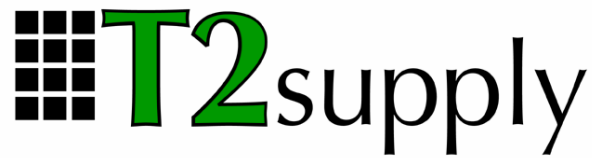


Vortex Sales Study Guide

1. The PDF reports generated by Conference composer include information on matrix settings, equalization settings and echo cancellation settings.
 - a. False
 - b. True
2. Reverberation can make the local signal sound.
 - a. Fluffy
 - b. Dopey
 - c. Happy
 - d. Muddy
3. The Noise canceller in the EF2280 looks for
 - a. The number of microphones
 - b. Steady background noise
 - c. All of these
 - d. Noise that is random and moving
4. What type of microphones is not advised for audio conferencing?
 - a. Push to talk
 - b. Wireless
 - c. Omni directional
 - d. Directional
5. What can one do with the conference composer software?
 - a. Upgrade the firmware in the ViewStation
 - b. Change the user interface on the iPower platform
 - c. Change the equalization of the SoundStation VTX1000
 - d. Configure the Vortex products
6. The Vortex products can operate with
 - a. SoundStation VTX1000
 - b. Video codecs
 - c. IP telephones
 - d. All of the answers
7. How many microphones does the EF2280 support?
 - a. 0
 - b. 1
 - c. 4
 - d. 8
8. The EF2241 can be used as a stand-alone audio conferencer with the addition of
 - a. Amplifier
 - b. SoundStation EX mics
 - c. Cables
 - d. Mics and loudspeakers
9. Does the EF2241 have a built-in telephony interface
 - a. Yes
 - b. No

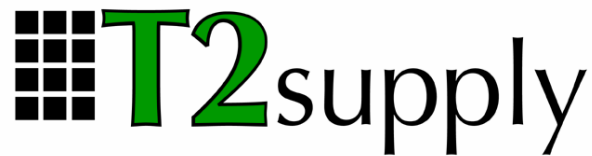
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10. The EF2211 is a:
 - a. A single channel echo canceller and phone add
 - b. Single channel echo canceller
 - c. Digital phone add with noise cancellation and RS232 control
 - d. 4 channel acoustic echo canceller with telephony interface
11. The transmission delay from sending the audio from a remote site to the local site affects the performance of the acoustic echo canceller in the local room
 - a. False
 - b. True
12. The amount of time it takes to transmit the signal from one room to another affects the performance of the echo canceller in the local room.
 - a. False
 - b. True
13. The performance of an acoustic echo canceller depends on
 - a. The room size
 - b. The microphone/loudspeaker positioning
 - c. Signal levels of the remote signal
 - d. All of these
14. Acoustic echo in the local room is :
 - a. Echo of remote speech in the remote room.
 - b. Speech that has looped through the remote room and come back to the local room.
 - c. Echo of local speech in the local room.
 - d. Echo of local speech in the remote room.
15. Why use an external AEC device if the video codec has one built in?
 - a. Support for more microphones
 - b. Large rooms with harsh acoustics
 - c. Sound reinforcement applications
 - d. All of the answers
16. Audio Echo Cancellation is for the benefit of:
 - a. The far side
 - b. The near side
 - c. Both sides
 - d. Neither side
17. Multi-channel echo cancellation is better than single channel echo cancellation because
 - a. Single channel echo cancellation works best with multiple inputs.
 - b. Each microphone is compressed before limiting.
 - c. The sum of the microphones is used together with a single echo canceller.
 - d. Each microphone has its own echo canceller and adapts faster to changes in the room.
18. The acoustic echo canceller in your room
 - a. Benefits the integrator
 - b. Benefits the local participants

