PA

Models:
PA2X10
PA2X10BT
PA2X12
PA2X12BT

OWNER'S MANUAL

Congratulations on the purchase of your Kustom PA System

These models draw on decades of electronic design and manufacturing experience at Kustom. This model was built from the ground up to offer useful features, high signal-to-noise ratio, and reliable performance. Inside this manual, you'll find valuable information about your product's controls and specifications. Being familiar with its features will help you effectively use your Kustom product. We wish you many years of enjoyment with your Kustom PA System.

Caution:
This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following
measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that
to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

MPE Reminding
To satisfy FCC / IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de facon à ce que la population ne puisse y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l' antenne. La FCC des éltats-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son functionnement.

IMPORTANT SAFETY INSTRUCTIONS

Danger
Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably to noise induced hearing loss but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

DURATION PER DAY (HOURS)	8	6	4	3	2	1
SOUND LEVEL (dB)	90	93	95	97	100	103

According to OSHA, any exposure in the above permissible limits could result in some hearing loss. Earplugs or protectors in the ear canal or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss. If exposure in excess of the limits as put forth above, to insure against potentially harmful exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of inducing high sound pressure levels, such as this amplification system, be protected by hearing protectors while this unit is in operation.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: *TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE CHASSIS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.*

AVIS: RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR.

THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF NON-INSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.

THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE UNIT.

APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan

Apparatet må tilkoples jordet stikkontakt

Apparaten skall anslutas till jordat uttag

Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be kept for future reference.
3. Read and understand all warnings listed on the operating instructions.
4. Follow all operating instructions to operate this product.
5. This product should not be used near water, i.e. Bathtub, sink, swimming pool, wet basement, etc.
6. Only use dry cloth to clean this product.
7. Do not block any ventilation openings, It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
8. Do not install this product near any heat sources; such as, radiators, heat registers, stove or other apparatus (including heat producing amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety if the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord being walked on or pinched, particularly at Plugs, convenience receptacles and the point where they exit from the apparatus. Do not break the ground pin of the power supply cord.
11. Only use attachments specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation ports or any other openings.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way; such as, power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
16. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
17. When the MAINS plug, or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. Protective Ground Terminal: The apparatus shall be connected to an AC main socket with a protective earth ground connection.

IMPORTANT SAFETY INSTRUCTIONS

FRENCH

Danger
L‘exposition a des niveaux eleves de bruit peut provoquer une perte permanente de l’audition, Chaque organisme humain reagit differemment quant a la perte de l’audition, mais quasiment tout le monde subit une diminution de I’acuite auditive lors d’une exposition suffisamment longue au bruit intense. Les autorites competentes en reglementation de bruit ont defini les expositions tolerees aux niveaux de bruits:

DURATION PER DAY (HOURS)	8	6	4	3	2	1
SOUND LEVEL (dB)	90	93	95	97	100	103

Selon les autorites, toute exposition dans les limites citees ci-dessus,peuvent provoquer certaines pertes d’audition. Des bouchons ou protections dans l’appareil auditif ou sur l’oreille doivent etre portes lors de l’utilisation de ce systeme d’amplification afin de prevenir le risque de perte permanente de l’audition, Dans le cas d’expositions superieures aux limites precitees il est recommande, afin de se premunir contre les expositions aux pressions acoustiques eIevees potentiellement dangeureuses, aux personnes exposees aux equipements capables de delivrer de telles puissances, tels ce systeme d’amplification en fonctionnement, de proteger l’appareil auditif.

ATTENTION
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR.

ATTENTION: AFIN DE LIMITER LE RISQUE DE CHOC ELECTRIQUE, NE PAS ENLEVER LE CHASSIS. NE CONTIENT PAS DE PIECES POUVANT ETRE REPAREE PAR L'UTILISATEUR. CONFIER LE SERVICE APRES-VENTE AUX REPARATEURS AGREES.

CE SYMBOLE A POUR BUT D'AVERTIR L'UTILISATEUR DE LA PRESENCE DE VOLTAGE DANGEREUX NON-ISOLE A L'INTERIEUR DE CE PRODUIT QUI PEUT ETRE DE PUISSANCE SUFFISAMMENT IMPORTANTE POUR PROVOQUER UN CHOC ELECTRIQUE AUX PERSONNES.

