Architects and engineering specifications

Active Line Array LBC 3251/00 Intellivox 1b

The unit shall be constructed as a short line-array of six 4” loudspeakers equipped with glass fiber diaphragms and two coaxially mounted tweeters.

All signal processing functions, necessary to properly drive a directivity controlled line-array with electronic aiming properties, shall be implemented on-board in order to reduce the overhead costs related to external connections. The complete electronics shall be mounted on a chassis that is placed in a separated compartment at the rear of the enclosure. Electronics shall consist of an audio input module, a dual input / eight output channel DSP section, a control unit, eight power amplifiers with protection circuitry (each power amplifier drives one loudspeaker) and a power supply.

The transformer balanced input section shall be equipped with a dynamic level control (DLC) circuitry to prevent analog digital converter (ADC) overdrive conditions. All necessary array signal processing shall be implemented in the digital domain by means of a 32-bit floating point DSP. The DSP shall realize appropriate output channel filters and delays with a time resolution of around 10 μs. Besides the aforementioned, the DSP shall be able to realize EQ, pre-delay, volume and auto gain, compression and gate functions as required. The DSP software and coefficients shall reside in EEPROM in order to facilitate adaptations and software updates.

The control unit shall be equipped with a fully isolated RS-485 based full-duplex serial network interface. This control unit shall serve three main functions:
• Remote monitoring of parameters like status of the DSP, amplifiers and loads, external pilot tone, status of the ambient noise sensing microphone, chassis temperature, ambient noise level, ambient temperature etc.
• Remote control of beam parameters, volume and analog pre-gain, pre-delay, EQ, auto gain configuration and surveillance related parameters.
• Updating DSP software and factory unit programming.

The audio signal shall be connected to a 6p male 5 mm pitch cage clamp connector (as WAGO series 231). The RS-485 signal shall be connected to a 5p cage clamp connector of the same type as specified above. The unit shall be equipped with a 3p male IEC mains supply connector. All connectors shall be grouped together at the upper side of the chassis and shall be accessible from the rear of the unit.

The enclosure shall be constructed of steel finished with an epoxy coating. At the rear of the enclosure a total of two bracket attachment points shall be provided (located near the outer ends). The protective front shall consist of a perforated steel grill that can be clicked onto four snap-in studs mounted on the enclosure.

The complete loudspeaker unit shall meet the following criteria:

Frequency range of a single 4” loudspeaker 230 - 10kHz on axis (+/- 3 dB), frequency range of a single 10 mm tweeter 6k - 20 kHz on axis (+/- 3 dB), max. SPL at 10 m of 92 dBSPL continuous and 96 dBSPL peak, adjustable nominal vertical opening angle of 15^0 to 40^0 (-6 dB), adjustable vertical aiming angle of - -16^0 to $+16^0$, fixed horizontal opening angle of 150^0 (-6 dB, averaged 1k to 4k Hz). Dimensions are 26.4” (670 mm) H x 5.3” (134 mm) W x 7.3” (186 mm) D. Weight 35 lbs (16 kg).

The Active Line Array Loudspeaker shall be the LBC 3251/00 Intellivox-1bfrom Bosch Security Systems,

Active Line Array LBC 3252/00 Intellivox 2b

The unit shall be constructed as a line-array of twelve 4” full-range loudspeakers equipped with glass fiber diaphragms.

All signal processing functions, necessary to properly drive a directivity controlled line-array with electronic aiming properties, shall be implemented on-board in order to reduce the overhead costs related to external connections. The complete electronics shall be mounted on a chassis that is placed in a separated compartment at the front-side of the enclosure. Electronics shall consist of an audio input module, a dual input / eight output channel DSP section, a control unit, eight power amplifiers with protection circuitry (power amplifiers one to four shall drive one loudspeaker each, power amplifiers five to eight shall drive two loudspeakers each) and a power supply.

