
MANUAL
GRAVITY
MK2
5G-900
XETEC
XETEC
designgroup

XETEC GRAVITY MK2 SERIES 5G-900

Congratulations for buying this **XETEC** product and thank you for your confidence! With this **XETEC** amplifier you have purchased an innovative and professional high-end product, which will enable you to enjoy your music on a very high quality level for many years. We have especially focused on electronic as well as product design to give you a product that will accompany you for many years, as our products are always one step ahead and will still be modern for many years. **XETEC** products represent the experience our engineers have made through many years assisted by car audio magazines as well as professional installers.

Please read these instructions very carefully, to avoid unnecessary trouble and defects. In case of trouble, please contact your local dealer or check our website www.xetec.de for troubleshooting. There we also offer up-to-date hints and technical support for you.

The **XETEC 5G-900** is a state-of-the-art 5-channel car audio amplifier, especially developed for top quality speaker systems and subwoofers. A perfect choice are the **XETEC** Component systems and subwoofers.

You can also run each 2 of the 4 satellite channels in bridged mode to gain more than twice the output power, in order to drive midbasses or high power component systems.

The versatility and many adjustment options make the **5G-900** an allround genius for car music reproduction.

PROPERTIES

- High efficiency Class D Digital subwoofer amplifier
- Four HPAA (High Precision Analog Amplifier) in satellite channels
- BLC (Bass Level Controller)
- Input Select (6-, 4- or 2-channel input modes)
- Independent low- and highpass filters (bandpass possible)
- Bridgeable satellite channels
- Optional carEQ module (car -specific parametric equalizer module) (see chapter 5. „carEQ ")
- Protection circuit: Overload, Short-circuit, DC, Overheat

SAFETY

- **Before you make any connection, the battery must be disconnected!**
- **A main fuse must be installed into the +12 V wire within the first 12" from the + terminal of the battery (insurance regulation!).**
- **Please note that a minimum speaker impedance of 2 Ohms must be maintained. Do not connect speakers with lower impedance in normal as well as in bridged mode!**
- **Make sure that you do not use defective speakers and subwoofers. They can cause damage to your amplifier!**

The fuses inside the amplifier only protects the device itself, not the battery and the car!

IMPORTANT NOTICE: STABILITY OF AMPLIFIERS

Normal operation:
Every amplifier is only capable of driving loads (speakers) up to a certain limit, which is set either by the protection circuits or the maximum power output. **XETEC** amplifiers accept loads down to 2 Ohms in normal operation.

Bridged mode:
In bridged mode each two channels of the amplifier are driving the same load, the acceptable impedance for each channel is also divided by two!

That means:
A normal amplifier „sees" 4 Ohms as 4 Ohms. In a bridged amplifier, each amplifier „sees" 2 Ohms only!!! That´s why in bridged mode always 4 Ohms must be maintained although the amplifier might be 2-Ohms stable.

CAUTION

This product is capable of conducting very high sound pressure levels, and can thus be harmful to your health. Prolonged exposure to high volume levels can cause hearing loss! Please use restraint on the volume control. XETEC wants you to enjoy your amplifier for a long time to come, and we do not take responsibility for hearing loss nor other health problems.

0. INSTALLATION

For safety reasons, the amplifier has to be mounted properly and fixed to the car body. Please fix the device using the screws that come with your product. Be careful when drilling holes, there might be wires, fuel lines or the gas tank behind a wall! Never drill holes when you do not know what´s behind. Never install signal wires close to power cables to avoid hum and alternator noise is being induced.

1. CONNECTIONS

Before you make any connections, always disconnect the battery!

1.1 First of all, connect the RCA cables coming from the radio/headunit to the respective inputs of your amplifier. Always run signal cables in a distance to power cables and the vehicle´s factory wires to avoid induction of noise.
1.2 Now the speaker wires must be connected to the respective speaker terminals. Please make sure to use speakers with the correct impedance! Also make sure to connect all speakers with correct polarity to avoid phase problems which can spoil the sound of the whole system.
1.3 Connect the BLC to the amplifier.
1.4 Next step is the ground connection. Check for a good grounding point using your vehicle´s chassis. Make sure that this point has good electrical contact! Some parts of the chassis might only be glued and have no contact to battery (-). Run all ground cables of the system to this point to avoid alternator whine and other noise.
1.5 As the next connection the +12 V cable has to be connected to the (+) terminal of the battery. Always be careful not to run this cable around sharp edges, the insulation might be damaged. For holes always use grommets!

Always use an in-line fuse in the +12 V power cable in max. 12" from the battery´s + terminal (value must meet the current requirements of the whole sound system, minimum value is 60 A).