CE SYMBOLE A POUR BUT D'AVERTIR L'UTILISATEUR DE LA PRESENCE D'INSTRUCTIONS D'UTILISATION ET DE MAINTENANCE DANS LES DOCUMENTS FOURNIS AVEC CE PRODUIT.

AFIN DE REDUIRE LES RISQUÉ D'INCENDIE ET DE DECHARGE ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan

Apparatet må tilkoples jordet stikkontakt

Apparaten skall anslutas till jordat uttag

Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

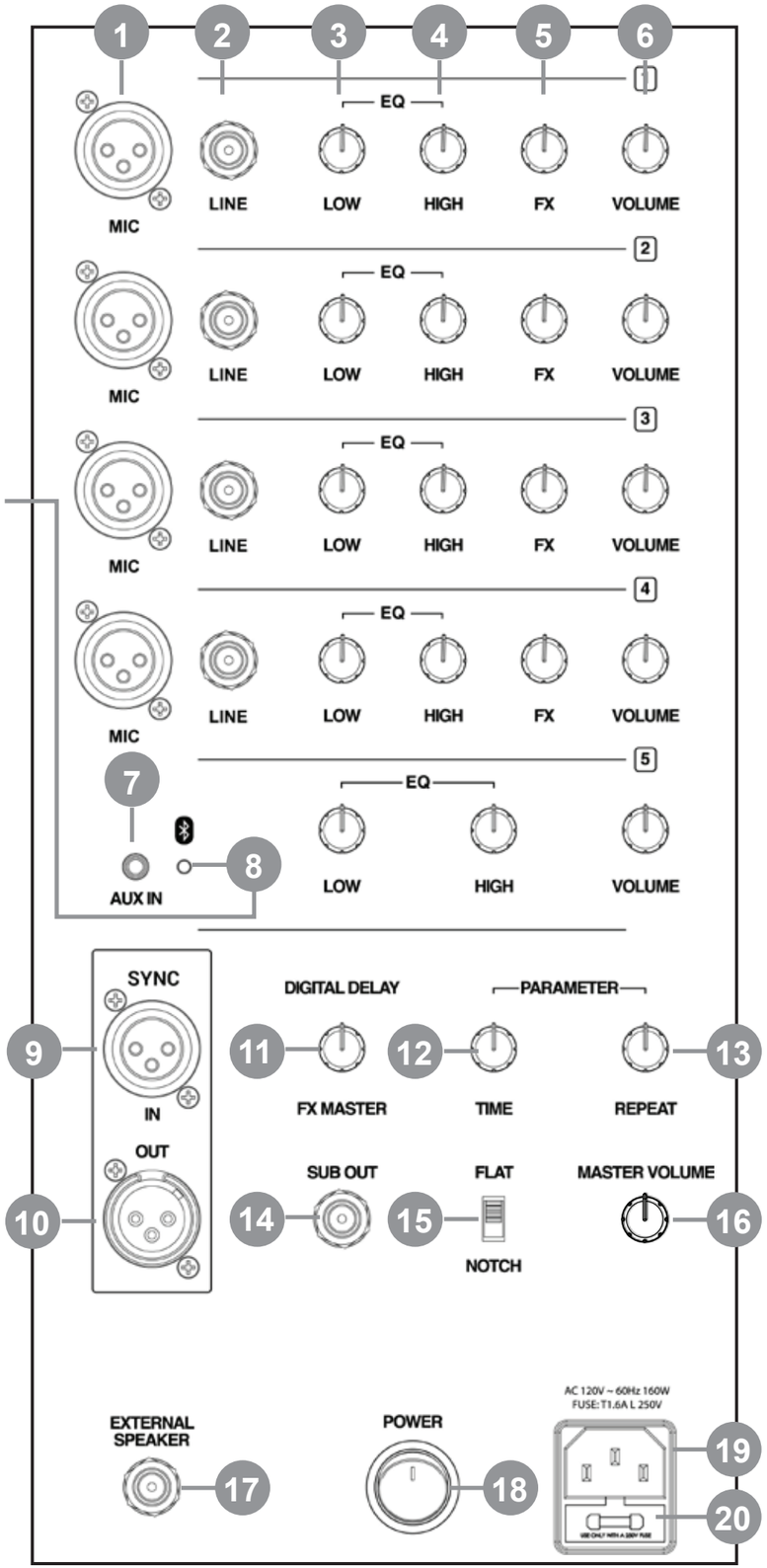
1. Lire avec attention toutes les recommandations et précautions d'emploi avant d'utiliser ce produit.
2. Toutes les recommandations et précautions d'emploi doivent être conservées afin de pouvoir s'y reporter si nécessaire.
3. Lire et comprendre tous les avertissements énumérés dans les précautions d'emploi.
4. Suivre toutes les précautions d'emploi pour utiliser ce produit.
5. Ce produit ne doit pas être utilisé près d'eau, comme par exemple baignoires, éviers, piscine, sous-sol humides ... Etc.
6. Utiliser exclusivement un chiffon sec pour nettoyer ce produit.
7. Ne bloquér aucune ouverture de ventilation. Ne pas placer le produit tout contre un mur ou dans une enceinte fernée, cela gênerait le flux d'air nécessaire au refroidissement.
8. Ne pas placer le produit près de toute source de chaeur telle que radiateurs, arrivées d'air chaud, fourneaux ou autres appareils générant de la chaleur (incluant les amplificateurs producteurs de chaleur) .
9. Ne pas négliger la sécurité que procure un branchement polarisé ou avec raccordement à la terre, Un branchement polarisé comprend deux fiches dont l'une est plus large que l'autre. Un branchement à la terre comprend deux fiches plus une troisième reliée à la terre. Si la fiche secteur fournie ne s'insert pas dans votre prise de courant. consulter un 'électricien afin de remplacer votre prise obsolète.
