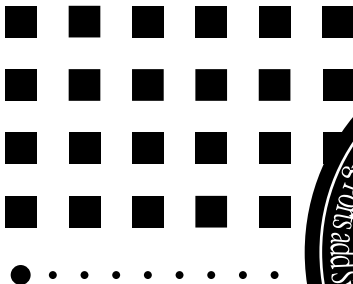
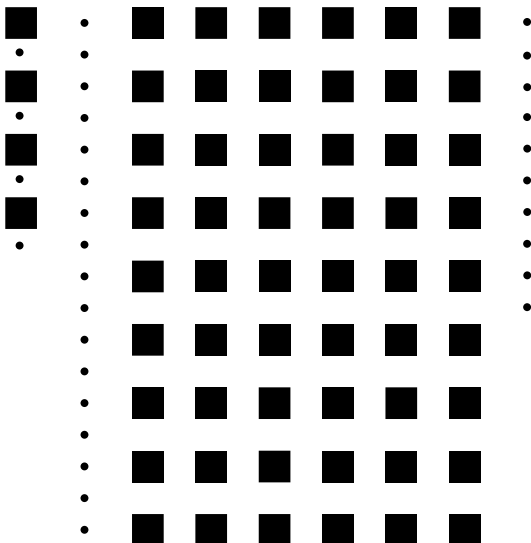


.....



# OWNER'S MANUAL



**XTANT TECHNOLOGIES**



xtant :: 301a

## x•tant

**x•tant** (ikst`ænt, e`kstent) 1. *adj.* still in existence, especially. of **enduring excellence**. ||e.g. of *xtant quality that stands the test of time and the passing of fads.* 2. *adj.* Standing out or above, as in **out-standing**, the quality or state of being **original**. [from. L. xstans (xstantis) n present participle of xstare, to stand forth. || Second origin; Prescott AZ. U.S.A. Ntl. Frst. Cmp. 1994 v. to xtantify = to stand up and be heard] 3. *noun* /XTANT **applied creativity** esp. a *company of people united to apply original thinking to continually advance the spectrum of extraordinarily **vivid sound reproduction**, to apply innovative thought and action to questions previously considered resolved.* ||

### Xtant Technologies

7676 South 46th Street Phoenix, Arizona 85040  
(602) 431-8686 FAX (602) 431-8600





xtant



# WELCOME



## WELCOME

*We would like to personally thank you for choosing Xtant Technologies equipment. Our mission is to continually provide you with the best mobile audio – anywhere. Our goal is to exceed your expectations. Our driving concepts are superiority through simplicity, flexibility, compatibility, reliability, efficiency, and ease of system expansion. We began with a clean slate. We challenged all the assumptions. We enlisted a dream team of audio specialists: manufacturers, installers, designers and audiophiles. We all became excited about the possibilities. We listened. We are still listening.*

**We Listen** to your recommendations, opinions, and needs.

**We Listen** to our fellow supporting manufacturers to ensure that our products interface well with a wide variety of products.

**We Listen** to our equipment with sensitive and critical ears to provide the finest mobile audio components on the planet.

*We have created Xtant because we respect the music, and the people who want to really listen. The result has expanded the expectations of extraordinarily vivid mobile audio. Vivid mobile audio, a continuing evolution of the art of listening and hearing, well. We believe that music deserves the maximum accuracy in reproduction. We have united art of the technology and the technology of the art to create the magic. Xtant is only available through the finest specialized mobile audio retailers. Your Xtant Select Dealer was chosen by us because of their passion for excellence and their commitment to expanding their expertise. Please remember, exceptional audio requires professional installation. Your Xtant Dealer will optimize your system and your level of satisfaction.*

*Whether you are a professional competitor in auto sound or a privately passionate connoisseur of fine music, we salute you, and appreciate your investment in quality mobile audio. If you have a problem or a suggestion please give us a call or write us. Thanks for having the faith in the music and the faith in us.*

*We look forward to a long and enduring relationship!*

*Welcome to Xtant!*



xtant





## TABLE OF CONTENTS

<b>SAFEGUARDS</b>	<b>4</b>
<b>XTANT 301A</b>	<b>5</b>
<b>SPECIFICATIONS</b>	<b>6</b>
<b>ADDING ACCESSORY MODULES</b>	<b>7</b>
<b>OPTIONAL ACCESSORY MODULES</b>	<b>8</b>
<b>MAINTENANCE</b>	<b>9</b>
<b>CUSTOMER RELATIONS / TECHNICAL SERVICES</b>	<b>10</b>
<b>WARRANTY</b>	<b>11</b>
<b>OWNER'S INSTALLATION LOG</b>	<b>12</b>

**INSTALLER'S REFERENCE**

**INSERT**





## SAFEGUARDS

Please take the time to read this Owners Manual. The following guidelines are designed to assure a safe and properly installed Xtant Mobile Audio System.