1.6 The last connection is the remote wire. The headunit must always be turned off during this connection, as it might be damaged when remote output is shorted to ground!

Now you can reconnect the battery and insert the main fuse into the power cable fuse holder.

CAUTION: Both, the +12 V and the ground cable, must have sufficient diameter!

XETEC proposes the following minimum gauges:

Total output power of the system:

Up to 100 W:	6 mm^2	Up to 1000 W:	35 mm^2
Up to 250 W:	8 mm^2	Up to 1200 W:	40 mm^2
Up to 500 W:	10 mm^2	More than1200 W:	50 mm^2
Up to 750 W:	25 mm^2		

Weaker Cables will reduce the performance of your system significantly, and may cause damage to your amplifiers. Weak cables also will heat-up!

CAUTION

Always replace fuses with same value. Higher values may cause damage to your amplifier, battery or car!

2. FIRST POWER-ON

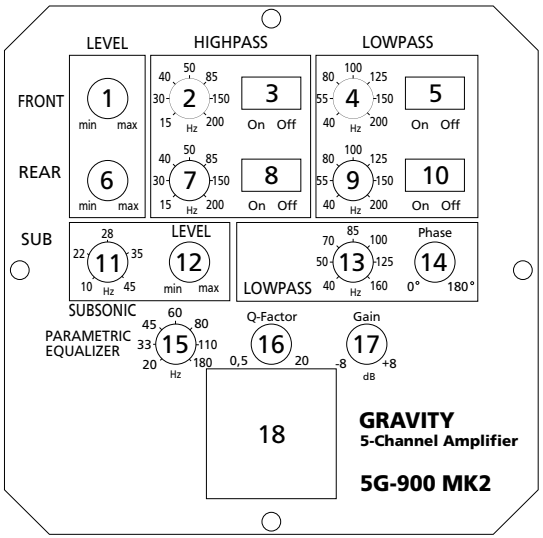
2.1 Adjust all level controls to minimum.
2.2 Turn on the radio at low volume.
2.3 Increase the volume and adjust the front speaker's volume.
2.4 Now adjust the level ratio between front and rear speakers and subwoofer (BLC).

XETEC recommends the following crossover frequencies:

16 cm front speaker: Highpass 80-100 Hz	16 cm rear speaker: Highpass 100-120 Hz
13 cm front speaker Highpass 100-140 Hz	16 cm rear speaker: Highpass 120-150 Hz
13 cm front speaker: Highpass 120-200 Hz	10 cm rear speaker: Highpass 150-200 Hz

16 cm midbass: Bandpass 80/150 Hz (= Highpass 80 Hz + Lowpass 150 Hz), Composystems then are run with Highpass 150-180 Hz!

Subwoofer: Lowpass 70-100 Hz, Subsonic 20-35 Hz

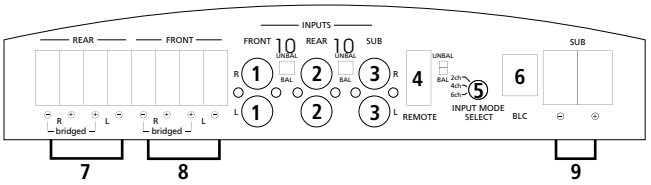


3. CONTROLS

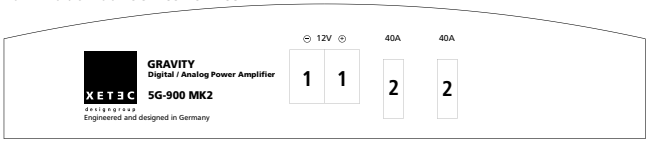
All controls are accessible under the aluminium top cover. For adjustments, remove the top cover using the hexa screwdriver that came with your product.

1 Level front
2 Front highpass
3 Bypass for front highpass
4 Front lowpass
5 Bypass for front lowpass
6 Level rear
7 Rear Highpass
8 Bypass for rear highpass
9 Rear lowpass
10 Bypass for rear lowpass
11 Subsonic frequency
12 Subsonic on/off
13 Subwoofer lowpass frequency
14 Subwoofer phase shift 0°-180°
15 Parametric EQ Center frequency
16 Parametric EQ Q factor (bandwidth)
17 Parametric EQ Gain
18 Logo / Diagnostic LED: LED off: Amplifier is off; LED Blue: Amplifier is ON, and working correctly.
LED RED: Protection activated.
See #6, troubleshooting

4. CONNECTORS



1 RCA line inputs front (left and right channels)
2 RCA line inputs rear (left and right channels)
3 RCA subwoofer inputs (left and right channels)
4 Remote terminal
5 Input mode selector
6 BLC connector
7 Rear speakers connector
8 Front speakers connector
9 Subwoofer connector
10 Bal/unbal selktor switch



1 +12 V and ground power input
2 Fuses (2x40 A)

Bal/unbal. selector switches:

All GRAVITY MK2 series amplifiers are equipped with selector switches for balanced or unbalanced input mode operation, in order to prevent noise induction by ground loops.
Alternator whine and other noise induction is mostly caused by improper ground connections of the components like radio, equalizer, processor, amplifier etc.
Unless all of them are grounded in **one and the same** grounding point on the car chassis, noise may occur due to different ground potentials.
There is only one way to avoid these effects: Selection between balanced or unbalanced input mode of the amplifiers.

