

# Introduction to G-Force

*Revision D, October 2021 for Software Version 4.0.*

**New controls are described first and denoted by an asterisk (\*) before their names & descriptions.**

Hello, and thanks for your interest in Omnia.11 G-Force!

The Omnia.11 G-Force dynamics engine is the result of several years of intense and continued Research and Development by Frank Foti and Cornelius Gould with the help of Team Omnia including Mark Manolio, Rob Dye and Frank Foti's boss, his pet cat, Silvio Dante - who provided the funding for the project and the name for the newest clipper released in version 4.0!

Seriously though, The Omnia Team is proud of this technical achievement and its continued evolution within our flagship audio processor! G-Force has shipped as the standard processing engine on all new Omnia.11 units since version 3.0 was released in 2016, and is available as an optional plugin on earlier Omnia.11 units upgraded to v3.0 software or higher. If you are still running the original "orange mode" processing engine, G-Force brings market-dominating sonic improvements to your unit, and represents tremendous value for a modest investment. Existing G-Force users will instantly benefit from Version 4.0's new "Silvio" clipper, along with reworked factory presets to take full advantage of this new design. Note that a G-Force demo mode, formerly available in versions 3.0 through 3.6 has been discontinued due to design incompatibilities.

A little background on G-Force is in order.

The overall goal of G-Force was to spread the intelligent processing engines to every stage of dynamics processing, including bass clipper management. It has always been Cornelius' goal to provide intelligence to dynamics processing so that complicated time constant operations could be performed and manipulated with just a small number of parameters for the end user.

Version 1.x of the Omnia.11 was the first step in this direction. Omnia.11 G-Force features dramatic improvements in this area, and the intelligence encompasses all aspects of dynamics processing -- up to and including the program adaptive bass clipper.

Since all of the dynamics processing sections feature internal intelligence, we are able to use the computer in the Omnia.11 to coordinate the local intelligence in each stage. This is done in such a way that their actions can be more faithful to the source content while simultaneously providing unparalleled source-to-source consistency.

One tremendous benefit that this computer management of the intelligent stages brings to the show is the new "Quick Tweak" tab. Early testers of G-Force found that the Quick Tweak section provided the controls they needed to get their station "dialed into the zone" within 20 minutes or so! This is a great improvement over the days of hunting through the large array of controls available to find that perfect combination of settings that brings your station to life.

During focus group discussions, potential end users liked to refer to the new quick start tab as the "PD Page",

where programmers with very little knowledge of audio processing are able to dial in the overall sound of the radio station with just 9 controls.

Of course, the advanced settings are all still there; just think of them as tools to “put the icing on the cake.”

The new intelligent limiter sections of G-Force are extremely powerful compared to Omnia.11 version 1.x. You can make adjustments that were absolutely unthinkable in 1.x due to new intelligent limiter sidechains as well as advanced intermod mitigation algorithms that allow the limiters to operate quickly and positively. They are able to control program peaks effectively and transparently for superior clipper protection. This means music with more punch, loudness, and clarity than before while providing the best on-air announcer vocal performance yet!

The limiter sections are so effective that the “Auto Sense” function, which was a key feature in version 1.x, is not needed (or desired) in Omnia.11 G-Force.

We feel confident that you will enjoy the sound quality of G-Force. In addition, we hope you will also appreciate its forgiving, effortless and positive reaction to user adjustments that will make getting your on-air signature sound fun again.

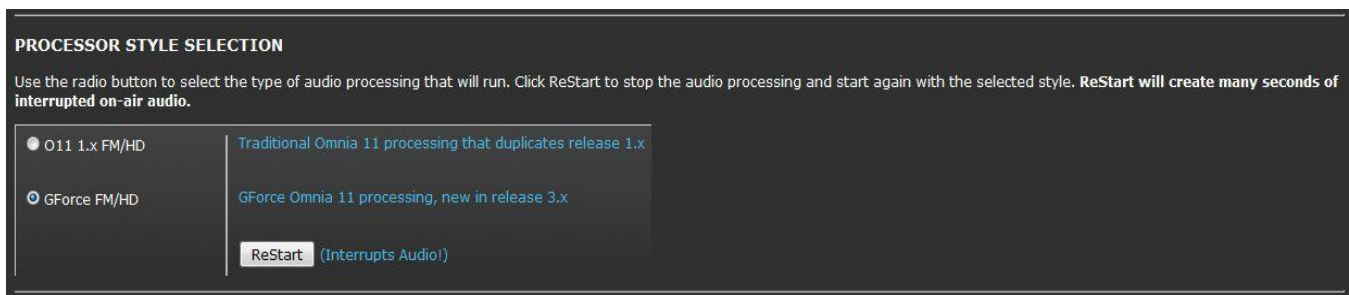
Now, get out there, and make some great audio!

## OPERATION

Ensure that the 11 is running in the blue G-Force mode. If not, navigate to the “PROCESSOR STYLE SELECTION” section in the Configuration page of the remote control web page interface.

To switch to G-Force mode, select the G-Force radio button and then click “ReStart”. **Note: The unit will reboot causing audio interruption.**

You can switch back to “traditional” (orange) mode at any time by selecting the O11 1.x (that is: v3.0 and higher running the 1.x algorithm) radio button followed by “ReStart”. **Note: The unit will reboot causing audio interruption.**



### *Omnia.11 G-Force Preset Selection*

Our suggested method for using G-Force for the first time is to listen to all of the presets while offline. Pick the ones that sound closest to what you want on-air. Then put the Omnia.11 G-Force on-air, listen to those candidate presets on your “trusted” radios, and decide on one to start with. A list with short descriptions of the factory presets can be found at the end of this document starting on Page 24.

**Note that presets taking full advantage of the new Silvio clipper in version 4.0 have an “SVO” suffix.**

## Quick Tweak

Once you've picked the winning preset on air, chances are that programmers will want to make some tweaks. The first step to the tuning process starts on the Quick Tweak tab (formerly Quick Setup). Do start here first, as Quick Tweak operates on a global level that touches many internal parameters not accessible by any of the other controls in the user interface.



*Quick Tweak Tab*

Tips for using the Quick Tweak controls to adjust a preset to match your desired sound:

- A. If preset is louder than desired but otherwise has the sound you desire, you have two choices: Preserve the texture of the preset and reduce loudness by lowering the “clipper drive” to taste, or create a more open texture for the given loudness of the preset by lowering the limiter drive which will reduce the “overall density”.
- B. Overall bass levels of a preset can be set using the “Bass” control. This will adjust many parameters simultaneously (including important but hidden ones) that govern the bass content of a given preset.
- C. The brightness characteristics of a preset are determined by the three brightness controls. These controls are somewhat interactive with each other and adjust many “under the hood” parameters that determine the high frequency personality of a preset.
- D. Similarly, the amount of midrange energy of a preset can be set with the new **mid** control (introduced in V3.5).
- E. The stereo sound stage can be manipulated using the Stereo Enhance control. Our stereo enhancer has also been updated, and to our ears, it captures the sound of the “Space EFX” plugin of the original Omnia classic. The effect is pleasing and the new stereo enhancer shuts itself off completely during mono content. The density control adjusts the speed of enhancement. This is helpful to sculpt the type of stereo sound field you will have when the effect is used.

With these ten “Quick Tweak” controls, most users should be able to “dial in” presets to suit their markets using this small collection of controls alone. More advanced users will find these controls to be very powerful as well because they interact with the existing controls in the advanced menus of the Omnia.11. We encourage you to revisit the Quick Tweak controls to “feel their effect” after making changes to more advanced settings elsewhere in the menu system.

When finished making adjustments, be sure to save your modified preset with a new name (you can’t overwrite the factory presets) using “Save Current As” in the Preset tab.

## Quick Tweak Control Descriptions

- **Clipper Drive:** Adjusts the “brute force” loudness level of the Omnia.11. Higher levels of clipper drive equal greater loudness, with the potential side-effect of greater overall distortion. Use carefully to avoid unnecessary listener fatigue. This should always be set as low as possible for the needed loudness.

Note: The clipper drive also influences the HD limiter drive (on HD equipped units) to maintain consistency of texture between the two paths. The HD Limiter drive control serves as an overall “offset” to the clipper drive level.

- **Limiter Drive:** Adjusts the overall drive level of the multiband limiter system. The effect of limiter drive in G-Force is VERY different from earlier Omnia.11 versions. The effect of greater amounts of limiter drive is that of more on-air density, and not necessarily that of greater loudness. Extremely high levels of limiter drive creates a “wall of sound” type of effect, but be careful. Such levels of drive can cause listener fatigue (and tune-out after a relatively short period of time).
- **Bass:** The Omnia.11 had many places in the system to tweak bass. Specifically the types of bass, the texture of bass, etc. This control simply turns the overall bass level up or down...because sometimes that’s simply all you really want to do. The bass control tunes many “hidden” parameters within the algorithm with this control.
- **Bass Thump:** Adjusts many different (hidden) parameters under the hood including the action of the dynamic bass clipper. At higher levels, the “kick” or “thump” action of bass material is emphasized.
- **Mid:** This new control gives the ability to emphasize, or slightly de-emphasize the amount of midrange audio energy heard through any selected preset.
- **Presence:** This control tunes many hidden parameters to bring out the “presence” or higher mids (brightness) in program content.
- **Treble:** This control tunes many hidden parameters to bring out the highs in program content. The effect starts around the 5K range and up.
- **Sparkle:** The Sparkle control brings out the “air” or “sparkle” region of the audio spectrum. Use just enough to add a touch of professionalism to your on-air sound. Too much, however, can be a bit irritating. This control shares a number of parameters with the “treble” control, so the two are somewhat interactive.
- **Stereo Enh:** Adjusts the stereo image enhancer. Higher values widen the stereo sound field. Careful

adjustment of this parameter and the **St. Enh. Density** control can provide a unique stereo soundstage for your station.