The transformer balanced input section shall be equipped with a dynamic level control (DLC) circuitry to prevent analog digital converter (ADC) overdrive conditions. All necessary array signal processing shall be implemented in the digital domain by means of a 32-bit floating point DSP. The DSP shall realize appropriate output channel filters and delays with a time resolution of around 10 μs. Besides the aforementioned, the DSP shall be able to realize EQ, pre-delay, volume and auto gain, compression and gate functions as required. The DSP software and coefficients shall reside in EEPROM in order to facilitate adaptations and software updates.

The control unit shall be equipped with a fully isolated RS-485 based full-duplex serial network interface. This control unit shall serve three main functions:
• Remote monitoring of parameters like status of the DSP, amplifiers and loads, external pilot tone, status of the ambient noise sensing microphone, chassis temperature, ambient noise level, ambient temperature etc.
• Remote control of beam parameters, volume and analog pre-gain, pre-delay, EQ, auto gain configuration and surveillance related parameters.
• Updating DSP software and factory unit programming.

The audio signal shall be connected to a 6p male 5 mm pitch cage clamp connector (as WAGO series 231). The RS-485 signal shall be connected to a 5p cage clamp connector of the same type as specified above. The unit shall be equipped with a 3p male IEC mains supply connector. All connectors shall be grouped together at the upper side of the chassis and shall be accessible from the front as well as the rear of the unit.

The enclosure shall be constructed of steel finished with an epoxy coating. At the rear of the enclosure a total of two bracket attachment points shall be provided (located near the outer ends). The protective front shall consist of a perforated steel grille that can be clicked onto four snap-in studs mounted on the enclosure.

The complete loudspeaker unit shall meet the following criteria:
Frequency range of a single element 230 - 10kHz on axis (+/- 3 dB), max. SPL at 25 m of 90 dBSPL continuous and 94 dBSPL peak, adjustable nominal vertical opening angle of

8^0 to 20^0 (-6 dB), adjustable vertical aiming angle of -16^0 to $+16^0$, fixed horizontal opening angle of 150^0 (-6 dB, averaged 1k to 4kHz). Dimensions are 70.1” (1780 mm) H x 5.3” (134 mm) W x 3.6” (92 mm) D. Weight 55 lbs (25 kg).

The Active Line Array Loudspeaker shall be the LBC 3252/00 Intellivox-2b from Bosch Security Systems.

Active Line Array LBC 3253/00 Intellivox 2c

The unit shall be constructed as a line-array of sixteen 4” full-range loudspeakers equipped with glass fiber diaphragms. The position of the individual loudspeakers shall be according to a special patented scheme.

All signal processing functions, necessary to properly drive a directivity controlled line-array with electronic aiming properties, shall be implemented on-board in order to reduce the overhead costs related to external connections. The complete electronics shall be mounted on a chassis that is placed in a separated compartment at the front-side of the enclosure. Electronics shall consist of an audio input module, a dual input / eight output channel DSP section, a control unit, eight power amplifiers with protection circuitry (each power amplifier shall drive one pair of loudspeakers) and a switched-mode power supply.

The transformer balanced input section shall be equipped with a dynamic level control (DLC) circuitry to prevent analog digital converter (ADC) overdrive conditions. All necessary array signal processing shall be implemented in the digital domain by means of a 32-bit floating point DSP. The DSP shall realize appropriate output channel filters and delays with a time resolution of around 10 μs. Besides the aforementioned, the DSP shall be able to realize EQ, pre-delay, volume and auto gain, compression and gate functions as required. The DSP software and coefficients shall reside in EEPROM in order to facilitate adaptations and software updates.

The control unit shall be equipped with a fully isolated RS-485 based full-duplex serial network interface. This control unit shall serve three main functions:
• Remote monitoring of parameters like status of the DSP, amplifiers and loads, external pilot tone, status of the ambient noise sensing microphone, chassis temperature, ambient noise level, ambient temperature etc.
• Remote control of beam parameters, volume and analog pre-gain, pre-delay, EQ, auto gain configuration and surveillance related parameters.
• Updating DSP software and factory unit programming.

