

**2-WAY WIRELESS AUDIO HUB****PART 1. GENERAL****1.1 OVERALL SYSTEM DESCRIPTION**

- A. The system must have specifications and features that are equivalent to the Lightspeed Access Link wireless audio hub, including the following:
1. Access Link audio hub with integrated Access Technology 2-way wireless audio communication
  2. Pendant-style Flexmike® classroom microphone with audio input utilizing Access Technology (1.9 GHz) for transmission. IR not acceptable.
  3. Up to two microphones for whole room instruction, team-teaching or student sharing
  4. Wireless transmission range of up to 200 feet
  5. Mic/Line level balanced and unbalanced audio outputs for connection to virtually any audio amplifier
  6. One audio input with volume control
  7. Tone Control
  8. Optional wireless Media Connector utilizing Access Technology for wireless integration of up to 4 additional devices
  9. Optional Activate Charging Station with Access Technology, Bluetooth and Wireless Media Connectivity for integration with mobile devices and laptops:
    - a. Includes 2 channels of 2-way Bluetooth Audio
    - b. 4 audio input connections, 2 audio outputs with volume controls
    - c. Cradle charging for 2 pendant microphones, eight (8) 2-way audio Pods
    - d. USB ports to charge up to four (4) additional 2-way audio Pods
    - e. Bluetooth connection with Activate mobile app for control, streaming and audio/video recording of classroom instruction and interaction
    - f. Mobile device control of system volume levels, Activate Pod selection, and advanced system settings.
  10. Optional Activate Pods with 2-way audio communication featuring the following functionality:
    - a. Integrated speaker and microphone to enable 2-way communication between the teacher and each small group
    - b. Wireless audio communication and battery power for maximum portability.
    - c. Up to 12 speaker Pods can be connected to Access Link for each small student group.
    - d. Enables student sharing directly from the Pods so students can be clearly heard by the whole class.
    - e. Must include a call button allowing students to notify the teacher when they need assistance.
  11. Optional handheld remote control to select and direct communication with small Activate Pods volume levels when mobile device is not present
  12. Table-top or wall-mount

- B. The system shall carry a standard warranty equivalent to the Lightspeed 5-year Warranty.
- C. The system must be compatible and expandable to operate with 2-way small group speaker Pods allowing interoperability between both small group and whole group instruction.
- D. The system shall carry a “No Audio Dropout Guarantee” between the wireless microphone and the sound system. The guarantee applies to operation in any room up to its expected range of 200 feet (assuming no walls). The guarantee does not extend into other rooms separated by walls as this can limit transmission range significantly. Should any dropout in audio transmission occur, the manufacturer would correct it at no additional charge.
- E. Systems utilizing Infrared (IR) or 2.4 GHz wireless transmissions are unacceptable due to the possibility of interference with wireless networks and other classroom technologies.

## 1.2 OWNER INSTRUCTION

- A. Owner’s Instruction: user-training will be performed by the manufacturer’s local representative. The training will include a video on the research and benefits of classroom audio, system operation, simple troubleshooting guidelines, and incorporating the classroom audio into teaching styles. The manufacturer will also provide additional training in trouble-shooting techniques and product return procedures to one specified person per campus.
- B. A Daily Use Guide is included to provide information on how to use the system. In addition, instruction materials and detailed Owner's manual shall be available on manufacturer’s website to cover complete operational and basic maintenance procedures.

## **PART 2. PRODUCTS**

### 2.1 ACCESS LINK WIRELESS AUDIO HUB SPECIFICATIONS

- A. Wireless communication: Access Technology (1.9 GHz + RF4CE)
- B. Wireless transmission range: up to 200 ft (60m) open field
- C. Line level audio output (nominal): 316 mV RMS (2V RMS max)
- D. Mic level audio output: -40 dB of line level mode
- E. Frequency response: 120 Hz to 8 kHz
- F. DC power input: 5V/250mA micro-B USB connection
- G. Total Harmonic Distortion: <1% @ 10 W
- H. Automatic power on when Flexmike is powered on and linked
- I. Dimensions (W x D x H): 7.6” x 5” x 1.13” (193 x 127 x 29mm)

- J. Weight: 9.5 oz. (269g)
- K. Controls:
  - 1. (1) Power button with LED
  - 2. (1) Microphone volume control
  - 3. (1) Audio input volume control
  - 4. (1) Tone Control
  - 5. (1) Mic/Line audio output level control
- L. Connections:
  - 1. (1) Audio input (3.5mm)
  - 2. (1) Unbalanced audio output (3.5mm)
  - 3. (1) Balanced audio output (3-pin euro-block)
  - 4. (1) Lightspeed amplifier interface: audio out + DC power in (RJ45)
  - 5. (1) USB power input
- M. Device Registration: push button for transmitter(s), remote(s), speaker pods, media connector
- N. The wireless audio hub and its components must be UL Listed to meet the standards and requirements for electrical safety by Underwriters Laboratories Inc.

