ui consulting
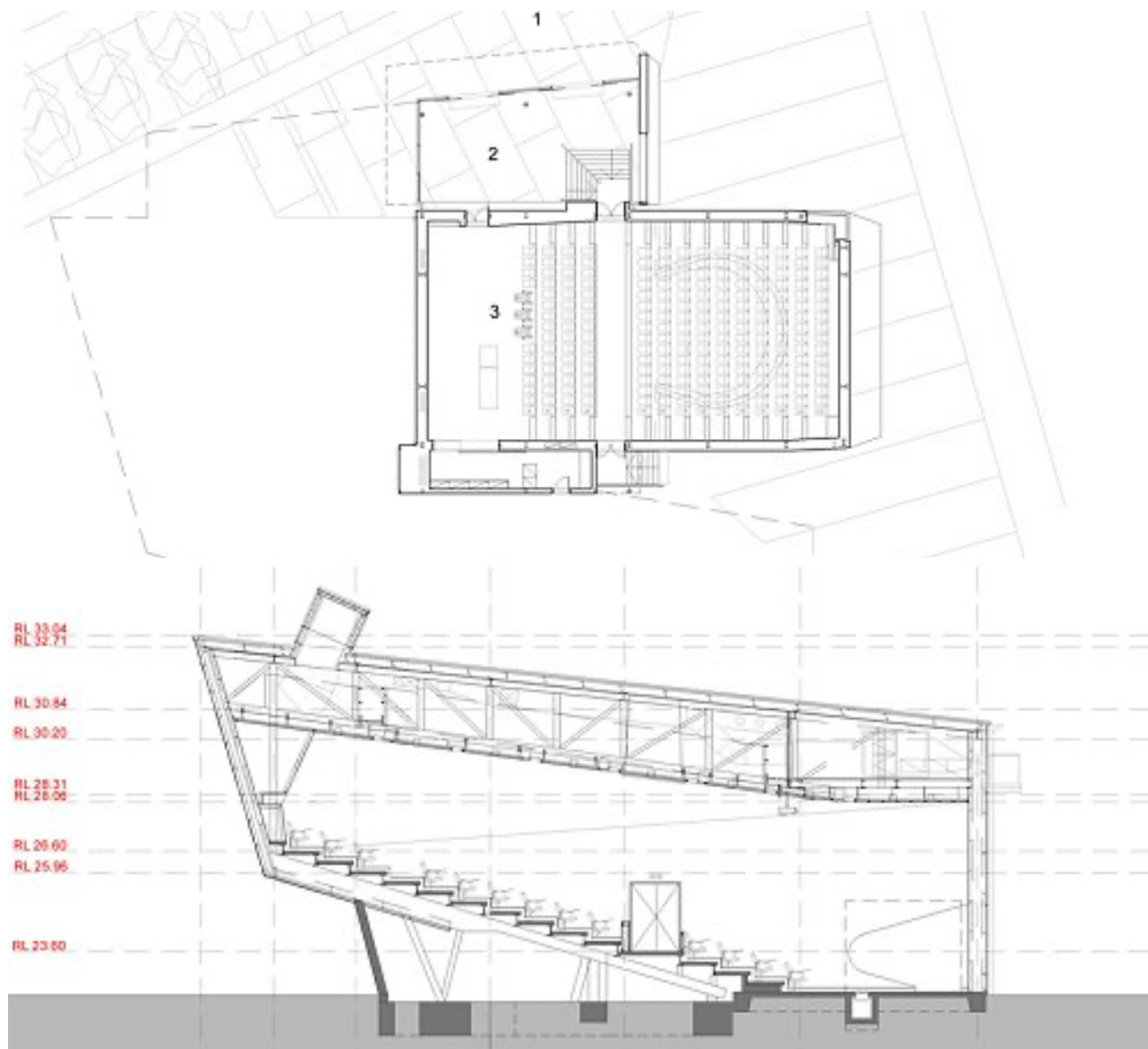## AV design and consulting services

LECTURE THEATRE SYSTEM V1

Project Proposal

Prepared for:
Prepared by: David Bradshaw, Ui Consulting
15 June 2021
Proposal number: 999-1006

EXECUTIVE SUMMARY

Objective

Provide an audio and video system for a university lecture theatre 12m wide and 25m deep with raked seating using Extron components where possible..

Goals

A suitably sized video image easily seen by all audience members. Provide easy connection for the host presenters computer video and audio source, using HDMI. Intuitive control via touch-panel for untrained operators to use. Evenly distributed intelligible audio across the room. Voice reinforcement via wired and wireless microphones. Real time 'lecturecasting' streaming and recording capability including document and stage cameras. Assisted listening capability.

Solution

Audio reinforcement from the front of the theatre is provided by screen side situated electronic beam-steering column speakers, directed at the audience only and away from potential ceiling and rear wall reflections, resulting in highly intelligible audio. High brightness WXGA video projector and 226" static screen provide easily watchable images from all seats in the theatre. Touch panel control including confidence monitor plus HDMI and networking connectivity are provided directly at the lectern, along with a static boundary microphone.. Live lecture streaming and real time recording options are available for student catch up and/or virtual lecture capability. Wireless microphones are provided to discourage static lecturing styles, and to facilitate engagement with the students (questions from the audience). Network charging dock provided for same. Induction loop for assisted listening capability.