10. Protéger le cordon d'alimentation de tout écrasement ou pincement, particulièrement au niveau des fiches, des réceptacles utilisés et à l'endroit de sortie de l'appareil. Ne pas casser la fiche de terre du cordon d'alimentation.
11. Utiliser uniquement les accessoires spécifiés par le constructeur.
12. Utiliser uniquement avec le chariot de transport, le support, le trépied, la console ou la table spécifiés par le constructeur ou vendus avec l'appareil. Lors de l'utilisation d'un chariot, bouger avec précaution l'ensemble chariotlappareil afin d'éviter les dommages d'un renversement.
13. Débrancher cet appareil lors d'orages ou s'il n'est pas utilisé pendant une longue période.
14. Des précautions doivent être prises afin qu'aucun objet ne tombe et qu'aucun liquide ne se répande à l'intérieur de l'appareil par les orifics de ventilation ou n'importe quelle autre ouverture.
15. Pour toutes interventions techniques s'adresser à un technicien qualifié.L'intervention technique est nécessaire lorsque l'appareil a été endommagé de n'importe quelle façon, comme par exemple si le cordon secteur ou sa fiche sont détériorés,si du liquide a coulé ou si des objets sont tombés à l'intérieur de l'apparei1,si l'appareil a été exposé à la pluie ou à l'humidité, s'il ne fonctionne pas normalement ou s'il est tombé.
16. ATTENTI0N:Pour réduire le risque d'incendie ou de choc electrique ne pas exposer l'appareil à la pluie ou à l'humidité.
17. Quand La prise MAINS, au coupler, est utilisé pour la source d'alimentation êlectrique. Il est conseillê de garder cette prise facilement accessible.
18. Borne de terre de protection: L'appareil doit être connecté à un connecteur AC principale avec un raccordement à la terre de protection.