- **St. Enh Density:** Adjusts how fast the stereo enhancer algorithm functions. Lower values equate to a slower speed, and can be useful for emphasizing stereo ambient effects (such as reverb. Higher values (faster speeds) are useful for enhancing specific elements within the stereo soundfield (such as instruments, vocals, etc.). When using slower values, it is advisable to use lower enhancement levels (“Stereo Enh” control).

## Intelligent Wideband AGC

The wideband AGC in the “version 1.x” of the Omnia.11 was widely acclaimed by many as “the best darn wideband AGC ever”. With G-Force, we took things to a new level.

The new wideband AGC algorithm not only looks at the audio using multiple frequency bands, it also uses psychoacoustic analysis to add more power to the intelligently controlled side-chain. Gain reduction is not just derived by level, but is also based on several psychoacoustic properties. The intent is to provide smooth yet responsive gain control over a wide range of program levels, and to do it in a way that is least obtrusive to the ear and to provide intelligent data for downstream control stages.

The new wideband AGC can be adjusted to ride through material that alternates between full instrumentation to moments of single instrument (or solo voice) and back without obvious disruption of the sound stage, all while still maintaining precise level control.

The Basic Tab controls on the new Wideband AGC operate exactly like the ones in 1.x except for the new Accelerated Rel(ease) control added in version 3.5.

However, there are major advancements in the operation of the “Window” and “Make Up” functions found in the “Advanced” tab (shown on the next page).



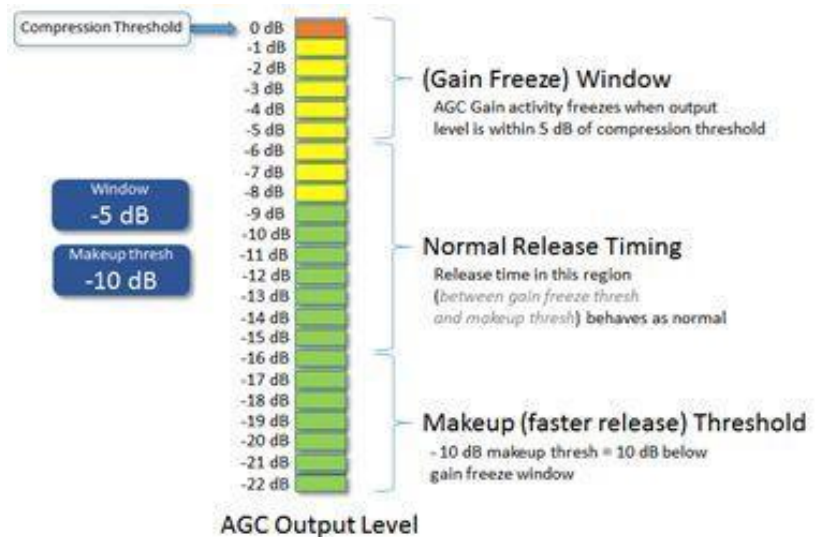
- **Accelerated Release:** Some programmers have wanted to have the ability to modify the default behaviour of the Wideband AGC to extreme differences in audio levels in program content, and to how fade-outs are handled. Previously, this function was just part of how the algorithm worked, and there was no option to change it. Now we’ve brought out this function. By default, the control is at 1 (algorithm default). By advancing the control higher, you will observe the wideband AGC tracking “fade-outs” and overall differences in level more aggressively. As the level differences increase, the wideband will begin dramatically increasing its release rate to “chase the level drop”. Note that this may allow you to use lower “regular” Release settings than you otherwise would have.

## Advanced Tab Wideband AGC Control Descriptions



Wide Band AGC Advanced Tab

- Window:** The wideband AGC system of the Omnia.11 (as part of the overall algorithm improvements) now features an improved windowing algorithm. Audio that falls within the “do nothing” window (as defined by the user) will cause the AGC to freeze, neither compressing nor releasing. This is useful when high RMS rich material (already processed loudly) is fed to the Omnia.11 as the AGC system will not add more “density” to already dense material as long as their waveforms fall within the window. This is all thanks to improved RMS and density detection schemes that are better able to differentiate between program peaks and long term average levels. You will notice much improved “stability” in the gain riding operation of the AGC system but responsiveness when the need arises.
- Makeup Threshold:** The Makeup Threshold control itself isn’t new, but its operation has changed a bit. It interacts with the Window control and can be thought of as a “soft window”. Audio that remains above the makeup threshold value will use the release time as defined by the user. Audio that falls below the makeup threshold value will have a faster release time, allowing low level material to be brought up faster without using a blanket faster release time which could cause listening fatigue.



When the audio level is brought up to the makeup threshold, the normal (user) release time will once again be applied. The value expressed in the Makeup Threshold controls (in dB) is the audio level below the level expressed in the window control where makeup action occurs. The combination of the Window and Makeup Threshold controls constitutes a “dual staged windowing” system for the AGCs.

- **RTP Level:** RTP stands for Return to Platform. What RTP does is return the gain of the AGC to the selected amount of gain reduction or “platform level” in the absence of audio. This control adjusts the “resting” or “platform” gain reduction level the AGC will return to when audio pauses or stops (while gated).

The primary purpose of RTP is to prevent the AGC gate from increasing the gain unnecessarily or holding the gain too low during pauses in audio, which could result in an increase in noise level or unexpected sudden increase in level when the audio returns.

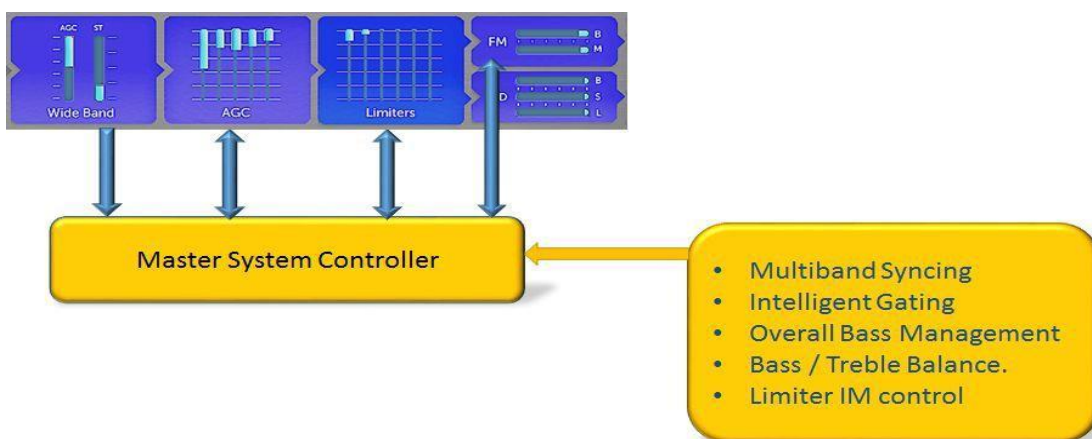
- **RTP Speed:** controls how fast the adjustment to the platform level (set with the RTP Level control above) takes place – i.e., how long it takes the AGC to move to the target RTP gain reduction level. Range is from “0” (off) to 11 (fast).

Note: For maximum gain-riding range, we suggest a Wide Band RTP Speed setting of “0.0” for most popular music formats which effectively disables RTP. Use higher settings if you have consistent board operators and don’t mind that quieter program sections remain quieter.

- **Pause Threshold:** activates and changes the characteristics of the dual platform “smart” moment-to-moment gate function. A setting of 0.0 turns off the smart gating, reverting it to conventional gate behavior. Settings other than 0.0 activate the smart gating function and higher settings allow the smart gating to be more aggressive.

Note: Middle-range settings can completely eliminate any perceived “pumping” effect during shorter quiet sections without compromising overall long-term gain-riding ability.

- **Filter Freq:** (High-pass Filter Frequency): This drop-down control adjusts the cutoff frequency of the built-in high-pass (lo-cut) filter. Available settings are “Out” (not recommended), “20 Hz”, “30 Hz” and “40 Hz”. A setting of at least “20 Hz” is suggested for most formats to keep subsonic signals from affecting the processing performance.
- **Min Ratio:** This variable control adjusts the minimum compression ratio that will be used by the Wideband AGC. Increase it to restrict it to using only higher ratios.