Usage:

The amplifiers are factory-set to "balanced". If noise occurs, all switches should be set to „unbal." For noise suppression, it is also allowed to set a number of switches to "bal." And others to „unbal.", in order to find the perfect combination.
In case the noise problem still cannot be solved 100%, the ground wiring must be revised and optimised.

5. carEQ (optional accessory)

For **XETEC** Gravity series models 4G-300, 4G-600 and 5G-900 the optional **carEQ** equalizer module is available as an accessory. The **carEQ** equalizer is engineered to optimise your sound system by compensating for the vehicle´s acoustical problems. Every car model has it´s characteristic acoustical problems, caused by resonances, reflections and peaks generated by the shape of the interior, regardless which kind of speakers are used.

These individual curves have been recorded by **XETEC** engineers and programmed into the **carEQ** module, which exactly reverses these errors for compensation. The result is an enhanced sound quality without the vehicle´s acoustical errors.

Actually not even the best loudspeakers can reproduce music in a car as it is, since the acoustical errors are always added.

The **carEQ** module can be purchased as an accessory. A bypass module is factory-installed and can be replaced by the **carEQ** module. For installation of the **carEQ** equalizer, the scale plate under the top cover has to be removed. **Before you open the amplifier to exchange the modules, make sure that it is switched off!** Damage will occur to your speakers and amplifier, if the module is exchanged during operation!!!

The **carEQ** module contains up to 10 independent equalizer bands for the front and rear channels as an error correction for your specific car model. Ask your local dealer for a list of car models or get it on our website **www.xetec.de**

APPLIED TECHNOLOGIES

- HPAA © by **XETEC** design group GmbH: „High Precision Analogue Amplifier", symmetrical State-of-the-Art power amplifier
- X-SMPS © by **XETEC** design group GmbH: „x-Switched-Mode-Power-Supply", high efficiency power supply
- VCVS-Filter © by **XETEC** design group GmbH: „Voltage Controlled Voltage Source", filters for the crossover networks
- X-protect © by **XETEC** design group GmbH: Highly sensitive protection circuits
- carEQ © by **XETEC** design group GmbH: Car-acoustical error correction circuit (for specific car model)

TECHNICAL DATA

XETEC 5G-900 MK2

RMS Output power @ 4 Ohms:	4x100 W
RMS Output power @ 4 Ohms:	2x200 W in bridged mode
RMS Output power @ 2 Ohms:	4x130 W
Peak output power:	1200 W total
Max input Current (@ 13,8 V):	85 A
Idle current (no signal):	1,4 A
Max Current (@ 13,8 V):	100 A
Fuse:	2x40 A
Total Harmonic Distortion (THD):	<0,02%
SNR:	>92 dB(A)
Freq. Response (bypass mode):	5 Hz-30.000 Hz (in bypass mode)
Damping Factor:	>200 (50 Hz)
Stability:	>2 Ohm, (>4 Ohm in bridged mode!)
Input Sensitivity:	250 mV-6 V
Crossover frequencies:	40-200 Hz lowpass, 15-200 Hz highpass, 10-50 Hz subsonic
Ground lift (balanced / unbalanced)	
Subwoofer gain adjust with Bass level controller	
Warranty:	1 year (2 years in EU)

6. TROUBLESHOOTING

1. Power indicator LED in top plate is not lit
   - Main fuse or fuse in amplifier blown?
   - Remote wire properly connected?
     Is there remote voltage (12 V)?
   - Amplifier overheated?

2. Power indicator LED in top plate lights RED
   - Protection active. Check the speakers and speaker wires for short-circuit!
   - Battery voltage low (<10,2 V)?
   - DC on one of the speaker outputs?
   - Overload.

3. Distortions at medium level
   - Please check the speaker connections for short-circuits.
   - Are the speakers OK?
   - Radio volume turned up too high.
     Better turn up the amplifier's level controls.

4. Alternator whine and similar noise
   - Bad ground connections?
   - Use ONE ground contact only!
   - RCA cables run too close to power cables?

In case of further trouble, please ask your local **XETEC** dealer for support.

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