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October 27, 2020

Mr. Gavin Leaver  
Environmental Assessment Specialists, Inc.  
Mission Hills, CA 91345

**Subject: AT&T CSL04566 - NSB – Noise Evaluation – Ojai, CA**

Dear Mr. Leaver:

MD Acoustics, LLC (MD) has completed a noise assessment for the AT&T CSL04566 – NSB project located at 202 W. Ojai Ave, in Ojai CA. The site plan utilized for the project is located in Exhibit A (page 3 of this report). The project and plans were reviewed from a noise standpoint.

Sheet T-1 from the plans provide the project summary and is as follows: Install (P) FRP screen wall (color and texture to match existing), install 2 (P) Emerson power cabinets, install 4 (P) Purcell cabinets, install (1) ciena cabinet, install (P) utility cabinets, install 1 (P) GPS antenna, install 9 (P) 6' panel antennas (3 per sector), install 36 (P) LTE RRUS at antenna level (12 per sector), install 6 (P) DC-9 NEMA (2 Per Sector), Install 3 (P) DC-12 outdoor units.

## **1.0 Acoustics Requirements**

The City has outlined the noise limit for commercial uses within the City of Ojai. Section 5-11.04 from the City of Ojai General Plan provides the exterior noise limits associated with different land uses and is provided in Appendix B. As outlined in Section 5-11.04 the following exterior noise levels of 65 dBA daytime (7am-10pm) and 55 dBA nighttime (10pm-7am), unless otherwise specifically indicated, shall apply to all receiving properties within a designated noise zone.

Therefore, this study evaluates the telecommunications worst-case noise levels and compares the results to the City's commercial nighttime exterior noise standard of 55 dBA.

## **2.0 Study Method and Procedure**

The future telecommunication equipment noise level was modeled using SoundPlan 3D (SP) acoustic modeling software. SP is capable of evaluating stationary noise sources (e.g. point sources such as fan's, and exhaust from cabinets) at various receptor locations. SP's software utilizes algorithms (based on inverse square law and reference equipment noise level data) to calculate the noise projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography and noise sensitive receptors. The model assumes the installation of four (4) Purcell cabinets with Flexair GFCS-60 Thermal management solution with an operating reference of 62 dBA at 5 feet from the cabinet (see Appendix C). Appendix D provides the model's inputs and outputs.

### 3.0 Findings

A total of four (4) receptors were modeled to accurately evaluate the future operational noise levels at and/or adjacent to the project site. A receptor is denoted by a yellow dot. The dot represents either a property line, a sensitive receptor such as an outdoor sensitive area/building facade or a calibration point (point where sound pressure levels are confirmed to match manufacturer's noise data)

Receptor 1-4 represents the nearest commercial receptors. MD calculated the noise level projection to the nearest commercial receptors based on the proposed project design. The projected noise level ranges from 36.7 to 46.9 dBA which does not exceed the City's Nighttime noise limit of 55 dBA.

Exhibit B provides the future noise level projections based on the proposed project design (page 4 of this report). The noise levels at the nearest sensitive receptor's range from 36.7 to 46.9 dBA which does not exceed the City's commercial nighttime noise limit of 55 dBA. Therefore, no mitigation is needed.

### 4.0 Conclusion

MD is pleased to provide this noise evaluation for this project. The project will comply with the City's applicable noise allowable limits based on the proposed design. If you have any questions regarding this letter, please call our office at (805) 426-4477.