Since the intelligent sidechain of the wideband AGC contains a treasure trove of information about the acoustic sound signature of material on your program buss, we can use this data to manipulate all of the stages after the wideband AGC making the multiband AGCs, limiters, and even portions of the clipping process “program aware”. It is also where the data used by the “Intelligent Gating” and “Mode Control” sections comes from. This means G-Force is capable of being extremely transparent sounding even during heavy dynamics processing.

This data is used by the system controller (the “compute” portion) of the Omnia.11 to synchronize the gating and dynamics functions of stages downstream from the wideband AGC, providing unparalleled clarity and punch to the multiband AGCs and Limiters.

In the past, it could be a struggle to adjust the multiband processing sections downstream of the initial AGC stage. Much of the time was spent managing the “mushiness” of the sound that typically happens as processing stages become further and further removed from the program input.

The system controller can help here since it is able to keep all downstream stages “source aware” so that as much program impact as possible can make its way to the listening audience. You decide how much you want to let through and are not hampered by the limitations of “stacking stages” of processing.

## Multiband AGC Section

The 5-Band AGC has been improved even further in version 4.0. The new AGC features even better consistency and control over average levels, passing fast peaks onto the following limiter section (where they belong!)

You may notice that there is a “faster” component to the movement of the 5-Band AGC gain reduction meters that may look different from previous versions. This is a result of improvements to the AGC algorithm and do not indicate an added fast gain reduction component. It is merely an effect of newly added “special sauce”!



## AGC Basic Tab and Dynamic EQ Controls



- **Drive:** This controls the overall drive level into the multiband AGC system. Individual band drives can be adjusted by tapping the “XO” button to the left of the controls.
- **Gate Master:** The Gate Master adds or subtracts (depending on how it is adjusted) the gating threshold on all of the multiband AGC bands together. This control *offsets* the values of the individual multiband gate thresholds.
- **Attack Offset:** Attack Offset makes a relative change to the individual attack times within each of the multiband AGCs. Positive values speed up the attack times, negative values slow the attack times down.
- **Release Offset:** The Release Offset control makes a relative change to the individual release times within each of the multiband AGCs. Positive values speed up release times, negative values slow the release times down.
- **Intelligent Gating (Master Intel Gate):** As part of the full implementation of Cornelius’ “G-Force Technology”, there are a few new functions introduced into the Omnia.11’s G-Force upgrade. Intelligent Gating is one of them.

Since the G-Force system operates on a global level encompassing ALL of the dynamics processing, it is aware of what is happening in all stages of the process. As a result, it is capable of altering the individual bands of the multiband AGC for processing that better “matches” the program source.

One of the critical aspects of this is coordination of the multiband AGCs so that their operation “blends” with the source material better. A critical function is the Intelligent Gating system.

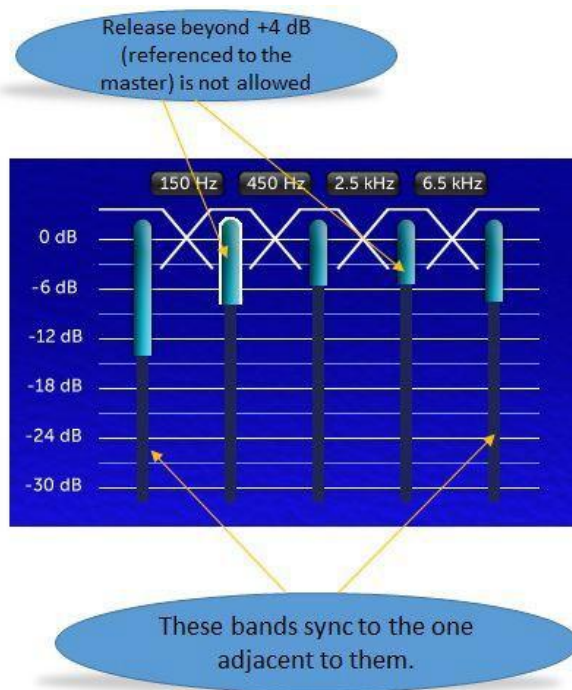
The G-Force algorithm can alter the behavior of the multiband AGC’s gating functions in a way that allows them to contribute significantly to building the RMS energy needed for consistent loudness while suppressing common side-effects often heard in other multiband AGC systems. As the program spectrum shifts around, the algorithm intelligently shifts the gating activity to keep the bulk of RMS build-up centered around the bands with the most audio energy.

How much influence this system has over the normal gating functions is determined by the “Master Intel(igence) Gate” control. Higher values (towards 0dB) mean stronger control by G-Force.

The intelligent gating system allows the multiband AGC system to operate over the full range permitted by its local system of gates. As a result, higher levels of intelligent gating will not cause the multibands to “stick” at some high level during moments of dynamic level change. It is only concerned with keeping the bands with minimal energy from floating around “unchecked”.

When adjusted (or “tweaked”) along with the Sync control, a LOT of power can be unleashed!

- **Transient Detail:** This control allows you to be VERY creative with the sound of the multiband AGC system. With it all the way up, it creates a very open sound while maintaining loudness. It helps to bring forward drums and other transients in the program content. Especially so if you are using DeClipper.
- **Sync:** This controls the amount of adjacent band syncing in the 5-Band AGC, relative to the middle (MH or ML) band. A setting of “0.0 dB” provides maximum sync between the bands. At this setting, minimal spectral manipulation will take place. A setting of “-2.0 dB” will allow 2 dB more “independence” in the immediately adjacent band and 4 dB in the second-adjacent bands. Use lower settings (along with lower settings of the Gate Thresh controls) to get more spectral manipulation. Use higher settings to preserve the frequency balance of the original program material. Also, please note that on presets where the AGCs are operating faster, a lower Sync setting will generally be needed.



- **Sync Master:** The Sync Master control in the Basic tab of the AGC menu allows you to select whether AGC Band 2 (the ML band) or Band 3 (the MH band) will be the master band the other bands reference to when using the Sync feature. In the example at left, a Sync value of -4.0dB has been applied:

Select “ML Master” when you want the overall brightness to match closer to the source.

Select “MH Master” if you want things to be brighter overall.

If the Sync control in the Basic tab of the AGC menu is turned down, this control will have less effect. (And virtually no effect at all if Sync is set to -12)

- **Engage Control:** If you would like to bypass the 5-Band AGC section, switch off the Engage switch.

- **Process Mode Switch Control:** This switch determines which bands have the G-Force influence of the AGC control side-chains. When switched on, the side-chains are manipulated by the system controller (Omnia.11’s computer) in a way that produces more “open” and “dynamic” sounding audio. As a result, audio within the bands chosen for control

“move forward” in the mix, and sound more “musical”. There are similar controls within the multiband limiter system as well.

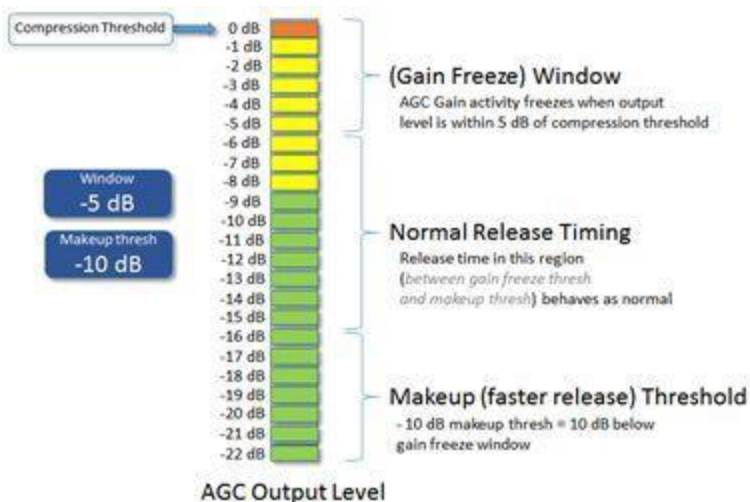
- The process mode switch control has three options:
  - 0: There is no G-Force altering of the multiband AGC side-chains.
  - 1: G-Force control is applied to the LO, and ML bands of the AGC
  - 2: G-Force control is applied to ALL bands of the multiband AGC system.



## Advanced Tab Controls



HI Band AGC Advanced Tab Controls



Each of the multiband AGC sections has a few new controls added. All of the multiband AGC bands feature “Window” and “Threshold” controls. The three highest bands also have their own “Intel Gate” controls.

- **The Window Control:** The wideband AGC system of the Omnia.11 has always featured a wideband “do nothing” window. We have now extended this functionality to

the multiband AGCs. The newly re-designed windowing algorithm makes it possible to finally implement this function to the multiband AGCs. For more information on the windowing function, refer to the Wideband AGC section.