## 2.2 FLEXMIKE PENDANT-STYLE MICROPHONE / TRANSMITTER

- A. Description: the pendant-style Flexmike transmitter shall contain microphone volume control on the unit allowing users to adjust volume level from anywhere in the classroom. The Flexmike shall be capable of being worn around a teacher's neck as a hands-free microphone via the lavalier cord or to be used as a handheld student pass-around microphone. The Flexmike must be rechargeable via cradle charger or Activate Bluetooth Charging Station and must have alkaline charge protection.
- B. Wireless communication: Access Technology (1.9 GHz)
- C. Transmission range: up to 200 ft (60m)
- D. Audio distortion: <1%
- E. Integrated microphone type: uni-directional electret
- F. Input jack for audio source or optional external microphone: 3.5mm
- G. Earbud input: 3.5mm TRRS (for monitoring optional Activate Pods)
- H. Registraton: push button for registration with Access Link
- I. Microphone input impedance: 2.2k  $\Omega$
- J. Volume control range: (7 dB (total range = 12 dB)
- K. Volume control level: 7 levels (2 dB change per level)
- L. Power: on/off/mute button
- M. Indicators: 2 Blue/red LEDs on top of Flexmike for registration, Mic 1/Mic 2 indicator, power, mute
- N. Alkaline Charge Protection: Yes

- O. Charging: Integrated battery charger. The 5V power can be supplied via a cradle charger (charges two Flexmike transmitters)
- P. Battery run time: up to 8 hours
- Q. USB Audio: interface with computer USB audio while charging
- R. Battery Power: 2.4V NiMH rechargeable battery (Part# NH2.4V)
- S. Dimensions (L x W x D): 2.9" x 1.1" x 1.0"; (73 x 28 x 25mm)
- T. Weight (with battery): 1.8 oz. (51g)
- U. Lanyard: Magnetic clasp

### 2.3 OPTIONAL SHAREMIKE WIRELESS HANDHELD MICROPHONE

- A. Wireless communication: Access Technology (1.9 GHz)
- B. Transmission range: up to 200 ft (60m)
- C. Audio distortion: <1%
- D. Integrated microphone type: uni-directional electret
- E. Auxiliary Input: 3.5mm
- F. Registrar: push button for registration with Access Link
- G. Power: on/off/mute button
- H. Indicators: 2 Blue/Red LEDs for registration, Mic 1/Mic 2 indicator, power, mute
- I. Charging: 5V USB; 3.5mm DC jack
- J. Battery Power: 2 AA NiMH rechargeable battery pack
- K. Battery run time: up to 8 hours
- L. Alkaline Charge Protection: Yes
- M. Dimensions (L x W x D): 8.25" x 1.3 x 1.3" (209 x 33 x 33mm)
- N. Weight (with batteries): 7.9 oz (224g)

### 2.4 OPTIONAL WIRELESS MEDIA CONNECTOR

- A. Description: Integrates with classroom audio sources to send the audio wirelessly to the Access Link system anywhere in the room.
- B. Wireless communication: Access Technology (1.9 GHz)
- C. Transmission range: up to 200 ft (60m)
- D. Audio Inputs: (4) 3.5mm stereo jacks connect to classroom audio sources.
- E. Audio Outputs: (2) 3.5mm jack with volume control
  1. (1) Microphone volume control
  2. (1) Audio input volume control
  3. (1) Audio output volume control
  4. (1) Power button with LED

- 5. (1) Tone control
- 6. (1) Registration button with Registration LED and linked LED
- F. Audio frequency response: 80 Hz to 7 kHz  $\pm$ 3 dB
- G. Audio distortion: <1%
- H. DC Power Input: USB 5V/1.5A
- I. Mounting: table-top or wall
- J. Dimensions (W x D x H): 7.6"x 4.1"x 1.1" (194mm x 150mm x 27mm)

