



Yamaha Webinar Series: Sound System Basics Q&A Sheet

No.	Question	Answer
1	Can i connect a 16w speaker with a 300w Amplifier. Will the speaker get damaged if the amplifier power is too high than speaker?	We can connect the 16W speaker to a 300w amplifier only if you set the power limmits right or have the option of setting the power limiters. If you are using the same amplifier as the manufacturer it quite easy as you can find the presets designed for the perticular speaker model
2	for hi-z speaker is connected in parallel or series.	All the speakers are conencted in paralel. Connect in series only if a manufacturer advises you to do so.
3	Can you once more explain the relationship between Ohms, votls and watts	Ohms is a rating that refers to the restriction of power, or impedance. The higher the ohm rating, the more impedance is applied to the flow of power. Wattage in speakers and amplifiers is about how much power a speaker can handle and how much power an amplifier is putting out.
4	How it will determine in case of crowded scenario as there will be audio input from various sources; Ex- Townhall scenario?	Use a DSP or a Mixer to mix all the sources and send it out as one output
5	what algorithm does it use for AEC?	An echo occurs in online meetings when the far-end voice is transmitted to the near-end where it goes into their mic and then gets sent back to the original person. With an Acoustic Echo Canceller turned ON though, it will listen to the far-end audio so when the near-end mic audio is transmitted it goes through the AEC first. When the AEC recognizes any echoed far-end audio, it will erase it before sending the audio back to the other side – leaving only the 2nd person’s voice and a much clearer sound overall.
6	Can we have inbuilt recording furntion with the same?	MTX/MRX series processor doesn’t have inbuilt recording function but you can use the recording function of soft VC platform like Microsoft Teams, Zoom.
7	How does the equalizer settings in processor actually measured and adjusted/tuned?	An equalizer (also called an “EQ”) is an audio filter that isolates certain frequencies and either boosts them, lowers them, or leaves them unchanged. An EQ that you’re likely familiar with is the one in your car that allows you to boost/cut bass and treble frequencies, though these EQs have relatively limited capabilities. The primary function of an EQ is to adjust the frequency response of audio captured by microphones and instrument pickups, as well as any electronic sounds. Aside from making the audio sound clearer, another critical reason why EQs are so important is because of how they can help stop feedback. And to stop this feedback automatically we need Feedback Suppressor. In general, feedback occurs when speaker audio enters a microphone and is cycled back to the speaker – which causes that same sound to be reinforced and amplified – usually in the higher frequencies. We have 2 types of feedback suppressor in our processor. It will locate that problematic frequency and add a filter to reduce the feedback frequency by pulling down the volume of that frequency. After the feedback frequency is suppressed, we will get a nice flat response.
8	how do we define the type of microphone to be used for such applications? is there any standard procedure?	There is no such thing as the one size fits all microphone, they all sound different, and they all have their uses depending on application. Vocal microphones can be handheld, lavalier, headset. The environment you’re in plays a big part in the selection of your microphone and the polar pattern you use. For example, an omnidirectional pickup pattern can work great in the studio, but in a live environment, where stage monitors and other sound sources are present, it is important to choose a directional polar pattern. A cardioid or super-cardioid polar pattern will pick up sound from the front, and reject sound from other directions; reducing the chance of feedback. Another key element to consider that will have the greatest impact on general tone quality is the type of microphone capsule you select like Dynamic, condenser and ribbon.
9	is it possible to control the noise in the mixer?	There are a few ways you can reduce noise from your mixer. Here are a few suggestions: Make sure all of your cables are properly connected and grounded. Loose or faulty cables can cause interference. Use high-quality audio cables. Cheaper cables may have more noise or interference. Keep your mixer away from other electronic devices that may cause interference, such as TVs or computers. Use a noise gate, that will automatically reduce the level of any audio that falls below a certain threshold. Use a noise suppressor, that will reduce the level of any unwanted noise in your audio signal. Use a compressor. This will help to even out the level of your audio, reducing the overall noise. Use an equalizer to reduce any unwanted frequencies in your audio signal. Remember that some noise is inherent in any audio system, but by following these suggestions, you can reduce it to a minimum.