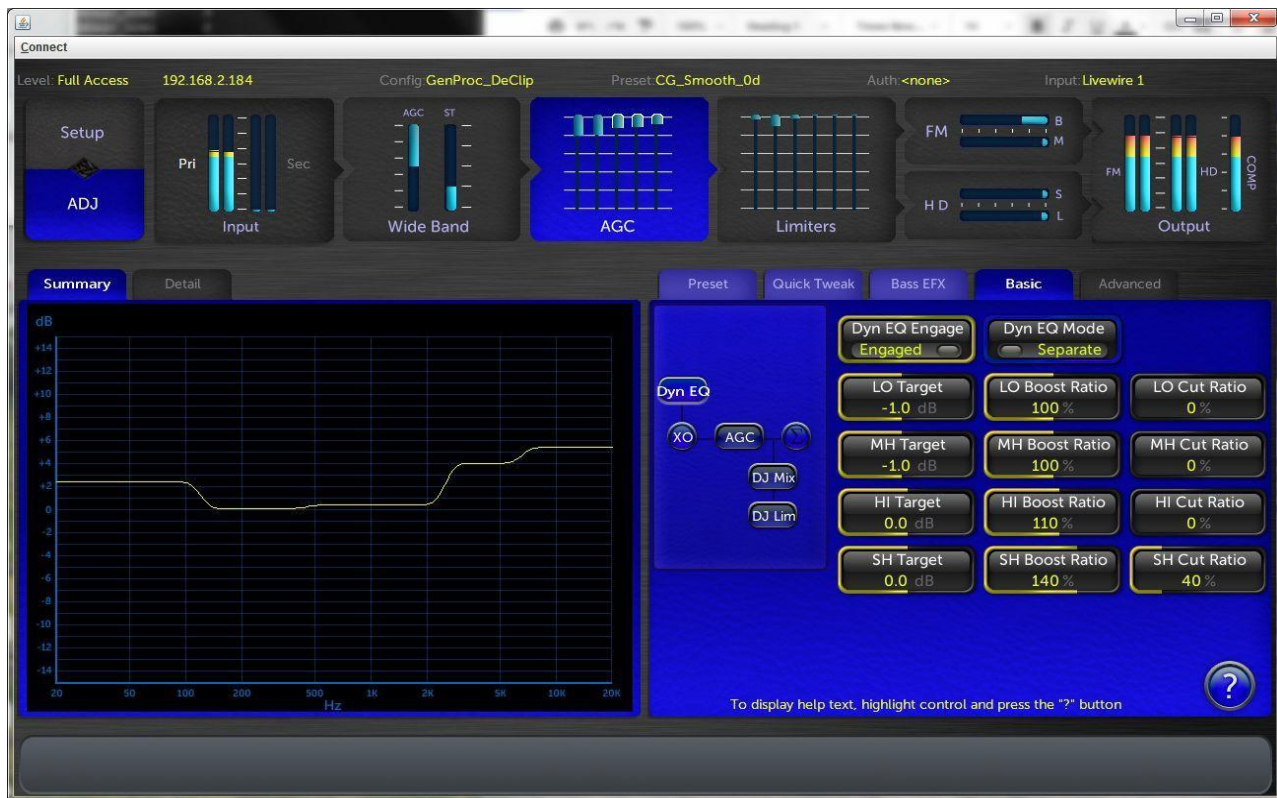
Audio that falls within the “do nothing” window (as defined by the user) will cause the AGC band to “sit there”, neither compressing nor releasing. This is useful when high RMS rich material (already processed loudly) is fed to the Omnia.11 as the AGC system will not add more “density” to already dense material – as long as the waveforms fall within this do nothing window.

- **Makeup Threshold:** The makeup thresholds in the multiband AGCs operate the same as in the wideband AGC. The Makeup threshold interacts with the window (gain freeze window) control. The Makeup threshold control can be thought of as a “soft window”. Audio that remains above the makeup threshold value will use the release time that is defined by the user. Audio that falls below the makeup threshold value will have a faster release time – this allows low level material to be brought up faster without using a blanket faster release time, which could cause listening fatigue. When the audio level is brought up to the Makeup threshold, the normal (user) release time will once again be applied. The value expressed in the Makeup Gain controls (in dB) is the audio level below the level expressed in the window control where makeup action occurs. The combination of Window, and Make Up threshold constitutes a “Dual staged windowing” system for the AGCs.
- **Threshold Controls:** We’ve added Threshold controls to the multiband AGC system. This will allow expert users to custom tailor what “flat frequency response” means for their formats.
- **Intelligent Gate (Offset):** In addition to the master intelligent gating in the top level multiband AGC control set, we’ve provided means via the “Intel Gate” controls (in the advanced tab) to offset the value of the master intelligent gate control on the highest three bands of the multiband AGC. This ability comes in handy in controlling the “brightness” characteristics of the multiband AGC system. Lower “Intel Gate” numbers allow that band to “stand out” more in the mix.
- **Min Ratio:** (all bands) The minimum compression ratio that will be employed in the selected AGC band.
- **Accelerated Release:** (all bands) This control allows control over how each of the multiband AGCs respond to drastically changing program levels in program content.

Previously, this function was just part of how the algorithm worked in each of the multiband AGCs, and there was no option to change it. Now we’ve brought out this function. By default, the control is at 1 (algorithm default). By advancing the control higher, you will observe the wideband AGC tracking “fade-outs” and overall differences in level more aggressively. As the level differences increase, the wideband will begin dramatically increasing its release rate to “chase the level drop”.

- **Transient Offset:** (LO and ML bands Only) These controls allow you to add to or subtract from the amount of Transient detail enhancement in these two bands. Lowering ML Transient Offset can cure any muddiness that may build up. Adding more to the low band can emphasize kick drum effect.

## Dynamic EQ - An Overview



Adjustment of the dynamic EQ can be made by clicking on the “Dyn EQ” button on the multiband AGC Basic controls tab:

The Dynamic EQ is a revolutionary tool for audio processing. Its history can be traced back to the Telos Delta phone hybrid from the mid 90’s, and later adopted into the Telos VX phone system. It was revolutionary for phone hybrids, and Frank Foti and Cornelius Gould recognized it to be a powerful concept to bring to audio processing.

**The dynamic EQ is NOT a multiband compressor, AGC, or other similar process. It is a process that ONLY operates as a program controlled equalizer. It does not care about level. If the audio is quiet, it will do its thing at that quiet level. If it is loud, it will do its thing at that level. As a result, it can provide spectral consistency from source to source without messing with the dynamic range of the program content!**

For Omnia.11 G-Force, the Dynamic EQ was transformed into a four band process, and placed ahead of the multiband AGC. It is able to manipulate the frequency balance of the LO, MH, HI, and SH bands. The ML band is used as the reference for the others, so the frequency balance there is static, but the static level can be changed by the end user for tailoring the frequency balance that is output to the multiband AGC section, if desired.

The operation of the dynamic EQ can be observed using the dynamic graph to the left of the controls. It will display in real time what actions the Dynamic EQ is performing on program content.

## Dynamic EQ Adjustment

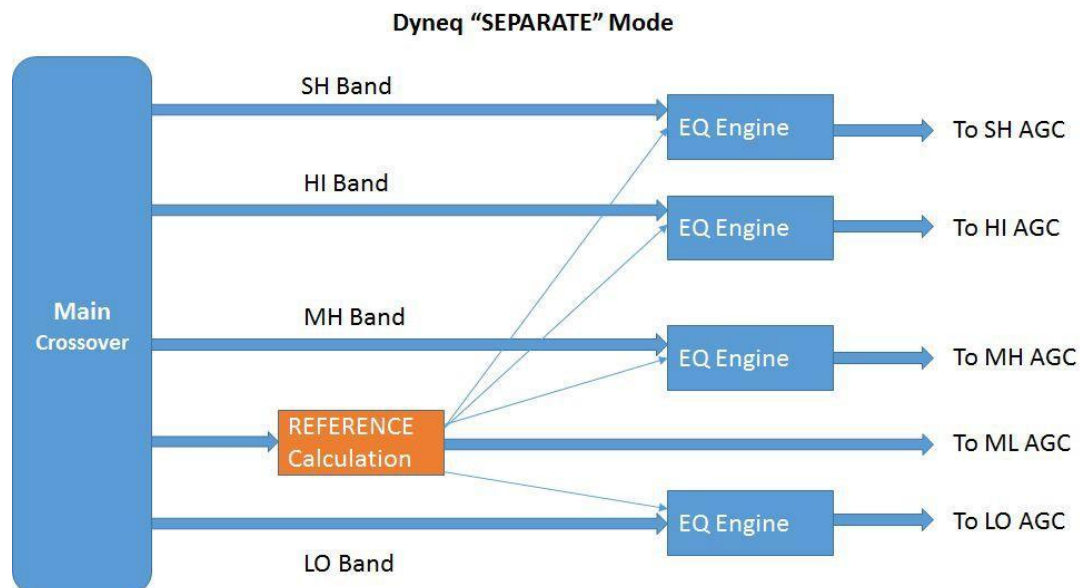


*Dynamic EQ Controls*

There are a number of controls available to the end user for customizing its operation to their respective formats.

