

Los Angeles County Fire Code Requirements

DAS / BDA Coverage Criteria

1. In building radio coverage criteria is covered under LA County Fire Code (510.1).
2. To determine if a BDA/DAS system is required a minimum field test is required. All measurement must be taken at the build site prior to any construction. A 0dBm Gain isotropic Omni antenna will be used for signal measurements. Subtract the below construction ratings from the field measurement taken. If the total is less the required in-building RF level of -100dBm (Reference 510.1) than a DAS/BDA system is not required.
 - a. Residential -6dBm
 - b. Light Industry -14dBm
 - c. Dense Commercial -19dBm
 - d. Dense Urban -29dBm
 - e. Underground parking structures -29dBm
 - f. Metal film "low E" windows -30dBm
3. All measurement are subject to inspection and must be submitted to the county for approval and verification.
4. The donor site will be determined by the vendor during the initial field measurements. A yagi antenna will be used to determine which direction the highest RF signal is coming from. The Vendor will record the compass direction in degrees, and use it as a reference location to the donor site. All measurements RF levels and compass directions will be recorded and submitted to the County with the approval criteria. All field tests will be coordinated with LACoFD Command and Control to ensure that day to day operations is not affected.
5. All System design documents must be submitted to the county for approvals. The above test criteria must be included in the design documentation.

DAS / BDA Frequencies

6. **UHF T-Band (Analog Simulcast Radio Channels)**
 - a. County wide (Wideband radio channels)
 - i. LAC Blue 4, Downlink 470.5125 / Uplink 473.5125MHz
 - ii. LASD SCC, Downlink 483.5625 / Uplink 486.5625MHz
 - iii. Both of these channels are wideband 25KHz bandwidth
 - b. Adjacent channel rejection is required.
 - i. All adjacent radio channels must be rejected and not pass through the system.
 - ii. The following channels will be tested to verify channel rejection.
 1. LAC Blue 7, Downlink 470.4625 / Uplink 473.4625MHz
 2. LAC Blue 12, Downlink 470.4875 / Uplink 473.4875MHz
 3. LAC Blue 8, Downlink 470.5375 / Uplink 473.5375MHz

4. LASD SUD, Downlink 483.5375 / Uplink 486.5375MHz
5. Mutual Aid 1, Downlink 483.5875 / Uplink 486.5875MHz

System Acceptance Test Plan

-A common system acceptance test plan will be submitted by the vendor that complies with the National Fire Code standards and the LA County Fire Code (510.5.3), which will insure that the system works as intended and doesn't interfere with other systems.

-A common DAQ test plan ("Can you hear me now") will also be conducted by the Fire Marshall using the same test criteria. A DAQ of 3.0 performance rating is required in each test grid.

-A test radio must transmit within 15' of the DAS / BDA donor antenna to test / ensure that the system does not lock up. A hand held radio (5W) will be used if the donor antenna is on a roof (25' or higher) and a mobile radio (40W) will be used if the donor antenna is at street level.

-All test data will be submitted to LACoFD and stored on a common shared data file. All testing is subject to county testing and verification.

Site information

-A DAQ test will be conducted by a third part and the Fire Marshal as a part of the build inspection.

-All test results will be sent to the County for documentation and records.

Additional DAS / BDA Requirements

-All Systems will be registered with LACoFD with the following information: system ID, location, channel information, and POC to be stored on a common share database.

-All systems will send an "Alarm email" to a common Public Safety email address for all alarms. Alarm information will identify, in plain English, the system ID, location address, alarm info and point of contact with a telephone number of the responsible party.

Alarm email is: Fire-LACoFDInBuildingAlarms@fire.lacounty.gov

Facility Requirements

-All facilities will have a sign posted at the entrance of the building and the enunciation panel, in the building, clearly identifying that the building has a DAS/BDA system.

- All individual antenna cable runs must have a survivability rating of 1 hour.

-All distribution antenna cable runs with two or more antenna must have a survivability rating of 2 hours.

-The BDA/DAS systems will be housed in a NEMA 4 rated cabinet.

-The BDA/DAS system will support emergency power to the BDA/DAS system for a minimum of 24 hours should the building power fail. A battery system is required to run the BDA/DAS system for 1 hour independent of any generator system. If a generator system is not present to supplement the power, then the battery system shall support 24 hours of continuous duty to run the BDA/DAS system.