**Subject:** Council Chamber Amplification System - FC190823 99.1a

**Background/Introduction**

Following a large meeting within the Council Chamber complaints were made that individuals were unable to hear conversations. Some were councillors whom have fitted hearing aids and some were members of the public to the rear of the room. It is worth noting that the room is fitted with a hearing induction loop system, which after the event was tested and found to be operating correctly. It is in some instances that newer hearing aids need to be switched to the correct position to enable this function to work properly, other hearing aids simply do not adjust.

**Details**

Our landlords were approached to see if a method could be gained utilising the existing hearing loop system. It is not possible to add to the existing system however, the contractor (Ensure Fire Safety) did come back with a price for two speakers a 60w amp and two microphones ceiling mounted from the same amp.

From this a delegated authority has been granted to Finance and Governance within a budget of £1000 + vat.

The FCM asked two other companies to quote and given them the information above as well as supplying images of the room in question, the building fabric, room dimensions, ceiling height and construction for acoustics. The advice given was not to have microphones attached to the amplifier directly as the likelihood of interference/feedback would be high.

One has not quoted and the other PVS Solutions Ltd have quoted as below:
## COUNCIL CHAMBER

### PA SYSTEM

<table>
<thead>
<tr>
<th>IMAGE</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
<th>PRICE EXT</th>
<th>LABOUR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image]</td>
<td>2</td>
<td>Vaddio 999-85100-000 Ceiling MIC System White or Black</td>
<td>£524.66</td>
<td>£1,049.32</td>
<td>£0.00</td>
<td>£1,049.32</td>
</tr>
<tr>
<td>![Image]</td>
<td>1</td>
<td>Vaddio 999-8535-000 EasyUSB MicPOD I/O</td>
<td>£601.31</td>
<td>£601.31</td>
<td>£0.00</td>
<td>£601.31</td>
</tr>
<tr>
<td>![Image]</td>
<td>1</td>
<td>APart MA125 125w 100v Line Mixing Amplifier</td>
<td>£337.00</td>
<td>£337.00</td>
<td>£0.00</td>
<td>£337.00</td>
</tr>
<tr>
<td>![Image]</td>
<td>6</td>
<td>APart CM20T White 6.5&quot; 2 Way Ceiling Speaker 100v 20w / 16ohm 60w</td>
<td>£46.00</td>
<td>£276.00</td>
<td>£0.00</td>
<td>£276.00</td>
</tr>
<tr>
<td>![Image]</td>
<td>1</td>
<td>PVS Installation including cables, connectors and sundries</td>
<td>£0.00</td>
<td>£0.00</td>
<td>£560.00</td>
<td>£560.00</td>
</tr>
</tbody>
</table>

**COUNCIL CHAMBER TOTAL**

£2,823.63
The FCM has gone to others on the market with similar detail and gained a quotation for almost identical products but hand held battery operated microphones as cheaper alternative. It is possible to have simply two microphones or provision of four microphones.

This method ensures the controlled volume of the speakers is throughout the room and not just at one end and would assist Councillors less able to hear to actually hear. The transcript of conversation can be seen below with all product details.

Destiny Entertainments
T/A Audio Installations
Unit C7, J31 Park
Motherwell Way
West Thurrock
RM20 3XD

info@audioinstallations.co.uk
Call us at 020 3326 0903
https://audioinstallations.co.uk

Please see the transcript of our online conversation to the end of this document for further information and the links to the products.
Bluetooth Ceiling Speaker System. 8 x Power Dynamics C SP65 Ceiling Speaker 100V 6.5" + 1 x PBA120 100V Line Amplifier 120W with Bluetooth USB FM - School Announcementsystem. Free 50m Speaker cable

100V Line PA system, great for installation into commercial buildings for use as an announcement vocal reinforcement system. The 120w mixer amplifier also has Bluetooth functionality for streaming from a smartphone or tablet for background music in waiting areas and cafeterias.

Power Dynamics C SP65 Ceiling Speaker 100V 6.5"

Product Description

Power Dynamics have recently expanded into 100v ceiling speakers bringing their wealth of knowledge and years of audio R&D to their new line. These high quality 6.5" fitted speakers sit perfectly in ceiling tiles or can be wall mounted and come with spring-loaded positioning clips for fitting the speakers flushly to any surface. All speakers are fitted with matching transformers for 100V line tapping. Housed within a White finish ABS frame making them discreet and tidy as well as robust and hardwareing. Perfect for use in offices, bars, showrooms, restaurants and even home use.

Features
- Great sound quality
- 100V operation

Specifications
- Tappings: 5W, 10W @ 100V
- Frequency response: 130Hz - 16kHz
- WOker: 65.5 SPL @ 1w/1m: 92dB
- Mounting depth: 77mm
- Dimensions: 188 dia x 85mm
- Weight: 0.7kg

Power Dynamics 952.095 PBA120 100V Line Amplifier 120W

Product Description:
Product Description:

This amplifier with excellent performance and reliability is particularly suitable for a wide range of small and medium-sized installations. The amplifier is equipped with USB / SD ports for MP3 playback and has an MP3 control panel. It is equipped with a built-in equalizer. 3 microphone inputs and 2 stereo line inputs. Speaker outputs have options for 4, 8 and 16 ohms as well as 70V and 100V.