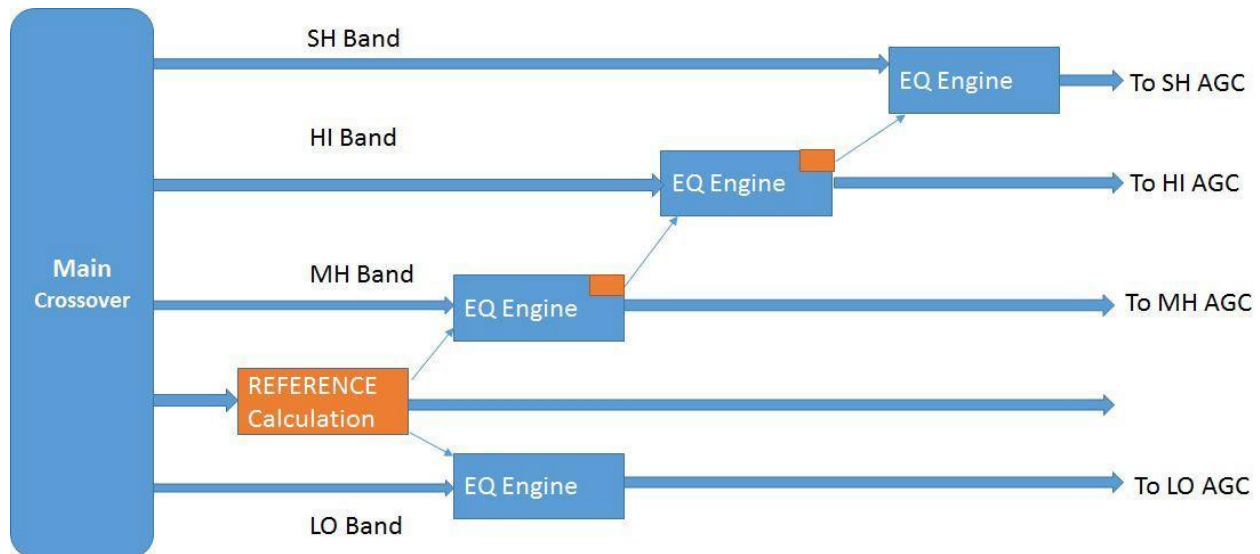
- **Dyn EQ Engage:** This switch can be used to bypass the Dynamic EQ stage in the Omna.11 processor. It can be useful to A/B with and without, particularly when you see an extreme equalization curve being developed. Doing this provides great insight into the power of the Dynamic EQ feature, and is a great diagnostic tool!
- **Dyn EQ Mode:** There are two modes of operation for the Dynamic EQ: “Separate” and “Interactive”.

Separate Mode: In Separate mode, each individual EQ engine watches the master reference calculation algorithm, which monitors the “ML” crossover output.



Separate Mode maintains a “warmer” tonal balance with “a bit of top end sparkle”. In Separate mode, the Dynamic EQ graphic display shows the frequency response of the Dynamic EQ system as it feeds the multiband AGC.

Interactive Mode: In Interactive Mode, the top three bands of dynamic EQ operate in a chain, where the SH EQ engine watches the HI EQ engine for its reference, and the HI EQ engine watches the MH engine. The MH engine watches the reference engine.



Interactive Mode maintains a “brighter” tonal balance.

The Dynamic EQ display representation needs to be interpreted a bit differently in interactive mode. You may see a graph that shows 2 dB of boost in the MH EQ, none in the HI EQ, and, maybe 5 dB of boost in the SH EQ. While this looks like it would be strange, keep in mind that what you are seeing in this case (INTERACTIVE MODE ONLY) is a representation of the gain calculations relative to the adjacent reference band.

- **Boost Ratios:** The boost ratio controls are used to limit how “hard” the EQ engines operate. 100% settings allow the system to operate in a 1:1 ratio. In other words, a 3dB difference (or error) between an individual EQ Engine and its reference results in a 3 dB EQ correction. 50% settings result in a 1.5 dB correction for the same scenario.
- **Cut Ratios:** The “Cut Ratio” controls are now active. When raised from 0%, these will allow the Dynamic EQ to reduce the level of a band below the 0dB line, similar to the way the Boost Ratio controls allow the bands to raise the level. For example, using some Cut Ratio on the LO and /or SH band can smoothly reduce any excessively boomy or bright material that may come along ahead of the AGC, reducing the load on the LO & SH band AGCs. Be careful not to use too much Cut Ratio though as too much can cause some audible artifacts. A setting of about 30% would be a good start if you want to try it. Watch its behavior on lots of program material to ensure it is doing what you expect.
- **Target:** (LO, MH, HI & SH Bands) You can raise or lower the target output level of each adjustable band to boost or restrict its maximum amount of boost.

Note for Previous G-Force Users: The “Out” controls for each band have been replaced by new “Target” controls. Note that the previous Output controls were redundant with the AGC XO controls. Also Note that the ML band acts as a reference band so is not adjustable. Separate mode references only the ML band. Interactive mode also looks at adjacent bands.

## Limiter Section



### Basic Tab Controls

The G-Force Technology extends to the multiband limiter section as well! Users can choose how much of this effect is applied and where using the LF and HF mode switch controls, as well as the LF & HF density controls.

The main goal of the G-Force Technology in the limiter stages is to manage & create more consistency in the texturing created by the multiband limiters.

- **Drive control:** In Omnia.11 G-Force, the limiter drive control has an entirely new role in life. It not only adjusts the overall drive level to the limiters (as before) but now it serves a bigger purpose of “texturing” your station’s audio.

Due to the super tight control characteristics of the new limiter system, and its new high speed ultra-low IMD management algorithms, driving the limiters hard without loss of quality or clipper management is possible! Driving the limiters harder causes a smooth, forgiving, and carefree transition to a “thicker” or “denser” on-air sound.

Older version issues such as inconsistent live vocal quality are GREATLY reduced (if not eliminated) in G-Force. Driving the limiters lighter or harder does not change loudness levels on the dial. It only manages how “dense”



your station's audio sounds. For a more open / natural sound, watch the multiband limiter activity on high RMS content (like the choruses on heavily compressed / limited content like P!nk, or Kelly Clarkson songs - or metal songs in general), and adjust the multiband limiter Drive to just "tickle" the limiters to about maybe 1-2 dB or so (3-4 dB when the optional Perfect DeClipper is used). What you will see is that the limiters will run extremely lightly on high RMS material and work harder on dynamic content (such as older songs, and live voice), yet sound remarkably transparent and loud! Why "re-limit" program material that is already limited to within an inch of sanity and doesn't need any additional density enhancement? This allows the limiters to work as real peak limiters, adding density only to material that needs it.

- **Attack Offset:** Similar to the scheme in older Omnia.11 software, the Attack Offset control makes a global change to all of the attack times in the multiband limiter system. A bigger number equates to a faster attack time. The individual attack and release times are scaled up or down according to the Attack Offset control setting. A value of "-5" places the multiband limiter attack time under computer control (or automatic attack), where the system actively (dynamically) modulates attack times for the best "punch" vs. "clipper peak control". When in "automatic attack" mode, the individual attack controls in each of the limiter sections become controls to "modify the shape" of the automatic attack times.

Since the limiters' attack times intelligently engage whenever extreme conditions exist, using a value of -5 places the system solely under the control of the computer. Higher Attack Offset values creates an "override", allowing attack times to be more under user control, and less under the control of the computer -- unless a condition occurs to cause the user value to be insufficient to protect the final clipper, in which case, the computer will (temporarily) override user attack settings.

- **Release Offset:** The release offset control does the opposite of the Attack Offset control mentioned above. A higher value creates a faster release time across all limiters. A value of "5" places the exact release time of the individual limiters under control of the computer (automatic control).

When in automatic mode, the release times are actively modulated to release as fast as possible without causing objectionable intermod distortion, and minimizing listener fatigue. Settings lower than "5" gently transitions to a slower, program controlled, release slope. Lower values are useful for programming meant for long term critical listening.

- **LF & HF Limiter Density controls:** Use these controls to set the desired amount of "density texturing" of the limiter sections. Higher number values equal more density (or "thickness") created in the high or low frequency bands. For greater TSL (Time Spent Listening), lower values in the HF Lim Density control create less long term listening fatigue. We recommend a value of around "2".

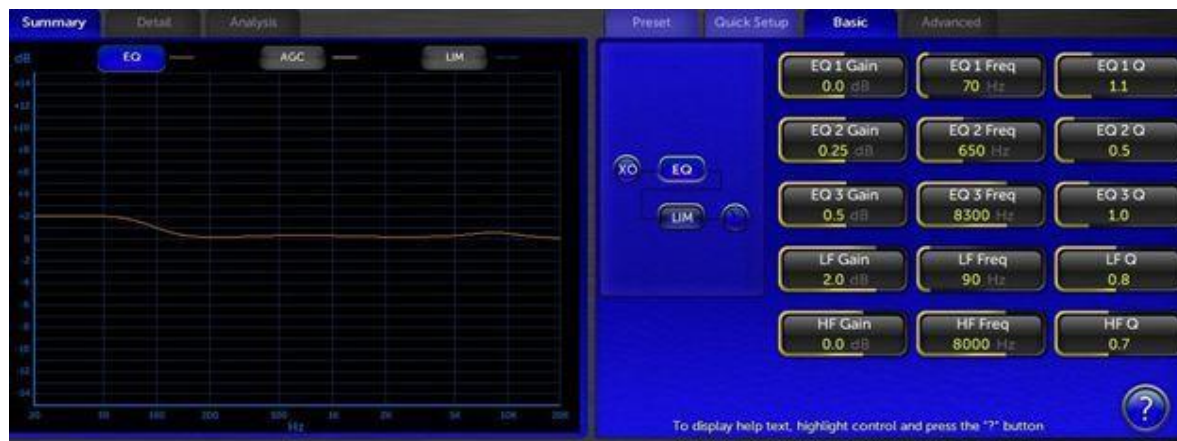
Higher values of HF Lim Density can be useful where limiter activity in general is extremely light, or if users want to emulate the HF characteristics of older analog audio processing gear...which can be useful for some "retro" formats.

