



ADRF UL 2524 Making Two Way Emergency Responder Communication Enhancement Systems User Guide

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**UL 2524 Making Two Way Emergency Responder Communication Enhancement Systems
User Guide**



Making Two-Way Emergency Responder Communication Enhancement Systems (ERCES) are Safer and More Reliable for First Responders



<https://markshub.ul.com/p/8c5a0d6d2a>
www.adrftech.com

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The New Public Safety Standard

Public safety in-building wireless communication systems are required in commercial buildings to ensure emergency responders have undisrupted connectivity anywhere on premises including critical coverage areas like fire command rooms, exit stairwells, elevator lobbies, basements, and exit passageways.

This guideline can help you understand what is UL 2524, why it is important, and how it is used.



Where Does UL 2524 Come From?



Underwriters
Laboratories Logo

As the global safety science leader, UL helps companies to demonstrate safety, enhance sustainability, strengthen security, deliver quality, manage risk and achieve regulatory compliance.

They are one of several companies approved to perform safety testing by the U.S. federal agency, and the Occupational Safety and Health Administration (OSHA). They put safety science to work to help create a safer, more secure, and sustainable world.

What is UL 2524 and What Does it Cover?

UL 2524 is a standard proposed by Underwriters Laboratories for In-building 2-Way Emergency Radio Communication Enhancement Systems (ERCES). It represents the most rigorous set of standards to ensure emergency responders can communicate with each other in and around commercial buildings. UL 2524 includes additional critical safety and performance requirements not found in UL 60950/UL 62368. These requirements were adopted to align with similar requirements that have been utilized for fire alarm systems and which the fire alarm industry has found beneficial.

It does not cover passive RF components which are defined in the standard as any RF device that does not have an active electronic component, and instead, requires external power. This includes antennas, splitters, couplers, coaxial cables, and connectors.

UL 2524 second edition covers products including repeater, transmitter, receiver, signal booster components, remote annunciators and operational consoles, power supply, and battery charging system components. These technologies are meant to be deployed in accordance with the following Model Building and Installation Codes: NFPA 1, NFPA 72, NFPA 101, NFPA 1221, and the International Fire Code (IFC).

The NFPA, and IFC



The National Fire Protection Association (NFPA) is a global self-funded nonprofit organization, established in 1896, devoted to eliminating death, injury, property, and economic loss due to fire, electrical and related hazards.



The International Code Council is the leading global source of model codes, standards, and building safety solutions that include product evaluation, accreditation, technology, training, and certification. The ICC's International Fire Codes (IFC) are used to ensure safe, portable, and sustainable communities and buildings worldwide.



Why is the UL 2524 Standard Important?

UL 2524 is becoming a common requirement for ERCES and building owners will follow the UL 2524 Standard in order to receive their certificate of occupancy as the standard will rapidly be enforced by the authority having jurisdiction (AHJ) across the country. In fact, NFPA 1225 section 18.12.1.3 and IFC 2021, section 510.4 of the national model fire code both require system components to be listed and labeled in accordance with UL 2524 Certified products.

UL 2524 listing will not only make it easier to select an ERCES that's compliant with AHJ-enforced codes, it will also make it easier for AHJs to enforce wireless product code testing and approval due to its UL 2524 certified mark and corresponding QR code.

UL Smart Mark™

Enhanced UL Listed/Certification Mark for UL 2524, Second Edition: Simply put, if an ERCES product has this marking then it is a UL Listed/Certified product by UL. AHJs can scan the QR code on the enhanced UL Smart Mark to receive complete details about the certification.





Misleading Phrases

All building owners will soon need to install a UL 2524 listed/certified product in new buildings. Unfortunately, there are many different terms thrown about when referencing UL 2524 and it's important to separate fact from fiction.

- **UL 2524 Classified**

Passed some of the UL standards (i.e. only the fire and shock safety standards of the UL 2524), which is performed by a third-party nationally recognized testing facility.