10	How does the wireless mic transmits the electrical signal?	Wireless microphones work nearly the same as wired microphones. There’s really only one big difference between the two: the typical “wired” mic has a male XLR output connection and relies on a cable to carry its signal to the mic input. In contrast, the wireless microphone relies on a radio transmitter to broadcast its output signal to a receiver before being sent to a mic input. The microphone part of the system is just like any typical microphone. Transmitters work by transmitting the audio signal from the microphone through radio waves. The transmitter takes the microphone output audio signal, converts it to a radio signal and broadcasts it through an antenna. Wireless microphone receivers effectively receive the radio frequency of the microphone transmitter and convert it back to the audio signal. The receiver decodes the desired audio signal and should be connected to a mic level input of an audio console. Once again, for the wireless system to work correctly, the receiver must be set to receive the same radio frequency the transmitter is transmitting.

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11	is it possible to create daisy chain of multiple microphone using YVC-100.	With YVC1000 then answer is yes, you can connect upto 5 microphones in daisychain
12	Can we monitor all of these using a single platform?	If you are talking about YVC1000 then answer is no, it's a one time installation process, YVC1000 automatically measures acoustic features of the location the product is installed in as well as the positions to place the microphone and speaker, and tunes acoustic settings to the optimal level. Users are not required to make any complicated settings. No web GUI for making changes in the system.
13	Is there any inhouse training/Hands on Yamaha products ?	If you would like to discuss a training and receive more information, please contact us at this e-mail address: support_in@inquiry.yamaha.com We also provide a range of materials for self-study via our website. Training and events will be announced via our social networking websites: https://in.yamaha.com/en/products/contents/proaudio/training_support/index.html LinkedIn: https://www.linkedin.com/company/yamaha-music-india-pro-audio/ Facebook: https://www.facebook.com/YMINPA
14	Can we get a copy of the presentation too	Participants will receive the data in PDF file format separately.
15	how many mics can connect in 1 system	With YVC1000 you can connect upto 5 microphones and Up to two external microphones such as a handheld microphone or pin microphone can be connected to the product. If you want to amplify the sound in your location when having a conversation with the remote location, connect an external microphone.
16	kindly specify role of connection cables ie. its impedance for lowZ as well as Hi z.. speakers.	When determining which wire gauge to use, consider how far away the speakers are from your amplifier or A/V receiver. Generally, for short speaker wire runs, a 16-gauge wire is sufficient. However, for longer speaker wire runs (to another room, for example), it is better to use a thicker, lower-gauge wire
17	can you specify the distance need to consider for Lo - z and Hi - z	Low impedance (Low Z, 8ohm / 4 ohm or Direct Coupled) lines are used normally in the case of a low number of loudspeakers, placed at a minimum distance from the amplifier of less than 20 metres. In contrast 70 / 100v line voltage connection systems (ie. High Impedance or Constant Voltage) offer a host of advantages making it ideal for sound systems of all sizes, above all in the case of long distance speaker runs.
18	is PGM power and RMS is same?	RMS - The continuous power requirements for a particular speaker's usage. Program - This is usually double RMS, and what a speaker handles in bursts. Peak - This is what a speaker can handle in a very short time, before damage can occur to the voice coil.
19	Can you please simplyfy how does SPL effects the quality of sound?	In audio, SPL plays an essential role because it is the correct way of measuring the perception of loudness. In other words, SPL measures the strength of a sound wave when emitted from a speaker. It has no relation with the quality of the speaker
20	Are there any plans for the MTX processor training ?	If you would like to discuss a training and receive more information, please contact us at this e-mail address: support_in@inquiry.yamaha.com We also provide a range of materials for self-study via our website. Training and events will be announced via our social networking websites: https://in.yamaha.com/en/products/contents/proaudio/training_support/index.html LinkedIn: https://www.linkedin.com/company/yamaha-music-india-pro-audio/ Facebook: https://www.facebook.com/YMINPA
21	What's the difference between PGM and RMS?	RMS - The continuous power requirements for a particular speaker's usage. Program - This is usually double RMS, and what a speaker handles in bursts. Peak - This is what a speaker can handle in a very short time, before damage can occur to the voice coil.