There is more freedom in the lower frequency bands (LF Lim Density control). Lower value numbers here create more "openness" in the low frequency and low-mid bands (SL, LO, and ML bands). Higher level settings give more "sustain" to these frequencies, and can add a level of "excitement" to some material.

The density controls operate by modifying parameters in the computer controlled attack & release algorithms.

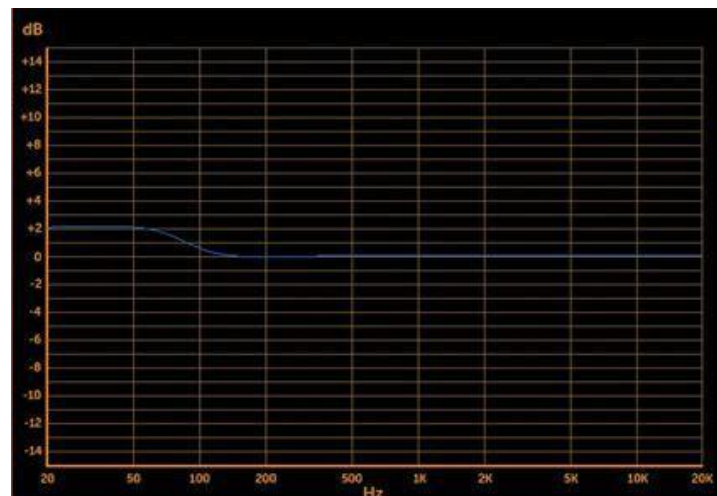
- **Limiter Mode switches:** These switches determine which bands have dynamics sidechain manipulation by the system controller (Omnia.11's computer). When switched on, the sidechains are manipulated in a way that produces more "open" and "dynamic" sounding audio vs. the traditional "flat" sound produced by multiband limiters. As a result, audio within the bands chosen for intelligent control "move forward" in the mix, and sound more "musical".
- **LF Limiter modes:** The LF limiter mode switch features three modes:  
Mode 0 is "off".  
Mode 1 turns the SL and LO bands on. This produces more dynamic audio in the bass frequencies only.  
Mode 2 turns the control mode "on" for not only the SL and LO bands, but the ML band as well.
- **HF Limiter modes:** There are two modes that determine the dynamic control status for the MH, HI, and SH bands:  
Mode "0" is off.  
Mode "1" is on.

## Equalization System



### The limiter section of the Omnia.11 now features an extensive equalization system.

In addition to the previous three parametric bands of equalization, users now have a fully adjustable low and high shelf filters. This comes in VERY handy when there is a desire to reproduce the classic "low end" sound of earlier Omnia processors. For example, you can set the low shelf to lowpass at 80 Hz with a Q of "0.9", and a few dB's of boost for smooth pleasing "oomph" to the bass texture of program material.



## Bass EFX Tab



**\*Bass Clarity:** When on, this improves the clarity and "punch" of deep bass frequencies whenever heavy bass clipping is occurring on program material.

***Solar Plexus:*** *Solar Plexus is in G-Force as well! We've added a new control called "Subharmonic Balance".* When Subharmonic Bal is set to "Off" the Solar Plexus effect is very close to the subtle "thunder" as heard in the original "thunder bass" control in earlier Omnia.11 version 1.4. When Subharmonic Balance is turned "up" the Solar Plexus effect is more obvious, and encompasses a broader range of bass frequencies.

Similarly to Deep Bass range (see below), be careful not to apply too much of the Solar Plexus effect as it can exaggerate low frequency room noise or mic "plosives". Higher settings can also cause some audible distortion when heavy bass is present. Be sure to monitor on speakers or headphones that can reproduce the lowest frequencies in order to hear the full effect of what Solar Plexus is doing.

***Deep Bass Boost & Warm Bass Boost:*** *These controls can be used to apply a "static boost" for both the Deep bass and Warm Bass enhancers. Boosting the levels here will cause an immediate and audible increase to their respective frequency bands.*

The Phat Bass control adds subtle low mid / upper bass detail to program content, and helps to define the sound of bass not only in small speakers, but larger ones as well. The effect is program controlled, so do not fear the use of large amounts of "phat bass" boost.

***Deep Bass & Warm Bass Range:*** *If these "range" controls are set to "0", there is no dynamic program controlled action of the bass enhancers. The static boost controls on the basic menu act as shelving (deep) and bandpass (warm) equalizers of sorts. As the range controls are increased, the Omnia.11 dynamically applies more enhancement in these frequency areas whenever they are deficient in the program source. The higher the settings, the more aggressively Omnia.11 will try to bring out these frequency tones. If there are already sufficient amounts of energy in these bands, the Omnia.11 will apply less enhancement to these bands. The Omnia.11 will not apply any additional enhancement to these frequency bands on material that has really strong bass content. It will only add where energy is deficient.*

Be careful with high amounts of deep bass range if you do not have high pass filtering on studio mics. High

levels of deep bass range can enhance microphone “plosives”. So, if you have a notorious “P-Popper” on staff, either employ 80 Hz high pass filtering on the studio mic processor, or use less deep bass range!

Excessive warm bass range boost can cause some program material to sound “muddy”. Listen carefully, and adjust the controls using small amounts over a long period of careful listening.

***Deep Bass Slope:** When set to 12 dB per octave, the deep bass / warm bass characteristics are broader, and favors upper bass / low mid tones. This is a useful setting for stations playing primarily older material (such as Classic Rock or 70s & 80s formats).*

***Bass Enh Engage:** The G-Force release features the ability to turn off the active bass enhancement stages to allow for “before and after” comparisons.*

**Phat Harmonics:** This new function is a very powerful addition to the Phat Bass system. It is capable of generating bass harmonics that add the sense of “warmth” and “Detail” to deep bass notes and bass percussion. It is capable of doing this without creating muddy sounding audio.

This is a major advantage in processing in that the only way to attempt such a thing before was with various EQ curves...which typically made some things sound good, and others muddy.

If your preset is using lots of equalization to add warmth, see our tips and tricks section for hints on how to use this control to give cleaner, “un-muddied” warm audio!

**Punch Mode: (unavailable in “Silvio” clipper mode)** This control determines what type of “bass thump” you are enhancing when adjusting the “Bass Thump” control in the quick setup tab. Low settings produce a “low impact” thump (the default mode in early G-Force versions). Higher settings produce a higher impact “punch”, or -if you wish- bass punch with authority!

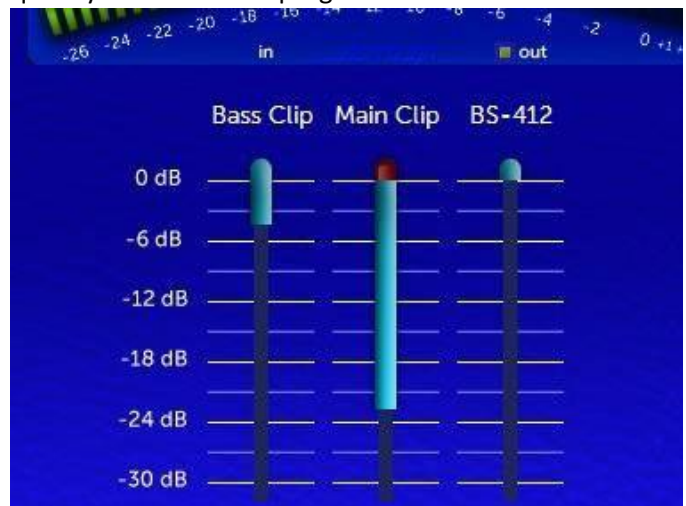
### \*New “Silvio” Clipper!

**\*New Ultra-Low IMD “Silvio” Clipper:** The version 4.0 GForce release features Frank Foti’s most advanced Lo-IMD clipper yet! This new clipper provides an even cleaner, brighter and more open sound without a loudness penalty while maintaining a rich, powerful bass response! Like “Pepino” Mode 2 before it, also allows you to adjust the sensitivity of the bass clipper to high-frequency content in the program material.

See the **FM Clipper Advanced Features** section below for details.

The “Main Clip” meter quantifies the “perceived distortion” for a given clipper setting. This helps users to adjust for the “loudness vs. distortion” tradeoff.

The level of distortion will be displayed in red on top of the main clipping depth meter (in blue). Generally speaking, the FM clipper drive is properly adjusted when you are able to achieve the desired loudness with a minimum amount of distortion. Some adjusting of the “limiter drive” control may be necessary if the proper loudness level is not achieved without excessive distortion.