All Xtant amplifiers and accessories are intended to be installed by a certified professional mobile audio installation specialist. It is the recommendation of Xtant Technologies that your new Xtant product(s) and all of your mobile audio products be installed by your Authorized Xtant Dealer.

### CAUTION!

The use of a high-powered, mobile audio sound system may cause damage or a loss of hearing. Listening at loud volume levels may impair your ability to hear traffic sounds, and therefore, may constitute a traffic hazard. Xtant advises lower volume levels while driving.

### INSTALLER'S REFERENCE (INSERT)

The Installer's Reference is an insert included in this manual. It is designed to assist your Authorized Xtant Select Dealer's professional installer. Installation techniques critical to the creation of a high-performance mobile audio sound system, (procedures for running wires, basic safety rules, and system layout concepts) are not presented in this owners manual. All Authorized Xtant Select Dealers have been chosen for their expertise in system design and advanced installation capabilities and Xtant highly recommends that you have all of your mobile audio products professionally installed. If, however, you choose to install your Xtant amplifier yourself, please refer to the Installer's Reference prior to installation.

### WIRING REQUIREMENTS

All Xtant amplifiers have minimum wire gauge requirements for Power, Ground, Remote Turn-On, and Speaker cables. Please refer to the Installer's Reference for recommended wire gauges.

### FUSING REQUIREMENTS

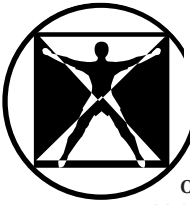
The 301a is not fuse protected! For safety, an outboard 50 amp fuse may be added close to the amplifier. A 50 amp fuse must be installed in-line with the power wire at the battery. In the case of a multi-amp system, use a fuse value equal to the combined total demand of all amplifiers in the system.



### WATER AND MOISTURE

Install all Xtant amplifiers and accessories in a location free of moisture or exposure to water.





xtant :: 301a

The 301a is a 300 Watt, mono (one channel) amplifier designed to provide high power, exceptional flexibility and outstanding performance in an all-in-one package. The 301a can drive a complex speaker system or, be used to create a high-powered, bi-amplified, three-channel system when paired with Xtant's 302a stereo amplifier.

The on-board "Balanced Line Inputs" will accept a wide range of input signals - from your OEM Factory head-unit to the latest in aftermarket CD head-unit technology. The "Balanced Line" circuitry also helps eliminate noise (alternator whine) induced into the signal cables.

As with all Xtant amplifiers, the 301a incorporates a forced convection thermal management system, a *Pulse Width Modulated* power supply for unsurpassed reliability and three on-board accessory ports allow performance upgrades via Xtant's plug-in modules. All these features are encased in Xtant's exclusive finish of polished stainless steel and copper!

## STANDARD FEATURES



**FORCED CONVECTION COOLING:** The 301a employs forced convection cooling for thermal management. An on-board thermal sensing circuit regulates fan speed to maintain optimum operating temperature.

**PWM POWER SUPPLY:** All Xtant amplifiers feature a fully regulated, Pulse Width Modulated power supply. This supply technology provides consistent output performance even when battery voltage is less than optimum.

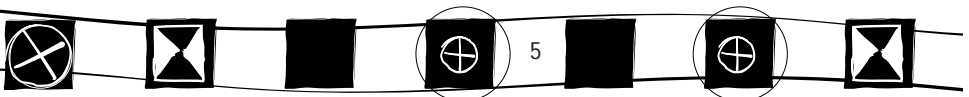
**BALANCED / FLOATING INPUT:** The 301a is supplied with Balanced / Floating inputs. When engaged, this circuitry helps to eliminate "system noise" associated with "ground-loops". It also increases input sensitivity which "widens the scope" of head units for use with the 301a

**MODULAR EXPANSION PORTS:** The 301a is supplied with three modular port(s). Two of the ports are dedicated to the amplifier and allow you to dock any of Xtant's signal processing modules. The third port is reserved for add signal processing to the RCA line outputs. The modular method of system expansion is a convenient means of adding the level(s) of signal processing to satisfy your unique system requirements.