## 2.5 OPTIONAL ACTIVATE CHARGING STATION WITH ACCESS TECHNOLOGY, BLUETOOTH AND WIRELESS MEDIA CONNECTIVITY

- A. Description: Device charging station with wireless audio and Bluetooth connectivity. Activate utilizes 2-way audio communication to integrate audio sources and mobile devices with Access Link anywhere in the room.
  - 1. Integration with Activate mobile app for control, streaming and audio/video recording of classroom instruction and interaction.
  - 2. Mobile device control of system volume levels, Activate Pod selection, and advanced system settings.
- B. Mobile app functionality: Bluetooth interface with companion mobile application with the following functionality:
  - 1. Control and connect to small group 2-way audio Pods
  - 2. Adjust system audio levels and tone control
  - 3. Mobile device audio streaming from audio books, podcasts, music, etc.
  - 4. Audio/video recording synched with microphone and Pod audio
  - 5. Enable advanced system features
- C. Wireless Communication: Access Technology (1.9 GHz + RF4CE), Bluetooth audio (2 channels), Bluetooth LE (2 channels)
- D. Wireless range: Up to 200 ft. (60m) from Access Link, up to 100 ft. (30m) from mobile device.
- E. Audio frequency response: 80 Hz to 7 kHz  $\pm$ 3 dB
- F. Audio distortion: <1%
- G. Cradle charging: 2 Flexmikes; 8 Pods
- H. USB charging ports: Two (2) 5V/0.3A charging for Pods, remotes, or Sharemikes; Two (2) 5V/1.0A charging for mobile devices or Pods.
- I. DC Power Input: 24V/1.75A
- J. Auxiliary Power Input: 5V USB from portable power source (no device charging)
- K. Audio Inputs: (4) 3.5mm stereo jacks with volume control
- L. Bluetooth Audio: (2) independent 2-way Bluetooth audio channels
- M. Audio Outputs: (2) 3.5mm jack with volume control

- N. Volume controls: Master microphone, audio input, audio output with 10-segment level indicator
- O. Device Pairing: (2) push buttons for Bluetooth device pairing, (1) push button for Access device registration
- P. Mounting: table-top
- Q. Dimensions (W x D x H): 13.3”x 5.9”x 1.9” (340 x 150 x 52mm)
- R. Weight: 1.85 lbs. (0.84kg)

## 2.6 OPTIONAL 2-WAY AUDIO PODS FOR SMALL GROUPS

- A. Description: 2-way audio Pod with integrated speaker and microphones. Up to 12 Pods can be connected to a single audio system
- B. Wireless Communication: Access Technology (1.9 GHz)
- C. Wireless range: Up to 200 ft. (60m) from Access Link; up to 100 ft. (30m) with walls
- D. Integrated speaker: 1” high output speaker
- E. Power output: 1 Watt per Pod speaker
- F. Integrated microphones: Two (2) Omni-directional electret with noise rejection
- G. Headphone output: 3.5mm
- H. Controls: Power on/off button, volume up/down buttons, teacher call button
- I. Battery power: 2.5V NiMH rechargeable battery pack
- J. Battery charging: 2 contact for cradle charging + 5V/0.3A micro-USB
- K. Battery life: 10+ hours (fully charged)
- L. Dimensions: 5.2” x 2.1” 1.1” (132 x 54 x 28mm)
- M. Weight: 6.4 oz. (181g)

## 2.7 OPTIONAL HANDHELD REMOTE (1-2)

- A. Description: Handheld remote control to select and direct communication with small student groups
- B. Battery Power: 2.4V NiMH battery pack
- C. Charging: 5V USB
- D. Wireless communication: Access Technology (RF4CE)
- E. Controls: Pod selection 1-6; whole class selection; microphone mute; earbud volume
- F. Registration: push button and LED for registration with Access Link
- G. Dimensions (L x W x H): 4.25” x 2.0” x 1.0” (108 x 51 x 25mm)  
Weight: 3.4 oz (98g)