CONTROLS & FEATURES OVERVIEW

BLUETOOTH PAIRING INSTRUCTIONS:
To connect your Bluetooth device to the Kustom Bluetooth receiver for the first time, navigate to the Bluetooth settings menu on you Bluetooth enabled device. Ensure that Bluetooth is enabled and your Kustom product is powered on. Perform a scan for available devices. Select and pair to the Kustom product in the list of available devices. Enter 0000 for the passcode if prompted. Once paired, a connection can be established. Depending on the device, future connections may be established automatically when a previously paired Bluetooth device is in range of the Kustom Bluetooth receiver.

The Bluetooth receiver in Kustom Bluetooth products is an A2DP device and will work with other A2DP compatible Bluetooth devices including most smart phones. Additional hardware and/or driver software may be required for computers with integrated Bluetooth adaptors due to a lack of support for A2DP devices by some operating systems.

A2DP protocol only allows for one to one device connections. Therefore, only one Bluetooth device can be connected to a Kustom Bluetooth product at one time. Similarly, a Bluetooth device can only be connected to one Kustom Bluetooth product at one time. Plugging a 1/8" connector into the AUX jack disables the Kustom Bluetooth receiver.



1. MIC Inputs: Connect dynamic and condenser microphones here. These inputs are designed for low-impedance mics and equipment that has a mic-level, balanced output. 15-volt phantom power is supplied to all MIC Inputs

2. LINE Inputs: These ¼-inch inputs may be used to connect high-impedance microphones,keyboards, drum modules and other audio devices.

3. LOW: Adjusts bass frequencies (@100Hz) per channel. Turn clockwise to boost, counter-clockwise to cut.

4. HIGH: Adjusts treble frequencies (@10kHz) per channel. Turn clockwise to boost, counter-clockwise to cut.

5. FX: Controls the level of Digital Delay heard on each chanel.

6. VOLUME: Adjusts the volume of each channel and is used to control overall volume balance between channels.

7. AUX IN: Use this stereo input to connect an audio device such as an MP3 player, phone, or laptop.
Note: Right and Left channels are summed to mono through this input.

8. Bluetooth LED (BT Models Only): Lights when a Bluetooth device is successfully paired to PA BT unit.

SYNC CIRCUIT: Use to expand your system by linking multiple units.
The shield connection (pin 1) on SYNC jacks do not connect to chassis ground. Ground connection is lifted.

9. SYNC IN: Connect to SYNC OUT of any PA Unit using standard XLR (microphone) cable.
Channels of linked unit will be summed and heard through this unit. Turn down unused channels to reduce noise.
MASTER VOLUME controls the overall level of mix heard per unit but does not affect the volume of linked units.

10. SYNC OUT: Connect to SYNC IN of any PA Unit using standard XLR (microphone) cable.
Channels will be summed and heard through linked unit. Use the channel volume controls to adjust mix (Turn down unused channels). This jack may also be connected to a power amp's BALANCED LINE INPUT.

11. DIGITAL DELAY FX MASTER: Controls overall level of delay effect available to all channels.

12. TIME: Controls the length of time between each delay repeat

13. REPEAT: Controls the number of repeats heard when using delay effect

14. Sub Out: Use this jack for connecting a powered subwoofer. Use a shielded instrument cable to send line-level, unbalanced signal crossed over at 150Hz. When jack is disconnected, crossover is bypassed and unit operates at full-range. When possible, plug PA System and Subwoofer AC cables into same outlet or power strip to avoid ground loop hum.

15. VOICE/MUSIC Switch: Selects global EQ curve tailored for VOICE or MUSIC applications.
VOICE=Flat. MUSIC=800Hz Notch

16. MASTER VOLUME: Controls the overall volume of all channels including audio connected to SYNC IN.
Does not affect SYNC OUT level.

17. EXTERNAL SPEAKER: Connect PA2X10EX or PA2X12EX passive speaker here.

18. POWER: This switch activates power to the unit. Switch is lit in the "ON" position.

19. AC Power Cord Receptacle: Insert the AC cord included with your PA unit here. Insert cord firmly into AC Power Cord Receptacle. Replace the AC cord if protective jacket or ground pin are damaged or removed.

20. Fuse: The fuse is located in a fuse tray just below the receptacle. Replace only with the same type and size. For your convenience, a spare fuse is located inside the fuse tray toward the front. To replace fuse, remove AC power cord. Remove fuse tray by pulling the tab located above the fuse symbol away from the receptacle.