Features:
- 120W PA amplifier
- MP3 player with USB and SD slot
- BT receiver for Audio streaming
- Built-In Equalizer with presets
- IR-remote control
- 100V / 70V or 18, 8, 4 Ohm
- Bass and Treble control
- Balanced Microphone input with priority
- 2 Microphone line inputs (6,35mm Jack)
- 2 stereo line inputs (RCA)
- Stereo RCA Line output
- Telephone input
- MÖH output

Specifications:
- Power rms: 120W
- Tappings: 4/8/16 Ohms 70V / 100V
- Frequency response: 50Hz - 18kHz
- Signal to noise ratio: > 75dB
- Input sensitivity: Line: -45dB
- Input sensitivity: Mic: -50dB
- Power supply: 100-240VAC / 50-60Hz
- Dimensions: 320 x 238 x 88mm
- Weight: 4.6kg
Q Audio QWM 1940 V2 HH UHF Dual Ch Wireless System 2x Handheld Mic Transmitters

For advice or help designing a bespoke audio system
Call now: 020 3326 0903

SKU: LLA3399
SHIPPING: Free Shipping

£129.00

QUANTITY: 1

ADD TO CART  ADD TO WISH LIST
QWM 1940 V2 HH - Q Audio: UHF Dual Ch Wireless System + 2x Handheld Mic Transmitters

- Rugged finish multi-channel receiver plus 2 mic transmitters
- Individual channel volume controls & LED status indicators
- ACT infrared pairing of mics to receiver
- 2 x balanced XLR outputs
- 1 x unbalanced 6.35mm jack mixed output
- Includes receiver, 2 x mics, batteries, PSU and audio cable
- High efficiency battery consumption design
- 2 x adjustable high gain antenna
- Working distance: 50 meters
- Continuous usage: 5 hours
- Optional bodypack kit available separately

- 16 channel frequency range: UHF 883.0 to 886.5 MHz
- Automatically calibrated frequency stabilisation
- Dynamic range: -80dB / Total harmonic distortion: <0.4 percent
- Image and spurious rejection: -80dB
- Border upon channel rejection: -80dB
- Receiving sensitivity: -95dBm / De-emphasis: 75uS
- Receiver power supply DC 17V 300mA
- Receiver dimensions: 270 x 175 x 50mm (WxDxH)
- Handheld transmitter power: 10mW
- Spurious emission: -65dB
- Mic battery voltage: 3V (2 x 1.5V AA batteries)
- Mic dimensions: 48 x 48 x 230mm (WxDxH)
PD PD504H 4x 50-Ch UHF Wireless Microphone Set with 4 Mics

For advice or help designing a bespoke audio system
Call now: 020 3326 0903

SKU: LLA3474
SHIPPING: Free Shipping

£279.99

DESCRIPTION
The Best Music System for Systemline 7

Systemline 7 is a multi-room system which has been chosen to offer the best possible performance.

**DESCRIPTION**

![Image of audio equipment](image)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1178.004 - Power Dynamics, PDISO4H 4x 50-Ch UHF Microphone Set W/ 4 Handheld Microphones</td>
<td></td>
</tr>
<tr>
<td>- 4x Handheld microphones with mute function</td>
<td></td>
</tr>
<tr>
<td>- 4x 50 Selectable non-interfered UHF channels</td>
<td></td>
</tr>
<tr>
<td>- IR data transmission for channel selection</td>
<td></td>
</tr>
<tr>
<td>- 4x balanced XLR outputs</td>
<td></td>
</tr>
<tr>
<td>- CPU controlled</td>
<td></td>
</tr>
<tr>
<td>- PLL oscillator</td>
<td></td>
</tr>
<tr>
<td>- Transmitters with display showing the frequency and battery low indication</td>
<td></td>
</tr>
<tr>
<td>- Equipped with Dynamic LCD</td>
<td></td>
</tr>
<tr>
<td>- Supplied in aluminium carrying case</td>
<td></td>
</tr>
<tr>
<td>- Operating frequency: 826.300 - 831.200 / 883.000 - 885.000</td>
<td></td>
</tr>
<tr>
<td>- RF output:</td>
<td></td>
</tr>
</tbody>
</table>

**Related Products**

- What are the warranty periods on all of the products please?
- 2 years

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*Call now: 020 3328 9993*
Hi, can I help?

Hello

We have a conference room that is 71.6 sq metres. It is approximately 5 metres wide and on one side is glass screening with integrated blinds and entrance doors. The other side is solid wall, the ceiling is of suspended tiles at a height of 2.4m. We have some individuals that are hard of hearing and struggle even with our induction loop system. To this the general public at the rear struggle to hear people at the front. Therefore we are looking for a system that will incorporate a microphone or two over the tables which span 9.5 metres from the front and speakers mounted in the ceiling to accommodate and to the rear of the room. I have seen the bluetooth speaker system on your site at £259. Presumably otehrs would not be able to tap into the system and what do you recommend for the microphones? Could i have two bluetooth ones in the suspended ceiling?

hi

Hi Nick, ill give you a second to read and understand our situation

Just a quick one

do you think the speakers are totally wireless and bluetooth?