**OPTIMIZING CIRCUITRY:** The 301a incorporates an optimizing circuit which allows the amplifier to produce maximum power (300 Watts) into either a 4 $\Omega$  or 2 $\Omega$  speaker load.

**PROTECTION CIRCUITRY:** Both Thermal and Overcurrent protection are incorporated into the 301a. In the event of a problem, either thermal or overcurrent the amplifier will reduce its power to maintain operation.

**STATUS LEDs:** Three LEDs, visible through the cover, indicate operational status of all Xtant amplifiers. The red LED illuminates when the amplifier is "ON", the yellow LED indicates that overcurrent protection is employed and the orange LED glows when the thermal protection circuit is operational.





## XTANT 301A SPECIFICATIONS

Frequency Response	5 Hz to 50 kHz +/- 3 dB
Number of Channels	1
Watts per Channel @ 4Ω	1 x 300
Watts per Channel @ 2Ω	1 x 300
Distortion (THD)	< .04%
Signal to Noise Ratio	> 100 dB
Damping Factor	> 200 @ 100 Hz with 4Ω Load
Input Sensitivity	100 mV to 8.5 V RMS Unbalanced Source 100 mV to 17 V RMS Balanced Source
Input to Line Output Gain	0 dB +/- 20 dB, Selectable in 10 dB Steps
Line Outputs:	Yes
Crossover	CM12LP Included
Module Ports	2 for Amplifier and 1 for Line Outputs
Power Supply	Fully Regulated, Pulse Width Modulated
Operational Voltage	11 to 15 Volts
Fusing	No On-Board Fuse
Fusing Requirement	50 Amp
Size (L x W x H)	14.5 x 7.6 x 2.25"
Warranty	Limited 4 Year Parts and Labor

SEE PAGE ELEVEN OF THIS MANUAL FOR COMPLETE DETAILS



**xtant**

6





## ADDING ACCESSORIES MODULES

The 301a is equipped with three accessory docking ports.

The two ports dedicated to the amplifier are labeled *Amp Vert/Horiz Acc Port* and *Amp Vert Acc Port*. The third port is dedicated to the RCA line outputs and is labeled *Line Out Vert Acc. Port*.

Xtant offers two types of accessory modules which are designed for either “Horizontal” or “Vertical” mounting. The docking port, located behind the RCA line outputs, labeled *Amp Vert/Horiz Acc Port* will accept any module, while the ports labeled “Vert” will only accept modules designed for vertical mounting.

The two accessory ports dedicated to the amplifier allow you to add the level(s) of signal processing that your system requires. An example would be if a *band pass function* is required, a CM12H (high pass at the lowest frequency of the band pass) and a CM12L (low pass at the highest frequency of the band pass) could be used to create a 12 dB per octave band pass filter. A more basic set-up would be a PQM-1 EQ module and a CM 12 crossover module.

The *Line Out Vert Acc Port* will only accept one of the “vertical” accessory modules. This allows bass equalization or a crossover function to be dedicated to the RCA line outputs. If a module is not used (jumpers in place), a signal is still present at the RCA line outputs.



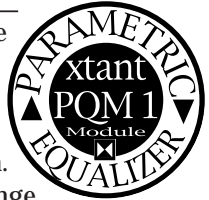


## OPTIONAL ACCESSORY MODULES

Xtant optional accessory modules are easily and quickly installed by your Authorized Xtant Dealer. The upgrade modules snap into place on the amplifiers PC board when the top of the unit is removed. These accessories enhance your entire system, expanding and customizing performance for your unique application.

### PARAMETRIC EQUALIZATION MODULE - PQM 1

The PQM-1 is a precision tuning instrument, designed to be adjusted with the use of a *Real-Time-Analyzer*. This true, fully adjustable, one band parametric equalizer provides individual frequency, Q (bandwidth), and gain adjustments. Any frequency from 20 Hz to 20kHz can be chosen. The “Q” ranges from 1 to 10 in value, providing a wide range of adjustment to address the subtle tuning requirements common with most mobile audio systems.



### 24 DB / OCTAVE CROSSOVER MODULE - CM 24X

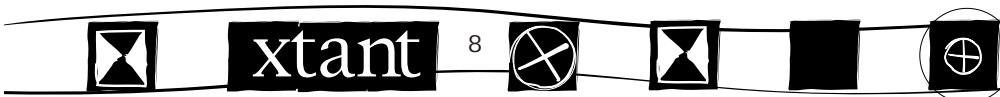
The CM-24X is a 24 dB per octave “Linkwitz - Riley” crossover filter. The CM-24x module improves loudspeaker polar response while its steeper slope provides enhanced system design flexibility.