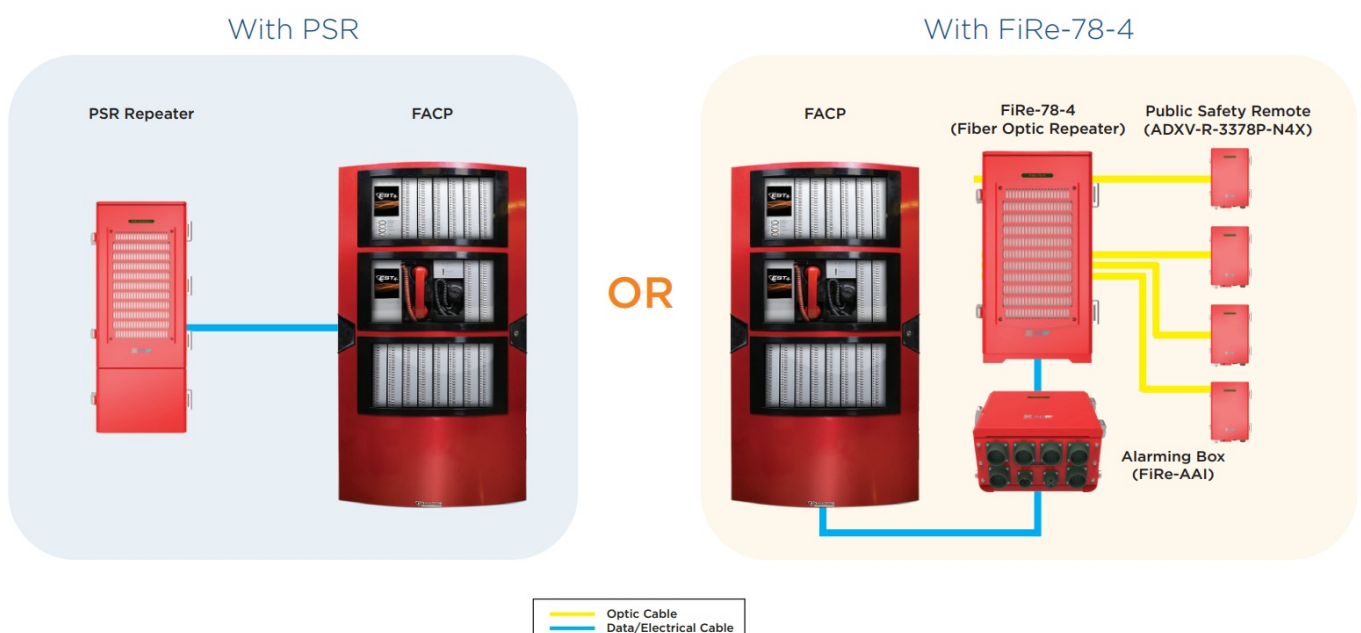
- **Conforms to UL 2524**

This does not indicate the passing of any testing. This will not meet AHJ requirements in most states and counties.