Sincerely,  
MD Acoustics, LLC

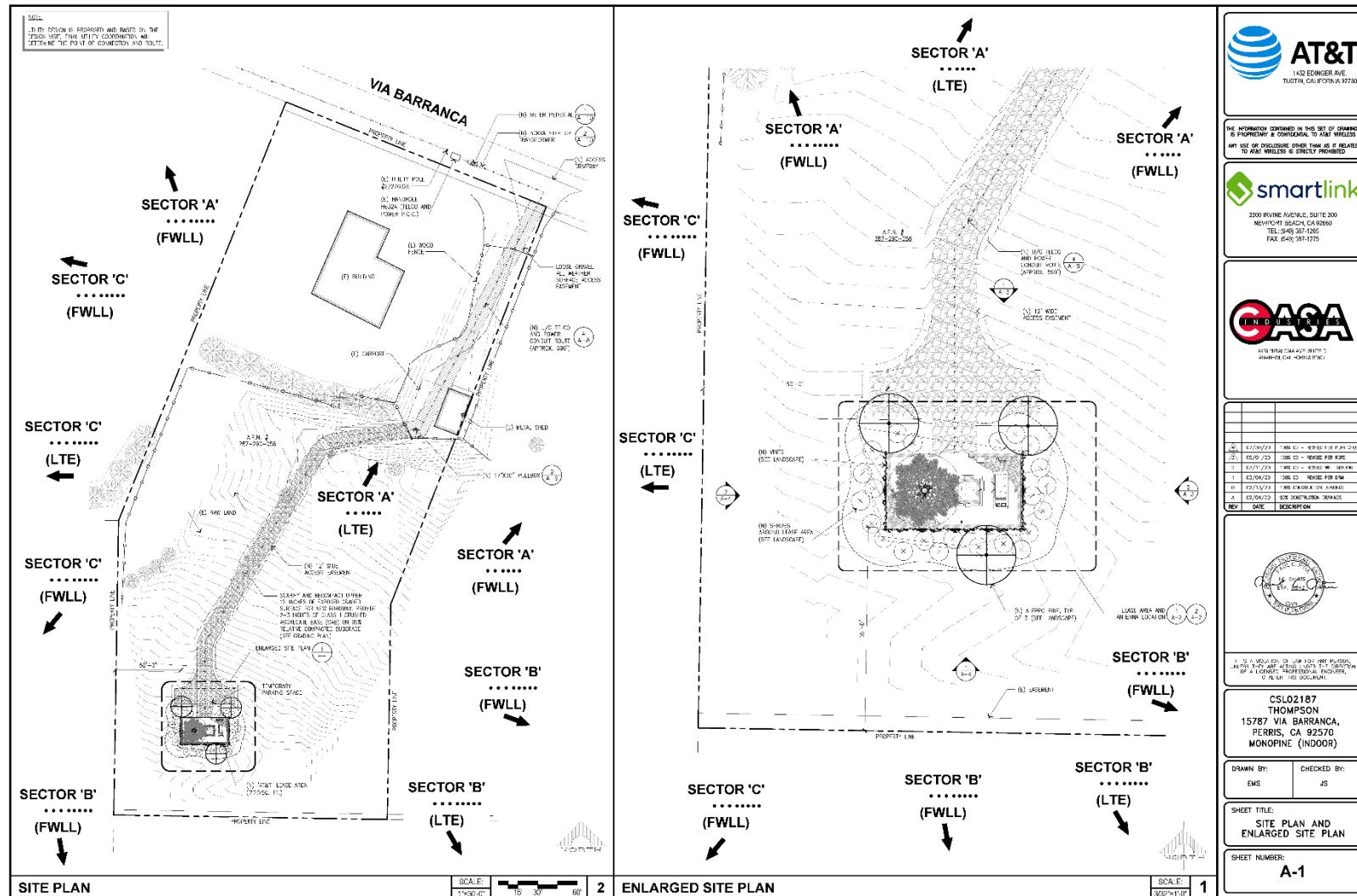


Mike Dickerson, INCE  
Principal

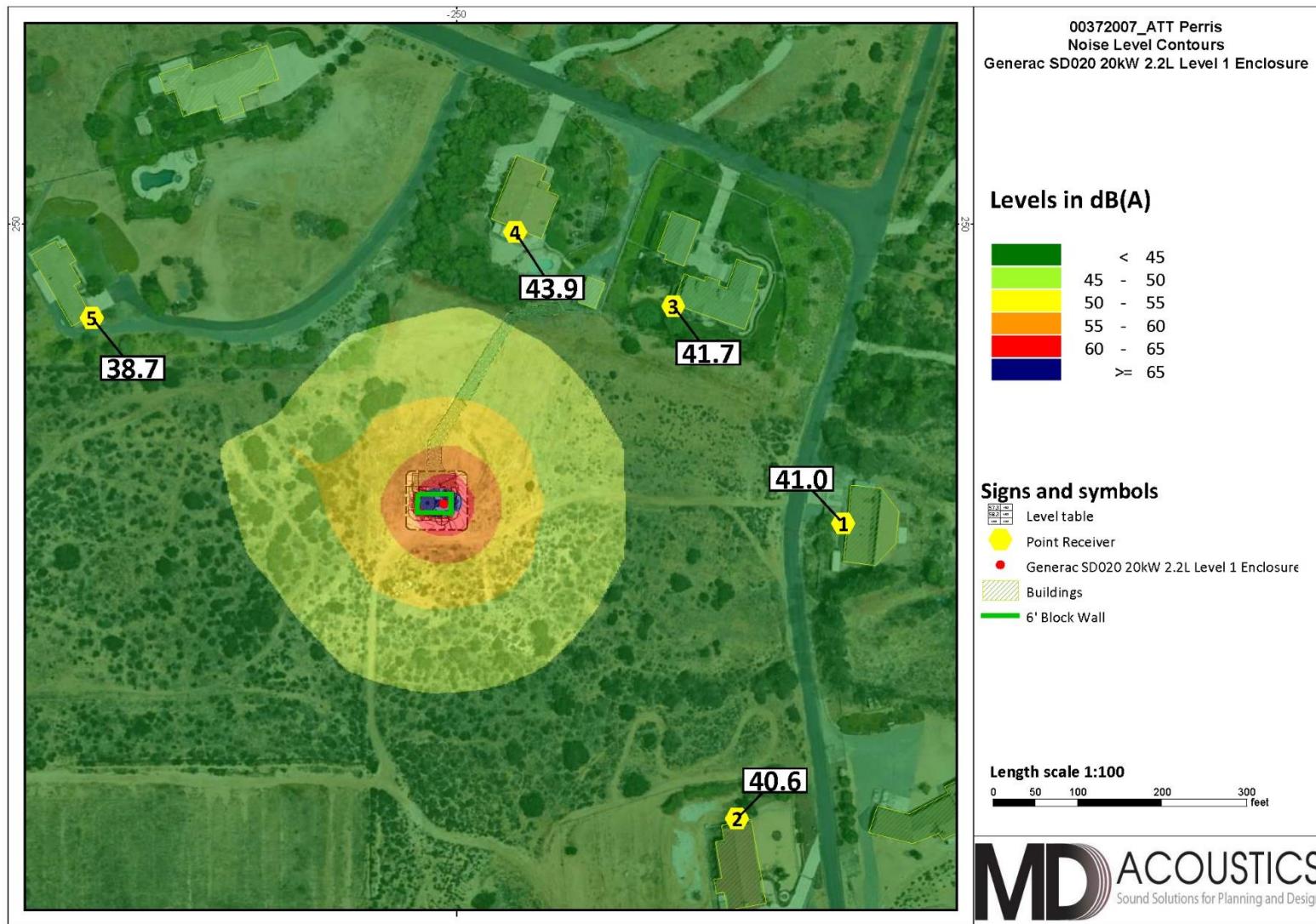


Robert Pearson  
Acoustical Consultant

Exhibit A  
 Site Plan



**Exhibit B**  
**Future Operational Noise Levels**



**Appendix A**  
Glossary of Acoustical Terms

## **Glossary of Terms**

**A-Weighted Sound Level:** The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

**Ambient or Background Noise Level:** The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

**Decibel (dB):** A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

**dB(A):** A-weighted sound level (see definition above).

**Equivalent Sound Level (LEQ):** The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

**Day-Night Level (LDN or DNL):** LDN is the average noise level over a 24-hour period. The noise between the hours of 10PM to 7AM is artificially increased by 10 dB. This noise is weighted to take into account the decrease in community background noise of 10 dB during this period.

**Noise:** Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

**Sound Level (Noise Level):** The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

**Sound Level Meter:** An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

**Appendix B**  
City of Ojai Noise Element

**Ojai Municipal Code**[Up](#)[Previous](#)[Next](#)[Main](#)[Collapse](#)[Search](#)[Print](#)[No Frames](#)[Title 5 SANITATION AND HEALTH](#)**Chapter 11 NOISE STANDARDS AND REGULATIONS****Sec. 5-11.01. Purpose.**

The purpose of this chapter is to maintain a quiet and comfortable living environment and to protect residents from unreasonably disturbing sound.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

**Sec. 5-11.02. Definitions.**

“Ambient noise” is the normal or existing level of environmental noise at a given location. It is the composite of all noise from sources near and far, excluding the alleged intrusive noise source.