### 12 DB / OCTAVE FILTER MODULES - CM 12H & CM12L

The CM12H and CM12L are 12 dB per Octave “Butterworth” filter networks dedicated to either a High-Pass function (CM12H) or Low-Pass function (CM12L). Each module is designed to be plugged into any accessory port on Xtant’s 301a and 302a amplifiers. Frequency adjustment is via a 12 pin plug-in resistor SIP (Single In-line Package) and 13 different frequency SIPs are available from your authorized Xtant Dealer.

### RESISTOR MODULES - RM4, RM8, RM12 & RM16

The RM 4, 8, 12 & 16 resistor modules are designed to activate the “passive speaker terminals” on the 302a while providing four different levels of attenuation for the speakers connected to these terminals. The RM 4 module offers 4 dB of attenuation, the RM 8 offers 8 dB of attenuation, the RM 12 offers 12 dB of attenuation and the RM 16 offers 16 dB of attenuation.





## MAINTENANCE

### RECOMMENDED CLEANING PROCEDURES

#### CLEANING THE FAN / CIRCUIT BOARD - EVERY 90 DAYS

- A. The internal fan in all Xtant amplifiers need periodic cleaning. If you are in a high dust environment, every 30 days is recommended. We recommend that your dealer remove the cover and clean the fan blades with a soft brush. Loose dust can be removed with a vacuum hose.

**CAUTION:** Have your dealer check the fan for obstructions if your amplifier over heats. When the Thermal Protection Circuit is engaged, the orange LED will be illuminated and power may be reduced.

- B. Have your dealer check the circuit board for dust. If present, use a low pressure air source to blow-off the dust particles. **DO NOT** use a high-pressure source, brush or any similar device to clean the circuit board!

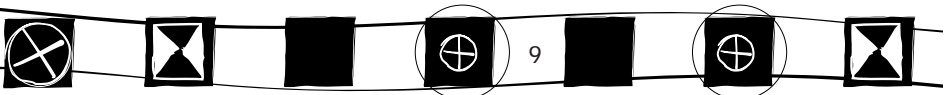
#### CLEANING THE AMPLIFIER



Clean the stainless steel cover with a cotton cloth. For a more thorough cleaning, use WD 40™. Apply the cleaner to the cloth (not the amplifier) and wipe the surface. Take care not to catch the cloth on the copper mesh.

**CAUTION:** Do not allow liquids to touch the circuit board.

- B. To polish the stainless steel cover use a commercially available stainless steel cleaner/polish. Please read the directions supplied with the polish before beginning. Apply the cleaner/polish to the cloth (not the amplifier) and wipe the surface. Take care not to catch the cloth on the copper mesh.





## CUSTOMER RELATIONS TECHNICAL SERVICES

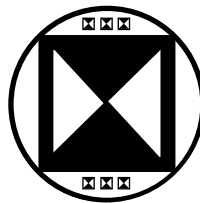
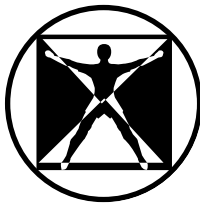
### STATEMENT OF PURPOSE

Our customer's satisfaction is our purpose. You represent our present and our future. It is our goal to create and nurture relationships based upon trust and respect. This commitment is not taken lightly or just for today; it is our way of doing business. We believe there is no other way.

Xtant's policies and procedures are designed, in the event of a problem, to minimize the amount of your "down-time" and inconvenience. It is our commitment that the product will be at our facility for no more than four (4) days. Please consider weekends or holidays (which may fall within the time period) when estimating the return date of serviced product.

For technical assistance and information regarding products and/or installation, please contact Xtant's Customer Service Department from 8:00 am to 5:00 pm MST- Monday thru Friday at:

**PHONE:** (602) 431 8686  
**FAX:** (602) 431 8600  
**U.S.A. TOLL FREE:** (888) 449 8268





## LIMITED U.S.A. WARRANTY

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Xtant Technologies (Xtant) warrants its products to be free from defects in materials and workmanship under normal use and service when the unit is installed by an Authorized Xtant Dealer as follows: electronics (4) four years from original purchase date; speakers/subwoofers (3) three years from original purchase date. Non-Authorized Dealer installed products carry a one (1) year parts and labor limited warranty. The extent and conditions of Xtant's Limited Warranty are as follows:

1. Authorized Xtant Dealer Installed Products: Xtant will repair at no charge, to the original purchaser, any unit which Xtant's examination discloses to be defective and under warranty, provided the defect occurs within the warranty period and the product is returned immediately to Xtant. This warranty is not transferable.