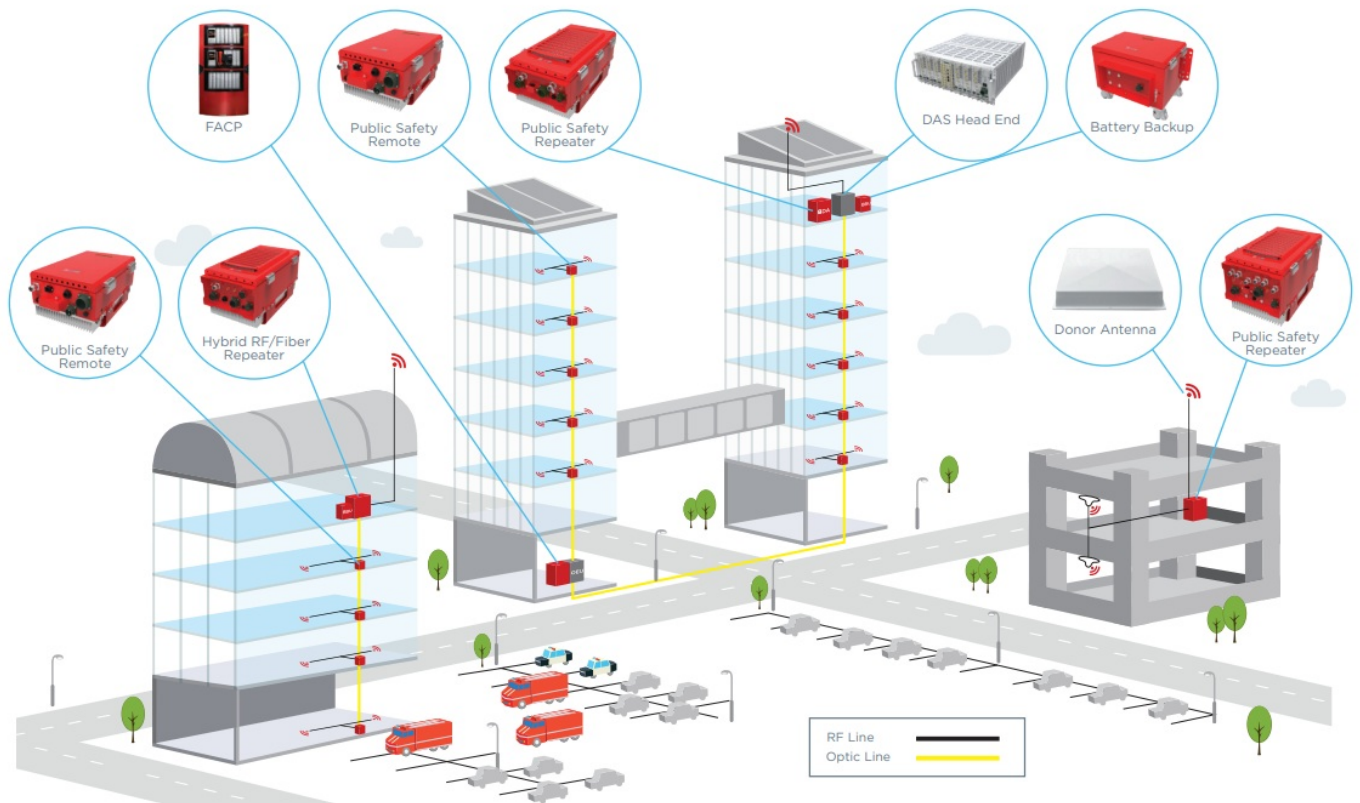
- **Compliant to/with UL 2524**

The product believes it adheres to the standards laid out in UL 2524 but has not officially passed the testing or received the mark. This will not meet AHJ requirements in most states and counties.

ADRF's ERCES Compatibility With FACP



Example of ERCES Deployment



ADRF PSR-U Series



NFPA / IFC Compliant and UL 2524, Second Edition, Listed/Certified

PSR-78-9533-U

- 2 Watt Channelized Digital PS Repeater for 700/800 MHz
- UL 2524 Certified/Listed Second Edition
- NFPA 72, NFPA 1221, IFC, and UL code-compliant solutions
- Alarming outputs to supervised circuits for Loss of Normal AC Power, Battery Charger Failure, Low Battery Capacity, Donor Antenna Malfunction/Disconnection, Active RF Emitting Device Malfunction, and System Component Malfunction
- Newly integrated wiring compartment with terminal blocks for easy installation
- Type 4 (UL50/UL50E) Enclosure
- 'Supports FCC Part 90 Class A narrowband and Class B wideband repeater designations
- Up to 95 dB of gain and up to 33 dBm downlink and 30 dBm uplink output power per band
- Supports both analog and digital systems



PSR-78-9537-U

- 5 Watt Channelized Digital PS Repeater for 700/800 MHz
- UL 2524 Certified/Listed Second Edition
- NFPA 72, NFPA 1221, IFC, and UL codes compliant solutions
- Alarming outputs to supervised circuits for Loss of Normal AC Power, Battery Charger Failure, Low Battery Capacity, Donor Antenna Malfunction/Disconnection, Active RF Emitting Device Malfunction, and System Component Malfunction
- Newly integrated wiring compartment with pre-drilled connector holes and terminal blocks for easy installation.
- NEMA 4 enclosure for both indoor and outdoor environments
- Supports FCC Part 90 Class A narrowband and Class B wideband repeater designations
- Up to 95 dB of gain and up to 37 dBm downlink and 30 dBm uplink output power per band
- Supports P25 Phase 1/Phase 2 analog and digital systems