“A-weighted sound level” means the sound level as measured on a sound level meter using the “A” weighting network. The level so read is designated in units of db(A).

“Decibel (db)” is a unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base of ten (10) of the ratio of the pressure of the sound measured to the reference pressure, which is twenty (20) micropascals.

“Impulsive noise” means a noise characterized by brief excursions of sound pressures whose peak levels are very much greater than the ambient noise level (such as might be produced by the impact of a pile driver) typically with one second or less duration.

“Leaf blower” is any mechanical device used, designed or operated to produce a current of air by fuel, electricity or other means to push, propel, or blow cuttings, refuse or debris.

“Noise level limit” means the maximum noise level acceptable under this chapter for the stated period of time.

“Plainly audible” means any sound that can be clearly heard by a person with normal hearing using ordinary auditory senses without artificial enhancement.

“Sound amplifying equipment” means any machine or device used for amplification of the human voice, music or other sound regardless of location, including such things as radios, stereos and compact disc players.

“Sound level meter” means an instrument used to measure sound levels which meets the standards of the American National Standards Institute.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

**Sec. 5-11.03. General noise regulations.**

(a) It is unlawful for any person to make or permit to be made any noise which unreasonably disturbs the peace and quiet of any neighborhood. Except as otherwise provided herein, no permit may be issued for any activity that may violate this section.