It is normal to see brief moments of high distortion readings that last fractions of a second. This is OK. You do not want long term distortion (red) levels beyond 1 or 2 dB or so. The exact reference here varies from market to market as the acceptable level of distortion is not the same across a broad range of radio markets.

Note: The clipper drive also influences the HD limiter drive (on HD equipped units) to maintain consistency of texture between the two paths. The HD Limiter drive control serves as an overall "offset" to the clipper drive level.

## FM Clipper Advanced Features

Once you are in the FM Clipper section, choose the "advanced" tab below to switch to the advanced features.



*FM Advanced Menu*

**\*Clipper Version:** "Silvio" selects the latest & greatest! "Pepino 1" selects the clipper performance of G-Force version 3.5 and "Pepino 2" maintains the clipper performance of G-Force version 3.6/3.7.

NOTE: Switching between clipper modes varies processing delay slightly. Be sure to account for that if using diversity delay.

**\*BassClip Sens:** This control is only active when "Silvio" or "Pepino 2" are selected. It adjusts how sensitive the bass clipper is to high-frequency content within the FM pre-emphasis curve. Higher settings = more aggressive clipping of bass frequencies when high-frequency content is present.

**\*Clipper Sparkle:** This control is only active when "Silvio" or "Pepino 2" are selected. Higher levels add "air" and "sparkle" to the audio by enhancing extreme high frequencies. Use care when increasing beyond 2 dB. Consult other (younger) ears as a reference to make sure you don't go too far. It may also be desirable to use a lower setting of the Quick Tweak "Sparkle" control when using this.

**Clipper Silk:** The clipper silk control determines the overall texture of the clipper sound, especially at low frequencies. Lower settings give more of a "solid" kick to bass percussion, higher settings provide a softer "padded kick".

**HF Silk:** The HF Silk control allows the end user to adjust the characteristic sound of the new FM clipper. Higher settings engage the full power of the clipper on high frequencies, producing the smoothest less fatiguing sound. Lower settings will mimic the high end response of the previous clipper. We recommend using the highest

settings. Older presets will default to minimal amounts of smoothing.

### **Bass Clip Drive**

Increasing bass clipper drive can create stronger “dominating” bass. It may be necessary to increase “Bass Clipper Tightness” at higher drive settings to prevent a “muddy sounding” low end.

**Bass Clip Thresh:** This control sets the threshold of the bass clipper. This should be set for the best compromise of bass strength vs. bass induced distortion. More negative settings keep more of the bass out of the main clipper, reducing the “rattling” sound strong bass can cause to other important parts of the audio program such as vocals and solo instruments when it is playing at the same time. Too low of a setting can reduce the overall bass though.

### **Bass Clip Tight**

Higher settings create a “tighter” more defined bass sound. Lower settings create a “girthy” bass sound, but too much bass clipper drive with lower settings here could create a flabby overwhelming bass sound. Use care, and also adjust the “Bass Thump” in the Quick Tweak tab if necessary.

### **Bass Punch**

This control shifts around the distortion products created by the bass clipper system. Higher settings allow more clarity of deep bass products, but might create some intermod distortion of higher frequencies. Lower settings produce less high frequency intermod distortion, with the trade-off being thinner sounding bass.

## **HD Section (optional)**

Note: The HD limiter was greatly improved in software version 3.5 and further improved in version 4.0.

The HD section takes the audio from the output of the multi-band limiter section and routes it to its own EQ section, Sensus artifact reduction section and final lookahead limiter. This can be used to feed an “HD Radio” codec or your Internet streaming codec. (or both!)

**EQ:** The EQ section is the same as the one described on Page 17 but is dedicated to the HD section.

**Sensus:** The Sensus feature can help reduce audible artifacts when using lower bitrate codecs. For a complete overview of Sensus, please see the Omnia.11 User Manual. There are two controls (described below) and a Sensus gain reduction meter in the metering panel to the left.



*Sensus Menu*

**Sensus Level:** Sets the amount of codec conditioning to be applied to the audio. Increasing the setting adds more SENSUS control. Extreme settings -- those high enough to cause noticeable dulling of the program material,

are unnecessary and will not further improve the audio quality through the codec.

**Sensus Freq(ue)ncy:** Sets the range where the SENSUS function begins its magic. For example, a setting of 5kHz will program the SENSUS algorithm to focus on frequencies of 5kHz and higher. You should start with the 13kHz setting, and then select lower frequency settings until any coding artifacts are tamed. There are 8 available adjustment frequencies between 13kHz and 1kHz.

**Limiter:** There's a single control in the Limiter menu: **Limiter Drive**. Set this for the desired limiting level, looking at the **Final Limiter** gain reduction meter in the metering panel to the left. Please note that this limiter is very efficient and can help match the density of the FM program in HD1 and streaming applications. If it sounds too "thick", back off the Limiter Drive some.

**Note:** The clipper drive also influences the HD limiter drive to maintain consistency of texture between the two paths. The HD Limiter drive control serves as an overall "offset" to the clipper drive level. So once set, you shouldn't have to re-adjust if you make any changes to the Clipper Drive.

## Perfect Declipper (optional)

Omnia.11 G-Force was designed from the ground-up assuming the incorporation of Hans Van Zutphen's "Perfect Declipper", an ingenious real-time de-clipping algorithm.

What it does is to continuously monitor program source content as it arrives at the Omnia.11's input. It watches for "clipped" waveforms (waveforms clipped by either lack of headroom, or deliberately in highly mastered music tracks). When it sees these clipped waveforms, it calculates the angular trajectories of the waveforms as they approach flat-topping, it recalculates the peak that would have been there.

The Perfect Declipper does not stop there! It also monitors all of the harmonic waveforms, and their relationships to the fundamental frequencies that were present before flat-topping, and regenerates their activity around the main signals that were flat-topped!

This process greatly reduces (if not completely eliminates) distortion present in the mastering process. This is important for broadcast audio processing! It may seem counterintuitive at first glance to unclip material so it could be clipped later, but when you look closely, it makes a lot of sense!

Consider the fact that much of the sophisticated work that happens at the back-end level clipping system of today's FM broadcast processors. The modern-day FM broadcast processor uses sophisticated clipping algorithms designed to hide much of the distortion you would normally hear for a given level of loudness (dial presence). Now consider that a lot of the same type of distortion is present in much of today's modern mastering techniques - only not as sophisticated. There is NO distortion masking used at the record mastering level.

In this situation, much of the distortion the FM system is built to remove is already part of the program content. So the work of these advanced broadcast loudness clippers is compromised by the fact that the same type of distortion is in the source material! When run through broadcast processing, the distortion you don't want to make on the air is already present in the source, thus making your station sound "bizzy", or "fuzzy".

Perfect Declipper adds clarity to your on-air sound by removing this distortion. Also, since much of the clipping in the mastering process removes just about all the peaks in percussion and other transient waveforms, modern source material sounds flat, uninteresting over the air. With Perfect Declipper, these transients are restored.

Percussion (drums, kick drums) have impact again. Your music program will “breathe” on air, and have depth!

### Turning on Perfect DeClipper

The Perfect Declipper is located in the Basic tab of the Input menu and can be turned on (if licensed) by turning on the “DeClipper” switch.

The Perfect Declipper requires an activation license to function. If this option has not been purchased with G-Force, please contact your Omnia dealer to purchase a license.

**NOTE:** If you are using the DJ output to feed your announcer headphones, Perfect Declipper will need to remain OFF because it introduces additional delay right at the input, affecting all of the Omnia.11’s outputs including the DJ output.

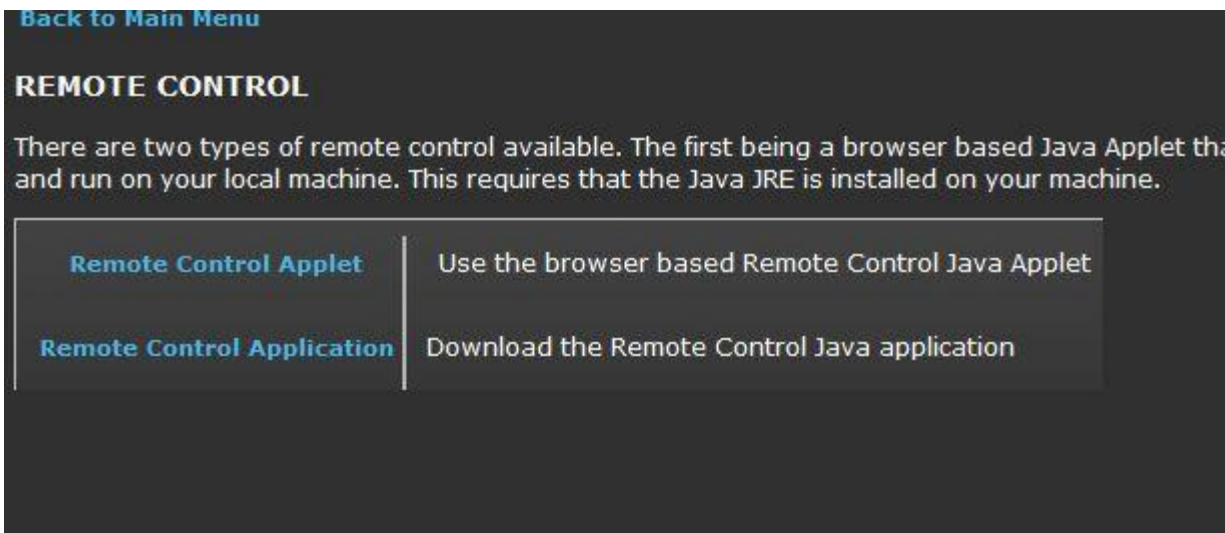


### Remote Control Options

Omnia.11 G-Force now features two methods of remote management. The first is via the traditional Java Web browser based remote control. (This requires a legacy browser that still has full Java capabilities).