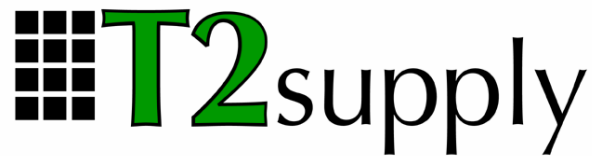
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- c. Benefits the remote participants
 - d. Benefits both sides
19. The term "AEC" in audio conferencing means
- a. Ambient Echo Cancellation
 - b. Acoustic Electrical Construction
 - c. Acoustic Echo Cancellation
 - d. Alternative Echo Control
20. Why use a Vortex with a video codec if the video codec has an internal AEC?
- a. Matrix allows for alternative audio inputs and outputs
 - b. Automixer makes the audio sound better
 - c. All of the answers
 - d. Installation is more professional
21. What type of work is involved with installing an EF2241 into a conference room?
- a. Getting an IP address.
 - b. Installing the camera, network interface, and putting a microphone on the table.
 - c. Plugging in the power supply and phone line.
 - d. Installing microphones, loudspeakers, telephone line, and a control system.
22. To reduce reverberation and increase intelligibility:
- a. Increase gain on the inputs
 - b. Decrease gain on the inputs
 - c. Use directional microphones and loudspeakers, place microphones close to talker, use acoustical treatments.
 - d. Increase gain on the outputs.
23. A microphone AGC helps to
- a. All of these
 - b. Bring down the level when it is too loud
 - c. Bring up the level when it is too quiet
 - d. Maintain the mic signal at the right level
24. The matrix in the Vortex products allows one to
- a. Adds output delay to the signal for sound reinforcement
 - b. Send any combination of input signals to outputs
 - c. Low pass filter the input signals
 - d. All of these
25. All EF22xx products have a front panel control for easy modification.
- a. False
 - b. True
26. The EF2280 is a:
- a. Digital phone add with noise cancellation and RS232 control
 - b. An infrared controller for EchoFree products
 - c. 4 channel acoustic echo canceller with telephony interface
 - d. 8 channel echo/noise canceller with automatic mic/matrix mixer
27. The EF2241 can be used as the echo canceller for VS4000

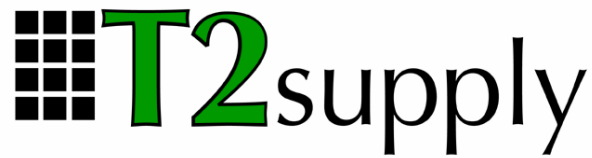
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- a. True
 - b. False
28. The EF-IR11 is a:
- a. An infrared controller for EchoFree products
 - b. Single channel echo canceller
 - c. A single channel echo canceller and phone add
 - d. Digital phone add with noise cancellation and RS232
29. Does the EF2280 have a built in telephony interface?
- a. No
 - b. Yes
30. To get the best performance you need one AEC per microphone because
- a. The approach avoids the constant switching of echo paths when different mics are gated on
 - b. Each mic has a different speaker-microphone coupling
 - c. Each mic is positioned differently in the room
 - d. All of these
31. Automatic microphone mixers
- a. Improve the audio quality by routing any input to any output with an arbitrary gain.
 - b. Improve the audio quality by turning on only the mics that are active
 - c. Improve the audio quality by turning off all the mics that are active
 - d. Improve the audio quality by directly mixing all the microphones together
32. Ceiling microphones can suffer from
- a. High noise
 - b. All of these
 - c. High reverberation
33. Automatic microphone mixers
- a. Improve the audio quality by turning off all the mics that are active.
 - b. Improve the audio quality by turning on only the mics that are active.
 - c. Improve the audio quality by directly mixing all the microphones together.
 - d. Improve the audio quality by routing any input to any output with an arbitrary gain.
34. The RDF report generated by Conference composer can be used to
- a. Document the project and leave with the end user
 - b. Import into the Vortex products to change settings
 - c. Change the device settings of the Vortex products
 - d. Imported into Autocad to show the matrix configuration.
35. The matrix in the Vortex products allows one to
- a. Low pass filter the input signals
 - b. All of these
 - c. Send any combination of input signals to outputs
 - d. Adds output delay to the signal for sound reinforcement
36. The EF2280 can be used with a video codec.
- a. False