(b) The factors which may be considered in determining whether a violation exists include, but are not limited to, the following:

- (1) The sound level of the objectionable noise;
- (2) The sound level of the ambient noise;
- (3) The proximity of the noise to residential sleeping facilities;

- (4) The nature and zoning of the area within which the noise emanates;
- (5) The number of persons affected by the noise sources;
- (6) The time of day or night the noise occurs;
- (7) The duration of the noise and its tonal, informational or musical content;
- (8) Whether the noise is continuous, recurrent or intermittent;
- (9) Whether the noise is produced by a commercial or non-commercial activity;
- (10) Whether the noise is plainly audible by an enforcement officer at a distance of fifty (50) feet from the source of the noise.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

#### **Sec. 5-11.04. Noise standards and limits.**

**(a) Exterior noise standards.**

- (1) The following exterior noise standards apply to residential and commercial/industrial zones within the City:

	<b>Time Period</b>	<b>Noise Level</b>
Residential Zone (includes Village Mixed Use)	7:00 a.m. to 10:00 p.m.	55 db
	10:00 p.m. to 7:00 a.m.	45 db
Commercial/Industrial Zone	7:00 a.m. to 10:00 p.m.	65 db
	10:00 p.m. to 7:00 a.m.	55 db

- (2) It is unlawful for any person at any location within the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential or commercial/industrial property, to exceed the following noise levels measured in decibels on a cumulative basis per hour:

	<b>Noise Standard</b>		<b>15 Minutes Duration/Hour</b>		<b>Five Minutes Duration/Hour</b>		<b>One Minute Duration/Hour</b>		
	<b>Zones</b>	<b>Day</b>	<b>Night</b>	<b>Day</b>	<b>Night</b>	<b>Day</b>	<b>Night</b>	<b>Day</b>	<b>Night</b>
Residential (includes Village Mixed Use)	55 db	45 db	60 db	50 db	65 db	55 db	70 db	60 db	
Commercial/Industrial	65 db	55 db	70 db	60 db	75 db	65 db	80 db	70 db	

**(b) Interior noise standards.**

- (1) The following interior noise standards apply to all residentially zoned parcels and dwelling units within the City:

<b>Zone</b>	<b>Time Period</b>	<b>Interior Noise Standard</b>
Residential	All hours	45 db

- (2) It is unlawful for any person at any location within the City to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person when the foregoing causes the noise level, when measured within any other dwelling unit on any residential property, to exceed:

- (i) The interior standard for a cumulative period of more than five (5) minutes in any hour;
- (ii) The interior noise standard plus five (5) decibels for a cumulative period of more than one minute in any hour;
- (iii) The interior noise standard plus ten (10) decibels for any period of time.

(c) *Ambient noise level exception.* In the event the existing ambient noise level exceeds any of the noise level limits in subsections (a) and (b) of this section, the noise level limit shall be increased in five (5) decibel increments as appropriate to encompass or reflect the ambient noise level.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

### **Sec. 5-11.05. Special noise sources.**

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Special regulations and/or prohibitions are established on the following specific noise sources; provided, however, that unless otherwise excepted, the following noise sources must nevertheless comply with the noise level limits set forth in Section 5-11.04 of this chapter.

- (a) *Animals.* It is unlawful to keep, maintain or permit to be kept or maintained upon any premises, animals which make utterances, barks or cries which are so loud, so frequent and continued over so long a period of time that they deprive persons residing in two (2) or more separate residences in the neighborhood of the comfortable enjoyment of their home.
- (b) *Car alarms, burglar alarms, horns and signaling devices.* Unnecessary use or operation of car alarms, burglar alarms, horns and signaling devices, on automobiles, motorcycles or any other vehicles is prohibited. It is unlawful for any person to cause, allow or permit any motor vehicle alarm registered in the name of, or driven by, such person to emit any audible sound within the City for a period of more than ten (10) minutes. It shall also be unlawful for any property owner or lessee/tenant of a real property to allow a burglar alarm to sound for more than ten (10) minutes. The time shall be calculated based upon the emission of the first audible sound, and ten (10) minutes thereafter, notwithstanding any variation or delay in the emissions of audible sound. Any violation of this section is declared a public nuisance. In addition to other remedies, if a motor vehicle alarm continues to be activated, any police officer may have the vehicle removed from any zone in the City to abate such nuisance at the owner's and/or responsible party's expense. In the case of burglar alarms, the owner or lessee/tenant of the property shall be subject to a citation if the alarm sounds for more than ten (10) minutes.
- (c) *Construction.* Any person who operates powered construction equipment, erects, constructs, demolishes, excavates for, alters or repairs any building or structure within the City in such a manner as to cause noise to be received by any person beyond the boundaries of the property on which the construction work is occurring shall comply with the following:
  - (1) Construction hours shall be limited to between 7:00 a.m. and 5:00 p.m. on weekdays. Construction activities authorized by a valid City permit may, as warranted by the project, exceed the noise level limits of Section 5-11.04 on a temporary and short-term basis during the authorized construction hours, as determined appropriate and necessary by the Community Development Director.
  - (2) No construction work shall be performed on weekends or City holidays.
  - (3) All construction equipment shall be operated with the standard factory silencer and/or muffler equipment attached and maintained in good working order.