2. Non-Authorized Xtant Dealer Installed Products: Xtant will repair at no charge, to the original purchaser, any unit which Xtant's examination discloses to be defective and under warranty, provided the defect occurs within one (1) year from the date of purchase and the product is returned immediately to Xtant. This warranty is not transferable.

**3. The date of purchase and proof of Authorized Dealer Installation of an Xtant product must be established by an original (or copy of the original) sales receipt which must accompany the article being returned for warranty work.**

4. This warranty shall NOT apply to any Xtant unit found to have the original factory serial number removed or defaced. All products received (by Xtant) for in warranty or out of warranty repair, with their original serial numbers removed or defaced, will NOT be repaired and will be returned to sender, freight collect.

5. The provisions of this warranty shall not apply to any Xtant unit used for a purpose for which it is not designed, which has been repaired or altered in any way, or which has been connected, installed, or adjusted other than in accordance with the instructions furnished in Xtant's owner's manual. Nor shall this warranty apply to any part which has been subject to misuse, neglect, or accident.

6. Xtant does not authorize any other persons to assume any other liability in connection with its products. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY XTANT APPLICABLE TO ITS PRODUCTS. ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO XTANT'S AMPLIFIERS AND OR ACCESSORIES IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. XTANT SHALL NOT BE LIABLE FOR THE INCIDENTAL, CONSEQUENTIAL, OR COMMERCIAL DAMAGES RESULTING FROM THE BREACH OF THIS WRITTEN WARRANTY. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts; so the above limitations or exclusions may not apply to you.

7. Your unit will be serviced on an in-warranty basis within the warranty period for the correction of warranted defects. If improper operation of your Xtant product should occur, contact your Authorized Xtant Dealer for assistance with the return and factory repair of your Xtant product. If an Authorized Xtant Dealer is not available, please contact **Xtant's Customer Service Department for assistance.**



**ELECTRONICS**  
Xtant Technologies  
7676 South 46th Street  
Phoenix, Arizona 85040  
888-449-8268

**SPEAKERS**  
Xtant Technologies  
805 Woodman Ave.  
Winslow, IL 61089  
800-556-2888

**TO RETURN XTANT PRODUCTS OUT OF WARRANTY:** Contact Xtant's Warranty Department at (602) 431 8686 from 8:00 am to 5:00 pm (MST) for a Return Authorization Number. Return the unit, postage prepaid, in the original protective carton. Please include a description of the problem and, if desired, a request for an estimate of repair costs. Unless a request for an estimate is included, the unit will be repaired as necessary. Repaired unit will be returned with an itemized statement, C.O.D. certified or Visa/MC. Xtant provides a 90 day warranty on all repairs serviced as non-warranty units.



# OWNER'S INSTALLATION LOG

Upon installation of your mobile audio sound system, your Authorized Xtant Select Dealer will complete this log. Keep this owners manual with your vehicle as a reference for all amplifier settings.

**OWNERS NAME:** \_\_\_\_\_

**VEHICLE:** MAKE/MODEL: \_\_\_\_\_ YEAR: \_\_\_\_\_

**XTANT AMPLIFIER SERIAL NO.** \_\_\_\_\_

### INPUT SENSITIVITY JUMPER (CIRCLE SETTING)

-20 dB (x .1)   -10 dB (x .3)   0 dB (x 1)   +10 dB (x 3)   +20 dB (x 10)

### OUTPUT GAIN ADJUSTMENT

(DRAW ARROW POSITION)



### I N S T A L L E D   A C C E S S O R Y   M O D U L E S

#### AMPLIFIER PORTS

PQM 1	YES	NO
CM 24X	YES	NO
LFQ 45	YES	NO
CM 12 H	YES	NO
CM 12 L	YES	NO
RM 4	YES	NO
RM 8	YES	NO
RM 12	YES	NO
RM 16	YES	NO

#### RCA LINE OUTPUT PORT

N/A		
N/A		
LFQ 45	YES	NO
CM 12 H	YES	NO
CM 12 L	YES	NO
N/A		
N/A		
N/A		
N/A		

**XTANT SELECT DEALER** \_\_\_\_\_

**PHONE:** \_\_\_\_\_

**INSTALLATION SPECIALIST:** \_\_\_\_\_

**DATE INSTALLED:** \_\_\_\_\_