PSR-VU-9537-U

- 5 Watt Channelized Digital PS Repeater for VHF/UHF
- UL 2524 Certified/Listed Second Edition
- NFPA 72, NFPA 1221, IFC, and UL codes compliant solutions
- Alarming outputs to supervised circuits for Loss of Normal AC Power, Battery Charger Failure, Low Battery Capacity, Donor Antenna Malfunction/Disconnection, Active RF Emitting Device Malfunction, and System Component Malfunction
- Newly integrated wiring compartment with pre-drilled connector holes and terminal blocks for easy installation.
- NEMA 4 enclosure for both indoor and outdoor environments
- Supports FCC Part 90 Class A narrowband and Class B wideband repeater designations

- Up to 95 dB of gain and up to 37 dBm downlink and 30 dBm uplink output power per band
- Supports P25 Phase 1/Phase 2 analog and digital systems
- Simplex for VHF/UHF



PSR-U-9537-U

- 5 Watt Channelized Digital PS Repeater for UHF
- UL 2524 Certified/Listed Second Edition
- NFPA 72, NFPA 1221, IFC, and UL codes compliant solutions
- Alarming outputs to supervised circuits for Loss of Normal AC Power, Battery Charger Failure, Low Battery Capacity, Donor Antenna Malfunction/Disconnection, Active RF Emitting Device Malfunction, and System Component Malfunction
- Newly integrated wiring compartment with pre-drilled connector holes and terminal blocks for easy installation.
- NEMA 4 enclosure for both indoor and outdoor environments
- Supports FCC Part 90 Class A narrowband and Class B wideband repeater designations
- Up to 95 dB of gain and up to 37 dBm downlink and 30 dBm uplink output power per band
- Supports P25 Phase 1/Phase 2 analog and digital systems
- Duplex for UHF only



ADRF-BBS-U

- UL 2524 Small battery back up unit
- UL 2524 Certified/Listed Second Edition

- Includes single cable between the battery and DAS/repeater
- NFPA and IFC compliant
- Increase runtime by adding unit using parallel cable ADRF-BBX-U-CBL-21P
- Increase voltage by adding unit using series cable (ADRF-BBX-U-CBL-21S)
- Available in 12V, 24V, and 48V solutions
- Optional wall mount kit available (ADRF-BBS-X-WMK)
- Newly integrated wiring compartment with terminal blocks for easy installation



ADRF-BBL-U





- UL 2524 Large battery back up unit
- UL 2524 Certified/Listed Second Edition
- Includes single cable between the battery and DAS/repeater
- NFPA and IFC compliant
- Increase runtime by adding unit using parallel cable ADRF-BBX-U-CBL-21P
- Increase voltage by adding unit using series cable (ADRF-BBX-U-CBL-21S)
- Available in 12V, 24V, and 48V solutions
- Optional wall mount kit available (ADRF-BBL-X-WMK)
- New integrated wiring compartment with terminal blocks for easy installation





CREATES CONNECTIONS

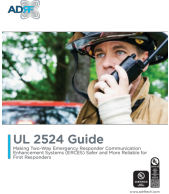
ADRF has been connecting people and their devices since 1999. Headquartered in the Greater Los Angeles area but with sales and engineering teams located nationwide, ADRF's people are always ready to serve our customers to ensure a superior ownership experience. With an installed base of more than 100,000 network elements, we are the #1 DAS and repeater vendor to all leading U.S. wireless service providers.

 <p>BEST IN CLASS MODULARITY flexible and scalable platform enables future-proof system</p>	 <p>100,000+ NETWORK ELEMENTS all throughout the U.S., Canada, and CAL A</p>
 <p>24/7 TECHNICAL SUPPORT proves our commitment to service and support</p>	 <p>SHORT LEAD TIME allows the fastest delivery</p>



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Documents / Resources

	<p>ADRF UL 2524 Making Two Way Emergency Responder Communication Enhancement Systems [pdf] User Guide</p> <p>UL 2524, Making Two Way Emergency Responder Communication Enhancement Systems, UL 2524 Making Two Way Emergency Responder Communication Enhancement Systems, Two Way Emergency Responder Communication Enhancement Systems, Emergency Responder Communication Enhancement Systems, Responder Communication Enhancement Systems, Communication Enhancement Systems, Enhancement Systems</p>
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References

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