Exception: A person may perform construction work on the person's own property that results in noise being received by persons beyond the boundaries of the property between 8:00 a.m. and 6:00 p.m. on weekends providing such construction activity is for the purpose of improving the property where the work is being performed, is not carried on for profit or livelihood, and otherwise meets the noise level standards of Section 5-11.04 of this chapter.

- (d) *Gardening and domestic power tools.* No person shall operate any lawnmower, lawn edger, riding tractor or any other machinery, equipment or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within any commercial zone which can be heard within any residential zone between the hours of 6:00 p.m. and 8:00 a.m. Use of such tools is prohibited on City holidays.
- (e) *Leaf blowers.*

(1) Only electric powered leaf blowers may be used in the City. Leaf blowers powered by internal combustion engines are prohibited in the City. The operation of electric powered leaf blowers is permitted in residential zones providing the following conditions are met:

- (i) Hours of operation are limited to 8:00 a.m. to 5:00 p.m. weekdays and Saturdays. Operation is prohibited on Sundays and holidays.
- (ii) No cutting, refuse or debris is blown onto neighboring properties or into a street or gutter.
- (iii) The standard factory silencer shall be attached at all times and in good working order.

The operation of electric powered leaf blowers shall be permitted on parcels in non-residential zones under the following conditions:

- (iv) Hours of operation are limited to 8:00 a.m. to 6:00 p.m. Operation is prohibited on City holidays.
- (v) No cuttings, refuse or debris are blown onto neighboring properties or into a street or gutter.
- (vi) The standard factory silencer shall be attached at all times and maintained in good working order.
- (2) No business license shall be issued to any gardener and/or landscaper without proof of purchase of an electric leaf blower and a signed declaration that the company will not use prohibited leaf blowers or other prohibited equipment in the City.
- (3) The full blower nozzle extension shall be used for maximum efficiency and to minimize the spread of fugitive dust.
- (4) After leaf blower use, debris and waste materials shall be disposed of in trash receptacles or other equivalent container.
- (5) Leaf blowers shall be maintained in proper working order and all manufacturers' noise and dust control equipment on the leaf blower shall remain on the blower and be in operating condition.

(f) *Libbey Bowl events.*

- (1) All performances using sound amplification equipment in Libbey Bowl shall be in conformance with the adopted sound control plan for the Bowl. The sound control plan shall include such provisions as determined by resolution of the City Council.
- (2) Use of sound amplification equipment in Libbey Bowl shall be limited to the hours between 10:00 a.m. and 10:00 p.m.

(g) *Loading and unloading.* Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in a manner that causes a noise disturbance across the boundary lines of an adjacent property shall be prohibited. At all other times such loading and handling activities are subject to the noise level limits of Section 5-11.04 of this chapter.

(h) *Motor vehicle operation.* The racing of the engine of a motor vehicle, allowing the engine to idle for longer than ten (10) minutes, or bringing a motor vehicle to a sudden start or stop are prohibited, except as required by an emergency. Operating a vehicle on public or private property in a manner that generates noise that is so loud, raucous or jarring that it disturbs or is a nuisance to any adjacent neighborhood or person residing in the neighborhood is prohibited.

(i) *Outdoor dining.* Outdoor dining in commercial zones is prohibited between the hours of 11:30 p.m. and 6:00 a.m. Such hours of operation may be further restricted by the conditions of any permit that must be granted to approve outdoor dining.

(j) *Pool equipment.* All pool motor pumps and filters shall be designed and constructed with sound attenuation devices that meet the requirements of the City Building Department.

(k) *Refuse collection.* No person shall collect refuse or operate a street sweeping vehicle on a street or parking lot within or adjacent to a City residential area between the hours of 6:00 p.m. and 7:00 a.m.

(l) *Sound amplifying equipment (includes radios).* The use or operation of sound amplifying equipment shall be subject to the following restrictions and prohibitions:

- (1) The type of amplified sound shall be limited to either music or human speech, or both.

- (2) The use or operation of sound amplifying equipment shall comply with the noise level limits set forth in Section 5-11.4.
- (3) The volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to persons or domestic animals within the area of audibility.
- (4) It is unlawful for any person to operate a radio, stereo, compact disc player or other sound amplifying equipment on the public right-of-way or public land in a manner that exceeds the noise level limits established for adjacent properties or is plainly audible to the human ear at a distance of thirty-five (35) feet from the source, unless the operation of such equipment is part of a special event sponsored by the City or is otherwise permitted pursuant to the provisions of subsection (f) of this section.
- (5) The operation of any radio, compact disc or tape player on a public transit bus or trolley so as to emit noise that is plainly audible to any other person in the vehicle shall be prohibited.