22	Which Microphones are best for Conference System Gooseneck or Boundary	Both types of microphones are well versed for conference room applications. Boundary microphones certainly meet the criteria for today's conference room. They are usually placed 15 to 40 inches away from the participant. Because the microphone element is in such close proximity to the table surface, out-of-phase problems are virtually non-existent. This is the result of direct and reflected sound reaching the capsule almost simultaneously. Some boundary layer microphones have multiple elements. This solution not only minimizes the number of microphones on the conference table, but also involves less labor, without sacrificing audio performance. Gooseneck microphones are very popular in boardrooms /conference rooms. Offered in different patterns, lengths and sizes, they are often selected when gain before feedback is a major concern. Because of their reach, they can bring the microphone capsule much closer to the source and therefore increase the intelligibility of speech in difficult situations. Another situation would be, when using laptop computers. Opening a laptop in front of the microphone will block the boundary layer microphone's pick-up pattern, making it unusable. Here, a gooseneck microphone with a longer shaft would be more appropriate.
23	Hi can we add a sound controller after the amplifier in a BGM system to control a specific speaker in the same channel?	We should not add controller after the amplification of the sound
24	how are the UC mic and speaker systems (YVC-1000) connected ? eg : POE cable	The main Speaker unit and microphones are connected via Cat5E cables
25	What causes low impedance?	This is question is irrelevant
26	i want more details boundary mic distance and cover area	There is no generic answer to this question. Depends on the Manufacturer. Please refer to Manufacturers data sheet
27	is there any role of the Crest factor in amplifiers? for low z or high z.	Yes , Low-z generally has lower crest factors compaired ti Hi-Z
28	how can we calculate no of speakers required for a particular area	The right way of doing this is through speaker simulation softwares of manufacturer to get the right information. Yamaha has Cissca or NS1
29	Is high impedance good or bad?	Impedance has nothing to do with Good or bad. It is just the resistance
30	Dear Sir please Share today webinar video Clip.	Video data is available on AVIXA TV. https://www.avixa.org/avixa-tv

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31	what is difference between RMS and PMPO in sound term??	The RMS power value is the real music power output of a speaker. It is a true indication of the output power across the full range of frequencies produced by a given speaker. PMPO (Peak Music Power) refers to the maximum amount of power output that the speaker could produce if driven to its peak
32	When we design a system what we see first its power or driver size?	It neither , It is always the SPL required at a place and application of the speaker
33	if we are considering PGM for designing, Then why there is a huge difference from PGM to Peak power of the amp. It is 50%. Can we consider 20-30% while designing.	Its better to consider atleast 1.5X of the PGM rating
34	How bit rate is related to bandwidth?	Bit rate is the measurement of Dynamics and frequency band is the Frequency respons of the speaker.
35	Does putting Hi-Z speakers with total wattage more than power available from amp channel connected to them, impact amp functioning of amp (if amp is not clipping)?	It will effect and damage the amplifier
36	Do we required AEC DSP in Soft VC applications like Teams, Zoom etc. with external sound reinforcement system (spk & Amp)..??	Yes using external sound system it is always important to have the AEC in the DSP processing
37	How to select spekaers based on the room size ? For example 20 seater board room, what is the requirement of speaker wattage and Amplifier? ohms and wattage requirement?	It neither , It is always the SPL required at a place and application of the speaker
38	if we connect multiple speakers on a single channel at 2ohms will there be any loss in sound quality comapred to that of a single channel single speaker connection?	No there would be no change in the quality of the sound , there will be only change in power output
39	what is speaker selection criteria with respect to person or area ?	The right way of doing this is through speaker simulation sofwares of manufacturer to get the right information. Yamaha has Cissca or NS1 and understanding the SPL requirement and the application of the system
40	Do you have any dedicated training on audio mixing?	If you would like to discuss a training and receive more information, please contact us at this e-mail address: support_in@inquiry.yamaha.com We also provide a range of materials for self-study via our website.Training and events will be announced via our social networking websites: https://in.yamaha.com/en/products/contents/proaudio/training_support/index.html LinkedIn: https://www.linkedin.com/company/yamaha-music-india-pro-audio/ Facebook: https://www.facebook.com/YMINPA
41	SO MAIL ID PLEASE	Additional questions or queries can be directed to this support email address: support_in@inquiry.yamaha.com