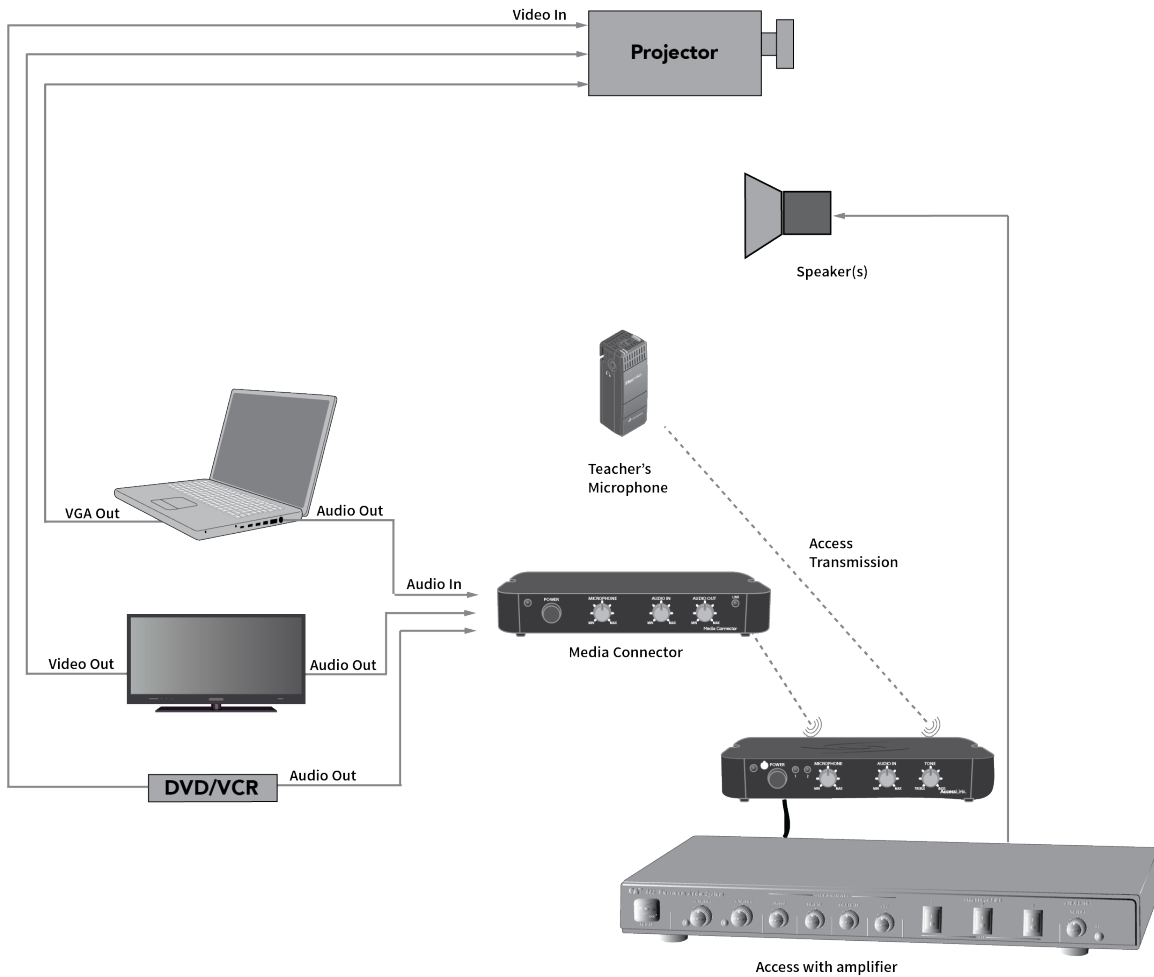


2.8 REGULATORY AND CERTIFICATIONS

- A. The classroom audio system and its components shall be manufactured using lead-free processes and free of other materials harmful to the environment (RoHS and WEEE compliant).
- B. The classroom audio system and its components shall be listed to UL/CUL standards and requirements for electrical safety by Underwriters Laboratories Inc.
- C. The classroom audio system and its components shall be CE Certified and conform with the essential requirements of the following European Union Directives: 2014/30 EU Electromagnetic Compatibility (EMC), 2014/35/EU Low Voltage Directive (LVD) and RED 2014/53/EU.
- D. The classroom audio system and its components shall comply with Part 15 of the FCC rules as a Class B digital device (FCC Certified).

## 2.9 INTEGRATING THE ACCESS LINK WITH OTHER AUDIO SOURCES

The Access Link with amplifier must have up to four audio inputs to allow other audio sources to be played through the system. Computers, laptops, DVD/VCR's, LCD displays, etc. may be connected into the amplifier using appropriate patch cords. See the systems integration chart below.





**2.10 ACCESS LINK INTEGRATION USING ACTIVATE STATION**

The wireless Activate Station must have four additional audio inputs plus 2 Bluetooth audio channels to allow other audio sources to be wirelessly transmitted and played through the Access Link. Computers, laptops, mobile devices, DVD/VCR's, LCD displays, etc. may be connected into the Activate Station via Bluetooth or using the appropriate patch cable. The Activate Station must also receive audio back from the Access Link to output the mixed audio signal of both microphone channels as well as selected Pods for audio/video recording to the mobile device and interface with assistive listening devices. Activate Station must also communicate with mobile devices via Bluetooth LE for selection and control of small group audio Pods and system volume levels.

