DP-K1
The digital mixer with automatic resonance control shall use digital signal processing for
all mixing and signal processing functions and shall be modular for flexibility in system
configuration. The mixer shall comply with the limits for a Class A computing device
pursuant to FCC Part 15, Subject J. The mixer shall have a frequency response from 20
to 20k Hz, +/-1 dB.

The mixer shall utilize a modular architecture and be capable of up to eight inputs and
eight outputs. Module ports shall include four input ports and two output ports. Each
input port shall accept two input channels and each output port shall provide up to four
output channels. The mixer shall have eight independent mixing busses with full matrix
mixing of any or all inputs to any or all outputs.

All software-based settings shall be accessible from PC- based setup software. Both RS-
232C and Ethernet connections shall be provided for PC interface. At least 8 FLASH
memory presets shall be available and each memory bank shall store all software-based
settings used in a given configuration. Memory selection shall be available from the
front panel controls. Memory selection, channel volume and mute control shall also be
selectable by simple dry contact closure using an optional remote control card.

Each mixer input bus shall feature all of the following signal processing capabilities:
Gain trim stage, variable high pass filter, selectable 6-band or 12-band parametric
equalization filters, compressor, gating, and group-assignable input level fader.

Input compressor settings shall include separately adjustable threshold, compression ratio,
attack and release times, and selectable channel synchronization.

Each input gate shall have separately adjustable threshold, attack and release times.

Each mixer output shall feature all of the following signal processing capabilities: Group-
assignable output level fader, selectable 6-band, 12-band, or 18-band multi-function filter
set for equalization and/or crossover, full-featured compressor, and variable-increment
signal delay.

Crossover filter slopes shall be selectable as either 6, 12, 18, or 24 dB per octave.
Crossover filter characteristic (excluding 6 dB per octave slope) shall be selectable as
either Butterworth, Bessel, Linkwitz-Riley, or variable Q (Linkwitz-Riley applies to 12
and 24 dB per octave only).   Variable Q crossover filters shall have a Q-factor that is
adjustable from 0.5 to 2.563.

Multi-function filters not assigned to a crossover function shall be selectable as either
high pass, low pass, all pass, shelving, horn compensation EQ, notch filter, or fully
parametric peak/dip filter.

All parametric peak/dip filters shall have a center frequency that is adjustable over the
range of 20 to 20k Hz, a Q-factor that is adjustable from 0.267 to 69.249, and a gain
range of +15 dB to –15 dB in 0.1 dB increments. All high/low pass and shelving filters
shall have a center frequency that is adjustable over the range of 20 to 20k Hz.

The digital mixer shall feature eight automatic resonance control (ARC) filter sets,
allowing optimization of sound for up to eight rooms. Each ARC filter set shall consist
of six automatically controlled filters used to inhibit system excitement of up to six room
resonances. The setting of the center frequency, depth, and bandwidth of each filter shall
be automatic, based upon automatic room / sound system measurements performed by
the built-in measurement computer, within a user-determined frequency range. The built-
in measurement computer shall be capable of detecting room resonant frequencies as
distinct from the characteristics of the system loudspeakers or microphones and shall be
capable of averaging measurement data from up to eight operator-selected sampling
locations per room. Display of the filter settings shall be available in both graphical and
numeric table forms.

Each input bus shall be assignable to any or all of up to eight ARC filter sets using a
cross-point gain matrix to allow for full matrix mixing of inputs to ARC filter sets. Each
ARC filter set shall be assignable to one or more output channels.

Windows-based PC control software shall be provided at no extra cost and shall allow for adjustment of mixer settings by computer via standard RS-232 port. The software shall provide for both off-line editing and storage of setup files, as well as live, real-time adjustment of setup parameters. The software shall allow the saving of setup configurations to the mixer's resident memory banks.

Setup software shall visually indicate the status of all programmable setup parameters and shall provide visual indication of both input and output levels. Audio levels on each input bus and output bus shall be indicated by on-screen two-color signal level indicators. On-screen indicators shall also indicate input channel gate status and fan status.

The unit shall include rack-mountable in standard equipment rack. Dimensions (W x H x D) shall be 19.0" x 5.22" x 12.6" (482.6 x 132.6 x 320 mm) and weight shall be 16.3 lbs. (7.4 kg).

The digital mixer shall be TOA model DP-K1.

The two channel 24-bit mic/line input module shall be TOA model D-921E.
The two channel 24-bit mic/line input module shall be TOA model D-921F.
The two channel 20-bit mic/line input module shall be TOA model D-922E.
The two channel 20-bit mic/line input module shall be TOA model D-922F.
The two channel auxiliary input module shall be TOA model D-936R.
The two channel digital (AES/EBU) input module shall be TOA model D-923AE.
The two channel digital (S/PDIF) input module shall be TOA model D-937SP.

The four channel line output module shall be TOA model D-971M.
The four channel line output module shall be TOA model D-971E.
The four channel line output module shall be TOA model D-971R.
The four channel digital (S/PDIF) output module shall be TOA model D-961SP.
The four channel digital (AES/EBU) output module shall be TOA model D-972AE.

The remote control and monitoring module (8/8 I/O) shall be TOA model D-981.
The remote control and monitoring module (24/16 I/O) shall be TOA model D-983.