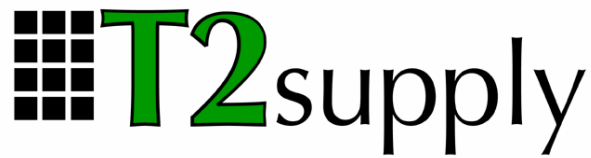
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- b. True
37. The EF2280 has a cross point matrix for creating arbitrary combinations of signals.
- True
 - False
38. Competitive features of the Vortex include
- Longer AEC tail time
 - Noise cancellation
 - 2 year warranty
 - All of the answers
39. Are microphones included with the EF2241?
- No
 - Yes
40. If an installation requires 8 microphones plus a wireless mic for conferencing, and a telephony interface I would use
- Two EF2241's
 - An EF2280 and an EF2201
 - An EF2280 and an EF2210
 - An EF2280 and an EF2241
41. The EF2201 connects to the EF2280 via
- Logic pins
 - The digital bus
 - RS-232
 - Analog input/output
42. The EF2201 phone add product does
- Interfaces the ViewStation to the Vortex products.
 - Interfaces a digital PBX telephone line to a Vortex product
 - Interfaces an IP Phone to a Vortex product
 - Interfaces a PSTN telephone line to a Vortex product
43. Key differentiators of the Vortex products include
- Color
 - Weights
 - Cost
 - Performance of Noise cancellation and acoustic echo cancellation
44. The SoundStation Premier can be used as the acoustic echo canceller for the VS4000
- True
 - False
45. If a system requires 8 microphones and two telephone interfaces, one way to solve this requirement is
- Two EF2280's
 - One EF2280 and two EF2201's
 - Two EF2280's and one EF2201
 - One EF2280 and two EF2210's

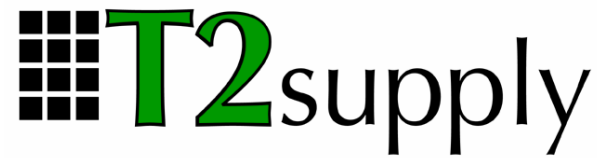
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46. The EF2210 is a:
- 8 channel echo/noise canceller with automatic mic/matrix mixer
 - single channel echo canceller
 - a single channel echo canceller and phone add
 - digital phone add with noise cancellation and RS232 control
47. The noise canceller in the EF2280
- Reduces reverberation picked up by the microphones
 - Adapts quickly to changes in the echo path when participants move
 - Reduces room noise that is heard by the local participants.
 - Reduces room noise that is picked up by the microphones so the room sounds better to the remote participants.
48. What other equipment is typically installed with an EF2280?
- Camera
 - Microphones
 - Network switches
 - Television
49. Does the EF2241 have a built-in telephony interface?
- Yes
 - No
50. To reduce reverberation and increase intelligibility:
- Use directional microphones and loudspeakers, place microphones close to talker, use acoustical treatments.
 - Increase gain on the inputs
 - Decrease gain on the inputs
 - Increase gain on the outputs
51. How many microphones does the EF2241 support?
- 8
 - 0
 - 4
 - 1
52. The EF2201 is a:
- A single channel echo canceller and phone add.
 - Digital phone add with noise cancellation and RS232 control.
 - Single channel echo canceller.
 - An infrared controller for EchoFree products.
53. A phone add device, such as the EF2201, is used to
- Bring an analog telephone call into a conference call.
 - Allow the users to have a simple control pad on their table.
 - Interface to an IP network.
 - Compute the number of participants in a conference call.
54. Push to talk microphones for conferencing should
- Mute at the element of the mic to minimize wiring.

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- b. Have an extra set of wires connected to the logic port on the EF22xx devices
 - c. Have a large button so the participants know how to use the button.
 - d. Have to be held down the whole time people are talking.
55. The eF2201 exchanges audio with the EF2280 via
- a. The RS232 interfaces on both devices.
 - b. Analog input and outputs
 - c. The logic ports on both devices.
 - d. Digital connectivity through the digital expansion bus.
56. The EF2241 is a:
- a. A single channel echo canceller and phone add.
 - b. 8 channel echo/noise canceller with automatic mix/matrix mixer.
 - c. Digital phone add with noise cancellation and RS232 control.
 - d. 4 channel acoustic echo canceller with telephony interface.