PA2X10 & PA2X10BT Specifications		
Output Power 1%	1 x 50W	1 x 8 ohm load
Accepted Inputs	CH 1-4	Mic XLR Balanced, Line Level 1/4" Unbalanced
	Aux	1/8" Line Level or Bluetooth Device (BT models)
Frequency Response	20Hz-20kHz	Actual Response is tailored to speaker cabinet for accurate acoustical response
Hum & Noise	-46dB	Residual Noise, all level controls 0% (minimum)
	-37dB	Nominal System Noise, all level controls at 50%
System Gain/Speaker Output (measurement made at 1kHz)	+49dB	Mic to Speaker Output (CH1 - CH4)
	+35dB	Line to Speaker Output (CH1 - CH4)
	+25dB	Aux to Speaker Output
Channel EQ (high, low)		Treble-10kHz, Bass-100Hz
SYNC (IN and OUT)		Both Jacks accept a balanced input and send a pre-master volume output mix of channels. Recommended use: Linking two PA2X10 or PA2X10BT units.
Subwoofer Out	Line Out	20Hz-150Hz
Phantom Power	+15 V	Mic Inputs (CH 1-4)
Power Requirements	USA /Canada	120VAC/60Hz, 100W nominal/160W with ext cabinet
	Europe	230VAC/50Hz, 100W nominal/160W with ext cabinet
	UK	230VAC/50Hz, 100W nominal/160W with ext cabinet
	Australia	240VAC/50Hz, 100W nominal/160W with ext cabinet
	Japan	100VAC/50-60Hz, 100W nominal/160W with ext cabinet
Speaker	10"	50W 8 ohm
Horn	5 3/4" piezo horn	
Power Capacity	50W	RMS 100W with extension cabinet
Frequency Response	60Hz-20kHz	Full Range (subwoofer jack not used)
	150Hz-20kHz	Crossover Active (1/4" mono plug in subwoofer jack)
Nominal Impedance	8 ohms	4 ohms with extension cabinet
Bluetooth Module Features		Bluetooth 3.0+EDR compliant. Typical +2dBm Class 2 output power. Audio DAC:94dB SNR. A2DP profile support
PA2X10 & PA2X10BT	cm / kg	47.4 H x 31 W x 29.0 D /13.1kg
Dimensions & Weight	Inches / Pounds	18.66" H x 12.2" W x 11.77" D / 28.9 lbs
PA2X10EX	cm / kg	47.4 H x 31 W x 29.0 D /10 kg
Dimensions & Weight	Inches / Pounds	18.66" H x 12.2" W x 11.77" D / 22 lbs

PA2X12 & PA2X12BT Specifications		
Output Power 1%	1 x 50W	1 x 8 ohm load
	CH 1-4	Mic XLR Balanced, Line Level 1/4" Unbalanced
	Aux	1/8" Line Level or Bluetooth Device (BT models)
Frequency Response	20Hz-20kHz	Actual Response is tailored to speaker cabinet for accurate acoustical response
Hum & Noise	-46dB	Residual Noise, all level controls 0% (minimum)
	-37dB	Nominal System Noise, all level controls at 50%
System Gain/Speaker Output (measurement made at 1kHz)	+49dB	Mic to Speaker Output (CH1 - CH4)
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Channel EQ (high, low)		Treble-10kHz, Bass-100Hz
SYNC (IN and OUT)		Both Jacks accept a balanced input and send a pre-master volume output mix of channels. Recommended use: Linking two PA2X12 or PA2X12BT units.
Subwoofer Out	Line Out	20Hz-150Hz
Phantom Power	+15 V	Mic Inputs (CH 1-4)
Power Requirements	USA /Canada	120VAC/60Hz, 100W nominal/160W with ext cabinet
	Europe	230VAC/50Hz, 100W nominal/160W with ext cabinet
	UK	230VAC/50Hz, 100W nominal/160W with ext cabinet
	Australia	240VAC/50Hz, 100W nominal/160W with ext cabinet
	Japan	100VAC/50-60Hz, 100W nominal/160W with ext cabinet
Speaker	12"	50W 8 ohm
Horn	5 3/4" piezo horn	
Power Capacity	50W	RMS 100W with extension cabinet
Frequency Response	60Hz-20kHz	Full Range (subwoofer jack not used)
	150Hz-20kHz	Crossover Active (1/4" mono plug in subwoofer jack)
Nominal Impedance	8 ohms	4 ohms with extension cabinet
Bluetooth Module Features		Bluetooth 3.0+EDR compliant. Typical +2dBm Class 2 output power. Audio DAC:94dB SNR. A2DP profile support
PA2X12 & PA2X12BT	cm/kg	54.9 H x 39.1 W x 39.5 D / 18.7kg
Dimensions & Weight	Inches/Pounds	21.61" H x 15.39" W x 15.55" D / 41.2lbs
PA2X12EX	cm/kg	54.9 H x 39.1 W x 39.5 D / 15.1 kg
Dimensions & Weight	Inches/Pounds	21.61" H x 15.39" W x 15.55" D / 33.3 lbs

Owner's Manual for MODELS:
PA2X10, PA2X10BT, PA2X12, PA2X12BT

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