The audio signal shall be connected to a 6p male 5 mm pitch cage clamp connector (as WAGO series 231). The RS-485 signal shall be connected to a 5p cage clamp connector of the same type as specified above. The unit shall be equipped with a 3p male IEC mains supply connector. All connectors shall be grouped together at the upper side of the chassis and shall be accessible from the front as well as the rear of the unit.

The enclosure shall be constructed of steel finished with an epoxy coating. At the rear of the enclosure a total of two bracket attachment points shall be provided (located near the outer ends). The protective front shall consist of a perforated steel grille that can be clicked onto six snap-in studs mounted on the enclosure.

The complete loudspeaker unit shall meet the following criteria:

Frequency range of a single element 230 - 10kHz on axis (+/- 3 dB), max. SPL at 30 m of 92 dBSPL continuous and 96 dBSPL peak, adjustable nominal vertical opening angle of 6^0 to 14^0 (-6 dB), adjustable vertical aiming angle of -16^0 to $+16^0$, fixed horizontal opening angle of 150^0 (-6 dB, averaged 1k to 4kHz). Dimensions are 110.2” (2800 mm) H x 5.3” (134 mm) W x 3.6” (92 mm) D. Weight 73 lbs (33 kg).

The Active Line Array Loudspeaker shall be the LBC 3253/00 Intellivox-2c from Bosch Security Systems.

Active Line Array LBC 3254/00 Intellivox 4c

The unit shall be constructed as a line-array of seventeen 4” full-range loudspeakers equipped with glass fiber diaphragms. The position of the individual loudspeakers shall be according to a special patented scheme.

All signal processing functions, necessary to properly drive a directivity controlled line-array with electronic aiming properties, shall be implemented on-board in order to reduce the overhead costs related to external connections. The complete electronics shall be mounted on a chassis that is placed in a separated compartment at the front-side of the enclosure. Electronics shall consist of an audio input module, two dual-input / eight output channel DSP sections, two control units, sixteen power amplifiers with protection circuitry (power amplifiers one to fifteen shall drive one loudspeaker each, power amplifier sixteen shall drive two loudspeakers) and a switched-mode power supply.

The transformer balanced input section shall be equipped with a dynamic level control (DLC) circuitry to prevent analog digital converter (ADC) overdrive conditions. All necessary array signal processing shall be implemented in the digital domain by means of two 32-bit floating point DSPs. The DSPs shall realize appropriate output channel filters and delays with a time resolution of around 10 μs. Besides the aforementioned, the DSPs shall be able to realize EQ, pre-delay, volume and auto gain, compression and gate functions as required. The DSP software and coefficients shall reside in EEPROM in order to facilitate adaptations and software updates.

The control unit shall be equipped with a fully isolated RS-485 based full-duplex serial network interface. This control unit shall serve three main functions:
• Remote monitoring of parameters like status of the DSPs, amplifiers and loads, external pilot tone, status of the ambient noise sensing microphone, chassis temperature, ambient noise level, ambient temperature etc.
• Remote control of beam parameters, volume and analog pre-gain, pre-delay, EQ, auto gain configuration and surveillance related parameters.
• Updating DSP software and factory unit programming.

The audio signal shall be connected to a 6p male 5 mm pitch cage clamp connector (as WAGO series 231). The RS-485 signal shall be connected to a 5p cage clamp connector of the same type as specified above. The unit shall be equipped with a 3p male IEC mains supply connector. All connectors shall be grouped together at the upper side of the chassis and shall be accessible from the front as well as the rear of the unit.

The enclosure shall be constructed of steel finished with an epoxy coating. At the rear of the enclosure a total of three bracket attachment points shall be provided (two located near the outer ends, one in the middle). The protective front shall consist of a two-piece perforated steel grille that can be clicked onto ten snap-in studs mounted on the enclosure.