- (m) *Street sweeping vehicles.* No person shall collect refuse or operate a street sweeping vehicle on a street or parking lot within or adjacent to a City residential area between the hours of 6:00 p.m. and 5:00 a.m.
- (n) *Yelling, shouting, etc.* Disturbing or raucous yelling, shouting, hooting or whistling on the public streets and sidewalks is prohibited.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 1, Ord. 736, eff. April 22, 1999, § 2, Ord. 887, eff. August 9, 2018, § 2, Ord. 906, eff. April 29, 2020)

#### **Sec. 5-11.06. Loud parties and assemblages—Enforcement costs and response fees.**

- (a) When any loud or unruly assemblages occur and the City's law enforcement agency is required to respond to the scene in response to citizen complaints, the peace officer at the scene shall determine whether there is a violation of this chapter. If the peace officer determines there is a violation, he or she shall notify the owner of the property and/or the person in charge of the property and/or the person responsible for the assemblage that such person or persons shall be held personally liable for the cost of providing additional law enforcement personnel over and above the normal police services provided during the initial response to the assemblage. If the person in charge or responsible for the party is a minor, the parents or guardians of such minor shall be notified regarding this liability.
- (b) In the event that subsequent police personnel and resources are needed within twenty-four (24) hours after the initial warning given in accordance with subsection (a) of this section in order to control the threat to the public peace, health, safety or general welfare caused by such unruly assemblage, such resources shall be deemed to be on a special security assignment over and above normal police services. The owner of the property and/or the person in charge of the property where such assemblage occurs and/or the person responsible for such assemblage shall be personally responsible for the cost of subsequent call backs or security assignments in an amount determined upon a cost accounting basis by the City, per administrative guidelines adopted by the City and approved by resolution of the City Council. The cost of such special police security shall include damage to City property and/or injuries to City personnel. In addition, to the foregoing, the City reserves its right to elect any other legal remedies.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

#### **Sec. 5-11.07. Exemptions.**

The following activities shall be exempt from the provisions of this chapter:

- (a) *Emergency exemption.* The emission of sound for the purpose of alerting persons to the existence of an emergency or the emission of sound in the performance of emergency work, including emergency road work or utility repair;
- (b) *Warning devices.* The operation and/or testing of warning devices necessary for the protection of public safety, including police, fire and ambulance sirens and train horns;
- (c) *Outdoor school activities.* Activities conducted on public playgrounds and public or private school grounds, including, but not limited to, athletic and school entertainment events;
- (d) *Special events.* Community events, concerts and parades open to the general public without charge which are approved and/or permitted by the City in advance shall be exempt from the provisions of this chapter;

- (e) *Post Office Tower bell.* Sound emanating from the bell in the historic Post Office Tower on Ojai Avenue is exempt from the provisions of this chapter;
- (f) *Public facility maintenance and construction in the public right-of-way.* Maintenance and repair of public facilities by City personnel and City-authorized contractors on weekends and holidays are exempt. Construction on public facilities or in the public right-of-way by City-authorized contractors and personnel is exempt from the provisions of this chapter. City personnel performing maintenance and construction activities shall make every effort to conform with the provisions of this chapter when feasible.
- (g) *After hours construction.*
  - (1) The Community Development Director or designee may issue an after-hours construction permit authorizing work and/or entrance to a work site otherwise prohibited by this chapter if the Director determines that the public interest will be served by such a permit. Situations in which the public interest may be served include, but are not limited to, construction on or near school grounds and construction that may interfere with vehicular or pedestrian traffic in heavily traveled areas.
  - (2) Applications for an after-hours construction permit shall be in writing and shall set forth how the public interest will be served by issuing the permit. An after-hours construction permit may be revoked or suspended by the Planning Director or designee if it is determined that the proposed activity will detrimentally affect the public safety, health and welfare. Emergency construction activities to protect the public safety, health and welfare are exempted under subdivision (1) of this subsection.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

#### **Sec. 5-11.08. Sound level measurement.**

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Any sound levels measured pursuant to the provisions of this chapter shall be "A" weighted sound levels, measured with a sound level meter using the "A" weighting and slow response, except for impulsive noise, for which the fast response shall be used. The sound level meter shall meet the standards for such devices established by the American National Standards Institute. Outdoor measurements shall be taken with the microphone located along the property line of the complainant's property or the noise source. Whenever possible, the meter shall be located three (3) to five (5) feet above ground level. If the noise complaint is related to interior noise levels, interior noise levels shall be measured within the complainant's dwelling or commercial structure. If possible, the ambient noise level shall be measured at the same locations as the offending noise source is measured.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

