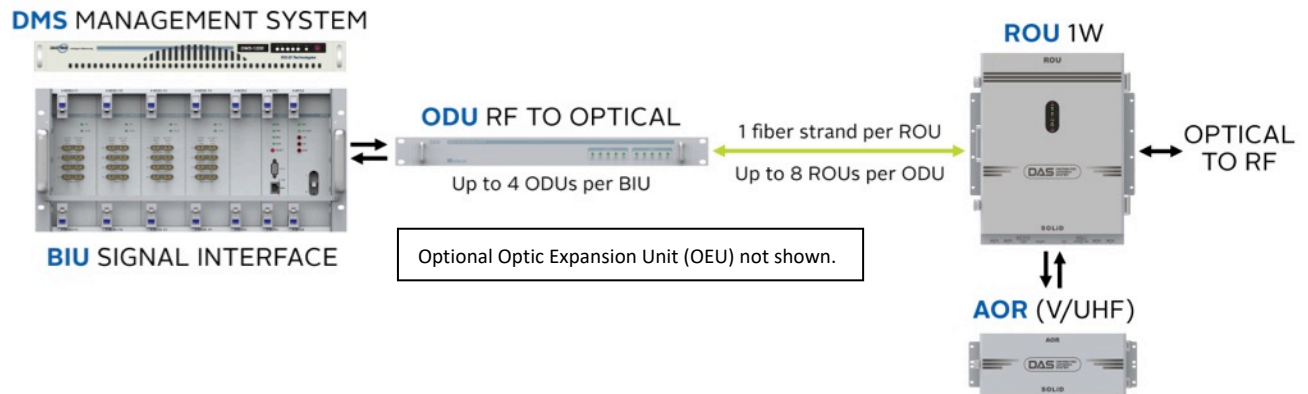
SOLiD currently supports two versions of the VHF/UHF RDU. Both versions offer the VHF band and two options for the UHF band. The tech can select the desired UHF band using the DMS-1200. Only one of the UHF bands on each RDU can be active at a time.

RDU_150_450: In addition to the VHF band, this module offers the 396-450 MHz and 450-512 MHz UHF bands. Only one of the UHF bands can be active at a time.

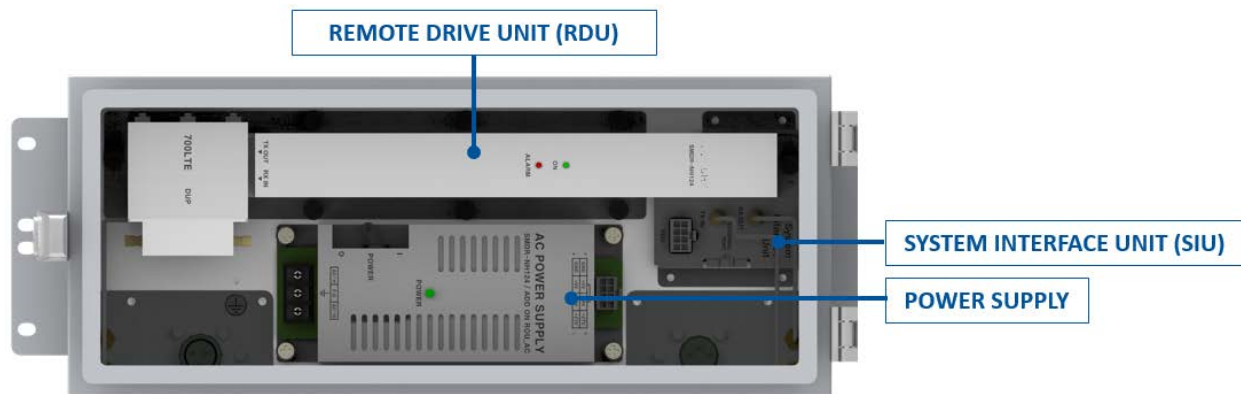
RDU_E_VHF_UHF: In addition to the VHF band, this module offers an “Extended” 380-434 MHz band, which covers standard federal agency services operating in 380-430 MHz, and the 450-512 MHz UHF band. Only one of the UHF bands can be active at a time.

Some DAS deployments may require support for multiple UHF services, for example, operating 396-450 MHz and 450-512 MHz in the same system. This is possible with the 1W LROU remote. Two VHF/UHF RDUs can be installed in the 1W LROU or one can be installed in the LROU and one in the add-on unit (AOR) that connects to the LROU. Each RDU can have a different UHF band activated. External filtering may be required.

Topology



AOR Components



Unit Name	Description
Add-On Remote Unit (AOR)	AOR enclosure with power supply (AC or DC)
1. Remote Drive Unit (RDU)	Filters and amplifies downlink and uplink signals; Remove other signals through Band Pass Filtering. (Note: BPF is not included with VHF+UHF module. External BPF should be connected before the antenna.)
2. System Interface Unit (SIU)	Interface with main remote unit (1W LROU, 2WL2ROU or 5W MROU) Distribute RF signals
3. Power Supply (RPSU)	Included with Cabinet (Specify AC or DC when ordering.) AC Unit: Input AC is 120V, Output DC: +6V, +9V and +27VDC DC Unit: Input DC is -48V (-42 ~ -56V), Output DC: +6V, +9V and +27VDC Circuit breaker for power on/off

Specifications

Band Parameters				
Frequency Band	Downlink (Tx)		Uplink (Rx)	
	Frequency (MHz)	Bandwidth (MHz)	Frequency (MHz)	Bandwidth (MHz)
700LTE	729-756	27	699-716 / 777-787	17 / 10
2300 WCS	2350-2360	10	2305-2315	10
2500TDD LTE	2496.8-2690	Lower Band: 71.2 Middle Band: 37.8 Upper Band: 71.2	2496.8-2690	Lower Band: 71.2 Middle Band: 37.8 Upper Band: 71.2
VHF	136-174	38	136-174	38
UHF	B1: 380-434 B2: 396-450 B3: 450-512	54 54 62	B1: 380-434 B2: 396-450 B3: 450-512	54 54 62

NOTES: For 2500 services and UHF, operator can select band using management software.