The second is a downloadable Java stand-alone application. In recent years, Java support has been discontinued by browser publishers due to security issues. This led us to introduce a different, and more stable remote control approach that does not have the vulnerabilities of a browser based approach.

The stand-alone download option is available by logging into the Omnia.11 with your browser, and going to the “remote” tab.



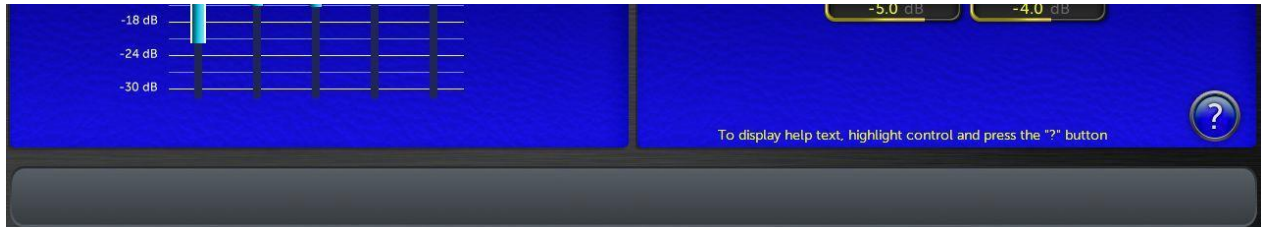
Clicking on “Remote Control Application” will prompt you to save the .jar file to your local computer. You will still need to have Java installed on your computer to run this app, but you will no longer need to have Java



installed within your web browser. In fact, it may be desirable that you use the downloadable application only, and uninstall the remote application from your browser.

Upon each login, the stand-alone remote control application will check its internal version with the operating software of the Omnia.11. If a version conflict is detected, the application will alert you to the condition. It is advisable to log into the Omnia.11 after a software update to download the version compatible with the current Omnia.11 OS.

At the bottom of the remote control window, you will see a horizontal rectangle box. This is the “holding pen” or Toolbar for controls you wish to have quick access to.



Controls can be pinned to the toolbar by right clicking the control. An option to “send to Toolbar” will appear. Clicking on this option will place the control to the toolbar:



Controls can be removed from the toolbar by right-clicking on the shortcut, and choosing “Remove”.

## G-Force Preset Descriptions

### New and Updated Presets in v4.0!

New and Updated Presets are included with the v4.0 update, taking full advantage of the new Silvio clipper's extended capabilities! These presets have an "SVO" suffix:

**CCM\_2020\_SVO** - This preset is designed around "bright" and/or highly processed music content, such as Contemporary Christian music, and some country. It attempts to preserve some of the high frequency content while "normalizing" program density.

**CG\_AAA\_SVO** - A general purpose preset with a "flat" frequency response profile. Useful for AC and Triple-A contemporary formats. Processes pretty much anything well, a great starting point! Note that it is an evolution of the old "CGSmooth" preset but utilizing all of the current up to date G-Force features.

**CG\_CHRHOT\_SVO** - A CHR / Hot format preset with a flat profile. An opposing counterpart to the "CG\_Hot\_AC" preset.

**CG\_CHRHOT\_WM\_SVO** - Same profile as the CG\_CHRHot preset, but with more low end bass tones.

**CG\_HOTAC\_SVO** (All versions): - For "Hot" type music formats, many programmers are looking for variations to start with to build their signature sound. These presets play with different loudness profiles / density textures. They are closely related to the CG\_CHRHot presets.

**CG\_Cls\_Rock\_SVO**: A nice open, yet "full" sounding preset that can be useful for Classic Rock or AC stations that desire just enough "oomph" to keep the listeners engaged.

**CG\_HOTAC\_WM1\_SVO**: Warmer / Fuller versions of the CG Hot AC (and the Silvio clipper update versions).

**CG\_HOTAC\_WM2\_SVO**: Version of the WM1 preset with more low bass tones.

**CG\_NEO\_Kicks\_SVO** and **CG\_NEO\_Kicks\_WM\_SVO**: The "Kicks" presets are able to give a solid "kick" to bass / kick drums. Useful for formats that need that extra "kick". The "WM" version adds some warmer bass tones too.

**CG\_NEO\_Thumps\_SVO** and **CG\_NEO\_Thumps\_WM\_SVO**: These presets add an element of "excitement" for contemporary music formats with some subtle kick drum enhancement. The "WM" version adds warmer bass tones.

**CG\_PubTalk\_SVO**, **\_SVCG\_PubTalk\_WM10**, and **CG\_PubTalk\_WM2\_SVO**: We've updated our "PubTalk" presets for use with the new Silvio clipper. These presets are intended for FM talk formats that desire lots of long term listening, such as non-commercial public radio talk. The WM versions add warmer bass tones, if desired.

**CG\_RockNRoll1\_SVO** and **CG\_RockNRoll2\_SVO**: New "CG Version" rock presets. Intended for formats that need that "rock and roll" edge. RockNRoll2\_SVO is a less compressed version.

**CG\_Smooth1\_SVO** and **CG\_Smooth2\_SVO**: These are updates to the old "CGSmooth" Preset, versions of which have existed for quite some time. It is a good general purpose preset that is a compromise between "light AC" type presets, and "RockNRoll" style presets. The AGC section is run more traditionally here. See also CG\_AAA\_SVO.

**CHR1\_SVO** - **CHR2\_SVO**: These presets provide a similar texture and loudness as "Event Horizon", but with less clipper activity. CHR2 features more presence in vocal bands and bass percussion.

**EventHorizon\_SVO:** An updated version of the EventHorizon preset that many use to build crazy-loud presets from. Event Horizon: The "nuclear" preset option. Use at your own risk!

**HotAC\_SVO** and **HotAC\_WM\_SVO:** An updated version of HotAC preset that takes advantage of the Silvio clipper for warmer / more present bass notes. The WM version has more of the warm bass notes dialed in.

**Nashville Silvio presets:** These presets are new additions to the "Nashville" country preset series. Version 7 has a smile curve frequency profile (less mids, more highs and lows) than the version 8 presets. The "Br" version has a "bright" frequency response profile.

**Ohio Valley\_SVO:** This preset is an update to the "Ohio Valley" preset for the new Silvio clipper. If you want a preset with lots of warm bass tones, then this one's for you!

**Revibe\_2020\_SVO:** This is an update to the popular "Revibe" preset, optimized for the Silvio clipper. Like G-Force, Revibe has a great unique bass signature that many enjoy for contemporary pop music formats.

**RockNRoll\_SVO:** An update to the "RockNRoll" preset that features the new Silvio Clipper.

**UrbanAC\_SVO:** Since the Silvio Clipper is able to preset warm & full bass better than any version before it, we couldn't resist building an Urban AC preset around it!

#### **New classical presets that take advantage of the Silvio Clipper option:**

**CG\_Classical\_SVO\_A:** Generally a "rounded" sounding classical preset. Dynamics are "tucked in"

**CG\_Classical\_SVO\_B:** A more dynamic version of CG\_Classical A. Midrange frequencies are able to dynamically move forward in the mix.

**CG\_Classical\_WM\_SVO:** A Warmer sounding version of the classical preset. Low mids and bass areas are more dynamic compared to version B

**CG\_Clsical\_Movie:** Classic preset that has more "processing" in it - gives some of the "movie soundtrack" feel.

#### **Updated "G-Force" presets**

When G-Force was first released, we had one preset that was specifically built on some of the unique qualities of this version of the Omnia.11. Many grew to enjoy its unique bass signature, and desired more options for various formats. We listened! With the power of the new Silvio Clipper, we were able to be creative, and create versions of the G-Force presets that have an almost "3-D bass" quality.

**GForce\_SVO:** An updated version of G-Force that takes advantage of the Silvio Clipper.

**GForce\_AC1\_SVO** and **GForce\_AC2\_SVO:** A version of G-Force with a "flatter" frequency response profile along with a bright signature.

**GForce\_UrbanAC\_SVO:** A version of G-Force AC with a warmer bass profile.

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#### **Latin Format Presets (introduced in v3.5)**

**\*Made in cooperation with Juan Punyed, Telos' latin American sales specialist:**

**BACHATA\_1, BACHATA\_2, CALIENTE, CUMBIAS, RANCHERO\_1, RANCHERO\_2, SALSA, SALSA\_Open.**