The complete loudspeaker unit shall meet the following criteria: Frequency range of a single element 230 - 10kHz on axis (+/- 3 dB), max. SPL at 30 m of 91 dBSPL continuous and 95 dBSPL peak, adjustable nominal vertical opening angle of 6^0 to 14^0 (-6 dB), adjustable vertical aiming angle of -16^0 to $+16^0$, fixed horizontal opening angle of 150^0 (-6 dB, averaged 1k to 4kHz). Dimensions are 171.3” (4350 mm) H x 5.3” (134 mm) W x 3.6” (92 mm) D. Weight 101 lbs (46 kg).

The Active Line Array Loudspeaker shall be the LBC 3254/00 Intellivox-4cfrom Bosch Security Systems.

Active Line Array LBC 3256/00 Intellivox 6c

The unit shall be constructed as a line-array of thirty-two 4” full-range loudspeakers equipped with glass fiber diaphragms. The position of the individual loudspeakers shall be according to a special patented scheme.

All signal processing functions, necessary to properly drive a directivity controlled line-array with electronic aiming properties, shall be implemented on-board in order to reduce the overhead costs related to external connections. The complete electronics shall be mounted on a chassis that is placed in a separated compartment at the front-side of the enclosure. A forced cooling module shall be mounted on the outside of the chassis. Electronics shall consist of an audio input module, two dual-input / eight output channel DSP sections, two control units, sixteen power amplifiers with protection circuitry (each power amplifier shall drive one pair of loudspeakers) and a switched-mode power supply.

The transformer balanced input section shall be equipped with a dynamic level control (DLC) circuitry to prevent analog digital converter (ADC) overdrive conditions. All necessary array signal processing shall be implemented in the digital domain by means of two 32-bit floating point DSPs. The DSPs shall realize appropriate output channel filters and delays with a time resolution of around 10 μs. Besides the aforementioned, the DSPs shall be able to realize EQ, pre-delay, volume and auto gain, compression and gate functions as required. The DSP software and coefficients shall reside in EEPROM in order to facilitate adaptations and software updates.

The control unit shall be equipped with a fully isolated RS-485 based full-duplex serial network interface. This control unit shall serve three main functions:
• Remote monitoring of parameters like status of the DSPs, amplifiers and loads, external pilot tone, status of the ambient noise sensing microphone, chassis temperature, ambient noise level, ambient temperature etc.
• Remote control of beam parameters, volume and analog pre-gain, pre-delay, EQ, auto gain configuration and surveillance related parameters.
• Updating DSP software and factory unit programming.

The audio signal shall be connected to a 6p male 5 mm pitch cage clamp connector (as WAGO series 231). The RS-485 signal shall be connected to a 5p cage clamp connector of the same type as specified above. The unit shall be equipped with a 3p male IEC mains supply connector. All connectors shall be grouped together at the upper side of the chassis and shall be accessible from the front as well as the rear of the unit.

The enclosure shall be constructed of steel finished with an epoxy coating. At the rear of the enclosure a total of three bracket attachment points shall be provided (two located near the outer ends, one in the middle). The protective front shall consist of a two-piece perforated steel grille that can be clicked onto twelve snap-in studs mounted on the enclosure.

The complete loudspeaker unit shall meet the following criteria:

Frequency range of a single element 230 - 10kHz on axis (+/- 3 dB), max. SPL at 50 m of 94 dBSPL continuous and 98 dBSPL peak, adjustable nominal vertical opening angle of 4^0 to 10^0 (-6 dB), adjustable vertical aiming angle of -16^0 to $+16^0$, fixed horizontal opening angle of 150^0 (-6 dB, averaged 1k to 4kHz). Dimensions are 194.1” (4930 mm) H x 5.3” (134 mm) W x 3.6” (92 mm) D. Weight 132 lbs (60 kg).

The Active Line Array Loudspeaker shall be the LBC 3256/00 Intellivox-6cfrom Bosch Security Systems.