RF Parameters							
Supported Services		700LTE Full Band	2300 WCS	2500 TDD	VHF / UHF (BIU Only)		
Input Power at BIU/eBIU	Tx (BIU)	-20dBm to +10dBm				-15 to +10dBm	
	Tx (eBIU)	+15dBm to +43dBm (HPOI) / -10dBm to +20dBm (LPOI)				NA	
	Rx	≤ -50dBm max				≤ -54dBm	
Output Power	Tx	23dBm	33dBm	30dBm	24dBm	24dBm	
	Rx (BIU)	0dBm		-20dBm	-4dBm		
	Rx (eBIU)	-3dBm		-23dBm	NA		
System Gain	Tx (dB)	43dB	53dB	50dB	44dB		
	Rx (dB)	30 to 50dB		10 to 30dB	34 to 50dB		
Gain Control		Gain Control Range: For the remote unit TX: 30 dB/step 0.5dB					
System Delay	Tx	< 1.5μs	< 1μs	< 0.5 μs	< 2μs		
	Rx	< 1μs	< 4μs	< 1.5 μs	< 2μs		
EVM (Tx %)		5%	2%		NA		
Noise Figure (UL)		15dB Max	6dB Max	10dB Max	7dB Max		
VSWR		1.8 max at each band In / Out ports					
Spurious		Spurious Emissions: Tx: ≤ -13dBm @ 9kHz to 5GHz					
Nominal Impedance		50 ohm					

NOTES:
 TX Input power refers to the DAS headend.
 TX Output power is measured at the antenna port.
 TX Output power for VHF/UHF module is 24dBm per band.
 TX and RX Output power is ± 0.5dB
 Noise figure represents system noise with one remote connected.
 Add 2dB to Noise figure when using Optic Expansion Unit (OEU) or 1-port Donor Optic Modules (DOUs).
 System delay excludes fiber optic delay.
 Additional gain control available at head end including uplink gain control.
 TX system gain for VHF/UHF is 39dB when input power is -15dBm.
 eBIU does not support VHF/UHF at this time.

Item	Specification
Connectors	2 SMA female connectors for connection to main remote unit. 2 SMA female connectors for RF output
AC Power	Normal Range: 120VAC 50/60Hz Operating range: 108~132VAC, 50/60Hz
DC Power	Normal: -48 VDC. Operating range: -42 to -56V DC
Dimensions	19" W x 7" H x 10.2" D (482.6 x 177 x 258mm) Dimensions include wall mount bracket.
Operating Temperature	14 to 122°F (-10 to +50°C)
Operating Humidity	5% to 90% Non-condensing
Weight	24.25 lbs (11 kg) Fully Loaded
Power consumption	Maximum 93W with VHF/UHF RDU (both bands active) Power consumption will depend on installed amplifier

Standards and Certifications

NFPA 72 Code Compliant	National Fire Alarm Code.
NEMA 4	Meets NEMA 4 enclosure standards to withstand rain, sleet, snow, dust, dirt, splashing water, and hose-directed water.
UL (North America)	UL 60950-1, 2nd Edition CSA C22.2 No. 60950-1-07, 2nd Edition, CSA C22.2 No. 60950-1-03, 1st Edition
FCC (North America)	FCC Part24 Subpart D and Part90 Subpart I FCC Part22 Subpart H and Part 27 Subpart C FCC Part24 Subpart E and Part 27 Subpart C
IC (Canada)	RSS-131 (ISSUE 2), ICES-003
Emissions (North America)	FCC Part15 Subpart B, Class A. VHF: F1D, F3E UHF: F1D, F1E, F3E
MTBF (Telcordia SR-332 Issue 2)	Failure Rate = 11,823 MTBF = 9.65 Years

Part Numbers

Add-on cabinet for ROU - AC Power	ROU_Add-On_AC
Add-on cabinet for ROU - DC Power	ROU_Add-On_DC
150MHz VHF & 450MHz UHF Amplifier Module (UHF Sub-band: B2, B3)*	RDU_150_450
380MHz VHF & UHF Amplifier Module (Military Band) (UHF Sub-band: B1, B3)*	RDU_E_VHF_UHF
700MHz LTE Full Band MIMO Amplifier Module (comes with cavity filter)	RDU_700LTE_M
700LTE Combiner Kit for AOR (required when using LTE module in add-on)	ROU_AOR_LTE
2-WATT 2300MHz Amplifier Module	L2RDU_2300_WCS
2500MHz TDD Amplifier module for 1W LROU and AOR	RDU_2500_60TDD
Add-on cabinet for ROU - AC Power *Red cabinet for Public Safety application	ROU_Add-On_AC_PS
Add-on cabinet for ROU - DC Power *Red cabinet for Public Safety application	ROU_Add-On_DC_PS



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