Thats how i perceived it.

the bluetooth for for pairing a audio device such as phone or tablet etc to the system for music playback

unfortunatly there is no such thing as totally wireless speakers at the moment, the technology just doesnt exist

Thats fine

all ceiling speaker systems will require some form of cabling

the system you are looking at I assume is the 8 speaker system?

Yes

that would cover 71m2 no problem
you just need to connect the microphones to the mixer amp
run one cable from the amp to the closest speaker
then daisy chain from speaker to speaker

Easy enough, what about two ceiling mounted microphones given that there would be 20 people around the table? Also at the end of the 14m long room members of the public.

i think you might end up with lots of feedback
I would recommend wireless handheld mics that could be passed around

What would you suggest?
on a budget these are great

https://audioinstallations.co.uk/q-audio-qwm-1940-v2-hh-uhf-dual-ch-wireless-system-2x-handheld-mic-transmitters/

I see. Given our room is 5m x 14m what speaker cable would i need (4ohm)?

Also given that we are a local council presumably an account would be no problem to set up?

0.5mm speaker cable is fine

0.75mm

no problem

we just need a Purchase order from your .gov email

Ok thanks for that. Another question, if i perhaps wanted more mics what other option is there please?

im afraid not
you would be better off getting this system is you want more mics

https://audioinstallations.co.uk/pd-pd504h-4x-50-ch-uhf-wireless-microphone-set-with-4-mics/

Thats great. If i were to give you my email address would you be able to quote for what we have discussed given the two mic options please?
the online prices are the best I can do, the packages are already highly discounted

if you create the PO using the code on the site and email to info@audioinstallations.co.uk we can take it from there

Thats fine and understood, i will need to formailise it thats all

no problem

my email address is: mark.speller@lowestofttowncouncil.gov.uk

no probs, speak soon

Thanks for your assistance today.

you are welcome

Nick, sorry if the amp and mic box were behind a solid wall would they still pick up? Presumably the mic box needs hard wiring to the amp? 

the mic reciever needs to be in the room

you could have the amp in another room

but you would need to hard wire the reciever to the amp

That clarifies that. Thank you again

no worries

What are the warranty periods on all of the products please

2 years

Hi, can I help?

Hello, i was discussing the CSP0006 bundled with either LLA3399 or LLA3474. Does the mic box come with the relevant cabling to attach to the amp and if so how long is the cable please? Also can you supply say 20 of the female spade connectors to fit to the speakers and cable
Hi

Just a thought, do you have chargeable mics as oppose to having to keep changing batteries. Such as a docking station please?

Yes the microphone system comes with the cable, its only short 0.5m, really the reciever should sit local with the amp

there is no need for spade connectors
the cable connects direct to the amp and ceiling speakers

There are microphone systems from JTS with docking chargers, but they are costly, you would be looking around £600 for a dual microphone systems

Wow. So forgive me if i daisy chain the speakers with the cable provided how do they connect to the speaker? twisting the cable
as you can see from the pic

you simply connect to the connector block

Thats easy enough thank you and makes more sense now.

Ok Nick thanks again for the clarification.

Cost breakdown

<table>
<thead>
<tr>
<th>Line No.</th>
<th>Quantity</th>
<th>Code</th>
<th>Description</th>
<th>Cost + vat</th>
<th>Warranty Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>A)</td>
<td>1</td>
<td>CSP0006</td>
<td>Bluetooth Ceiling Speaker System, 8 x Power Dynamics C SPB5 Ceiling Speaker 100V 6.5” + 1 x PBA120 100V Line Amplifier 120W with Bluetooth USB FM - School Announcement System. Free 50m Speaker cable.</td>
<td>£259.00</td>
<td>2 Years</td>
</tr>
<tr>
<td>B)</td>
<td>1</td>
<td>LLA3399</td>
<td>Q Audio QWM 1940 V2 HH UHF Dual Ch Wireless System 2x Handheld Mic Transmitters</td>
<td>£129.00</td>
<td>2 years</td>
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<td>C)</td>
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<td>LLA3474</td>
<td>PD PD504H 4x 50-Ch UHF Wireless Microphone Set with 4 Mics</td>
<td>£279.99</td>
<td>2 Years</td>
</tr>
</tbody>
</table>

**OR**

A) + B) £388.00

A) + C) £538.99

Recommendations/Decision

It would be my recommendation given that we are able to set up an account and order the exact same components almost to the PVS Solutions Ltd quotation to order through Audio Installations as cost breakdown above for the four microphone system at a total cost of £538.99 + vat delivered equipment. The equipment will be sited in the Chamber and one would expect either ECCH or Norse to install for around £320 + vat. Quotations pending and that the landlord would consent to this minor alteration.