#### **Sec. 5-11.09. Enforcement.**

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- (a) The Director of Community Development shall enforce the provisions of this section.
- (b) Any noise exceeding the noise level limits specified in Section 5-11.04 of this chapter, or any noise constituting an occurrence of any prohibited act specified in this chapter, shall be deemed to be *prima facie* evidence of a violation of the provisions of this chapter.
- (c) Except where a person is acting in good faith to comply with an abatement order issued pursuant to subsection (d) of this section, violation of any provision of this chapter shall be cause for a notice of violation to be issued by the Director of Community Development or other responsible official according to procedures which the Director may prescribe. Any person violating any of the provisions of this chapter shall be deemed guilty of an infraction.
- (d) In lieu of issuing a notice of violation, the Director or other responsible enforcement official may issue a warning or an order requiring abatement, within a reasonable time period, of a sound source alleged to be in violation of this chapter. No complaint or further action shall be taken in the event that the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the warning order of abatement.
- (e) In addition to the enforcement powers granted by this section to the Director of Community Development and the enforcement powers provided by all other applicable sections of this Code, the Chief of Police is authorized to enforce this chapter by issuance of citations for violations of this chapter.

(f) For purposes of this chapter, enforcement officer and enforcement official mean the Director of Community Development, the Chief of Police, the Code Enforcement Officer, and their designees and deputies.

(§ 1, Ord. 731, eff. August 27, 1998, as amended by § 2, Ord. 887, eff. August 9, 2018)

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View the [mobile version](#).

## **Appendix C**

### Manufacturer Noise Data

# FlexAir® GFCS-60

## Energy Efficient Thermal Management Solutions

The Green Free Cooling System (GFCS) is a thermal management solution for installation on new and existing telecom shelters. GFCS provides an energy efficient and reliable free cooling system for managing the interior environment of a shelter. The solution is optimized for low energy consumption and long filter replacement intervals while maintaining the prescribed cooling capacity performance.

The cooling capacity is managed based on the temperature difference between the interior and exterior of the shelter. The system adjusts the cooling capacity based on actual heat load and degree of pollution within the inlet air filter. The control system ensures both the power consumption and fan rotations (RPMs) are kept to a minimum, while extending the lifetime of the fan and filter, reducing the need for maintenance and repair calls to the shelter.

The Green FCS consists of three main components; Fan Filter Module (with integrated controller located on the door or wall), and Outlet Module (gravity damper located on the rear).

### Applications:

Provides a thermally-controlled environment for electronic equipment and batteries within a telecom shelter.

### Product Features:

- Microprocessor control provides optimal fan speed for energy saving
- Easy to install in new and existing shelters
- Over pressure system eliminates unfiltered air and unwanted water ingress from exterior
- Reduces power consumption
- Control of existing air conditioning and heater



### The Purcell Advantage

Purcell Systems designs and manufactures thermally-managed outdoor enclosures that meet the exact needs of the enclosed equipment for network operators and utilities. Our enclosures provide comparable solutions to prefabricated buildings, containers and shelters at a fraction of the cost. Both standard and custom enclosures are delivered with the following capabilities:

**Choice of Options:** Pre-engineered and interchangeable modules provide optimal configurations with minimal cost and lead time.

**Thermal Management:** The industry's widest selection of heating and cooling systems ensures the most efficient thermal management solution with the lowest energy consumption.

**Lowest Total Cost of Ownership:** Engineering analysis and modeling ensures your enclosure configuration minimizes installation, maintenance, repair, capital, and operational expenses.

**Equipment Integration and Staging:** Electronic equipment can be staged and installed in our enclosures prior to final deployment and installation.

# FlexAir® GFCS-60

GFCS 60		Thermal Management Systems
Exterior Dimensions		Direct Air Cooling
Filter Module	410mm x 370mm x 700mm 16.1"W x 14.6"D x 27.6"H	
Controller Module with Fan	420mm x 175mm x 733mm 16.5"W x 16.9"D x 28.9"H	
Outlet Module	465mm x 250mm x 410mm 18.3"W x 9.8"D x 16"H	<b>3700 m3/h</b> <b>2200 cfm</b> <b>-48VDC</b>

## Specifications

EXTERIOR	Thermal Performance	OTHER
<b>Construction</b>		<b>Environmental</b>
<ul style="list-style-type: none"> <li>Material thickness 1mm / .039" corrosion resistant Aluzinc® (steel substrate coated with aluminium-zinc alloy)</li> <li>Finish: Light Grey (RAL 7035) polyester powder coat</li> <li>Weight (Base Configuration): 30 kg / 66 lbs</li> </ul>	<ul style="list-style-type: none"> <li>Cooling Capacity Range: 6 kW of heat load (at <math>\Delta T</math> 5°C); 2 fans</li> <li>Fan Type: Centrifugal fan</li> <li>Air filter: G4 or EU5 Filter available per request</li> <li>Power Requirements: 0,6 - 7,8 A depending on load and filter status</li> <li>Acoustic Emissions (max): 62 dB(A) at 1,5m / five feet</li> </ul>	<ul style="list-style-type: none"> <li>IP Protection: IP 55</li> <li>Operating Temperature: -25° to + 50°C</li> <li>Humidity: 10-90%</li> </ul>
<b>Mounting Requirements</b>	<b>Other Options</b>	<b>Warranty</b>
<ul style="list-style-type: none"> <li>Cut-out for Fan Filter Module: 250mm / 9.8" diameter per fan</li> <li>Cut-out for Outlet Module: 425mm x 370mm / 16.7"W x 14.6"H per outlet module</li> </ul>	<ul style="list-style-type: none"> <li>Alarms: fan failure, temp sensors out of range, high temperature, controller failure, LVD</li> </ul>	<ul style="list-style-type: none"> <li>1 year</li> </ul>



## **Appendix D**

### SoundPlan Input/Output

**ATT City of Ojai**  
**3rd octave spectra of the sources in dB(A) - Situation 1: SP**

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Name	I or A m,m <sup>2</sup>	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	400Hz dB(A)	500Hz dB(A)	630Hz dB(A)	
Purcell FlexAir GFCS-60				71.0	71.0	66.2	66.2	66.2	
Purcell FlexAir GFCS-60				71.0	71.0	66.2	66.2	66.2	
Purcell FlexAir GFCS-60				71.0	71.0	66.2	66.2	66.2	
Purcell FlexAir GFCS-60				71.0	71.0	66.2	66.2	66.2	

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**ATT City of Ojai**  
**Contribution level - Situation 1: SP**

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Source	Source group	Source ty	Tr. lane	Leq dB(A)	A dB	
Receiver Commercial/Industrial Zone 1 FI G dB(A) Leq 43.7 dB(A)						
Purcell FlexAir GFCS-60	Default industrial noise	Point		37.7	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		38.9	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		37.4	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		36.2	0.0	
Receiver Commercial/Industrial Zone 2 FI G dB(A) Leq 36.7 dB(A)						
Purcell FlexAir GFCS-60	Default industrial noise	Point		31.1	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		30.7	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		30.3	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		30.6	0.0	
Receiver Commercial/Industrial Zone 3 FI G dB(A) Leq 46.9 dB(A)						
Purcell FlexAir GFCS-60	Default industrial noise	Point		38.4	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		38.4	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		42.3	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		42.6	0.0	
Receiver Commercial/Industrial Zone 4 FI G dB(A) Leq 39.3 dB(A)						
Purcell FlexAir GFCS-60	Default industrial noise	Point		32.9	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		32.4	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		33.7	0.0	
Purcell FlexAir GFCS-60	Default industrial noise	Point		34.1	0.0	

**ATT City of Ojai**  
**Contribution spectra - Situation 1: SP**

Source	Time slice	Sum dB(A)	500Hz dB(A)	
<b>Receiver Commercial/Industrial Zone 1 FI G dB(A) Leq 43.7 dB(A)</b>				
Purcell FlexAir GFCS-60	Leq	36.2	36.2	
Purcell FlexAir GFCS-60	Leq	37.4	37.4	
Purcell FlexAir GFCS-60	Leq	38.9	38.9	
Purcell FlexAir GFCS-60	Leq	37.7	37.7	
<b>Receiver Commercial/Industrial Zone 2 FI G dB(A) Leq 36.7 dB(A)</b>				
Purcell FlexAir GFCS-60	Leq	30.6	30.6	
Purcell FlexAir GFCS-60	Leq	30.3	30.3	
Purcell FlexAir GFCS-60	Leq	30.7	30.7	
Purcell FlexAir GFCS-60	Leq	31.1	31.1	
<b>Receiver Commercial/Industrial Zone 3 FI G dB(A) Leq 46.9 dB(A)</b>				
Purcell FlexAir GFCS-60	Leq	42.6	42.6	
Purcell FlexAir GFCS-60	Leq	42.3	42.3	
Purcell FlexAir GFCS-60	Leq	38.4	38.4	
Purcell FlexAir GFCS-60	Leq	38.4	38.4	
<b>Receiver Commercial/Industrial Zone 4 FI G dB(A) Leq 39.3 dB(A)</b>				
Purcell FlexAir GFCS-60	Leq	34.1	34.1	
Purcell FlexAir GFCS-60	Leq	33.7	33.7	
Purcell FlexAir GFCS-60	Leq	32.4	32.4	
Purcell FlexAir GFCS-60	Leq	32.9	32.9	