Project Outline

- Lectern mounted AV, control and power connections
- Lectern mounted intuitive 12" system control panel
- Adaptive electronic beam-steered speakers
- 2 channel wireless microphone system with charging docks
- WXGA High brightness projector with static 226" screen
- Lecturecasting using PTZ camera, document camera and PC images
- Induction loop and appropriate driver

BILL OF MATERIALS
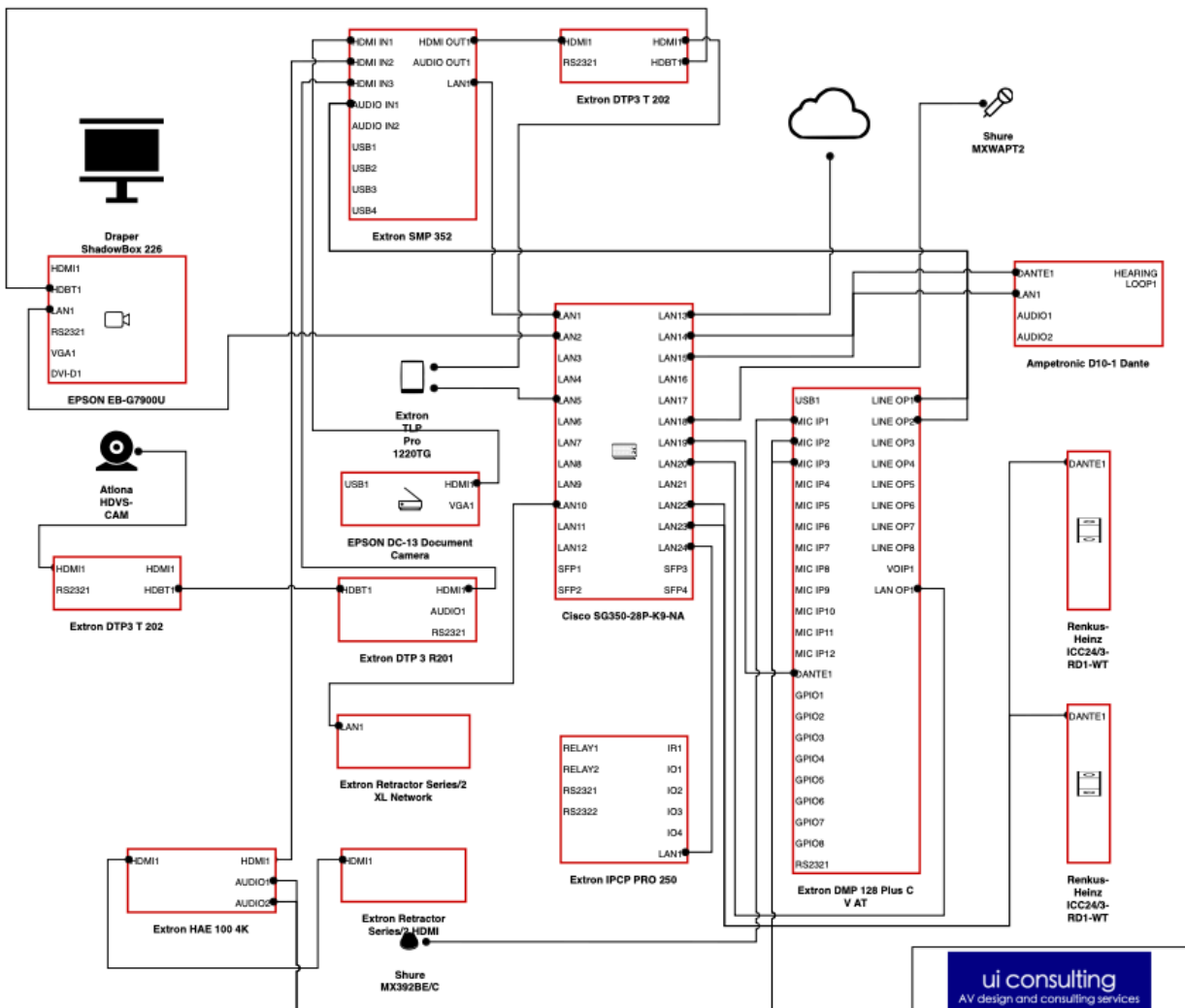
S.No.	Description	Brand	Model	Qty	Unit Price	Amount
Video						
1	The document camera that engages every student with amazing HD	EPSON	DC-13 Document Camera	1	£0.00	£0.00
2	7000 Lumens,1920 x 1200 resolution	EPSON	EB-G7900U	1	£0.00	£0.00
3	PTZ Camera for HDVS-300 System	Atlona	HDVS-CAM	1	£637.00	£637.00
4	16:10 226" Diagonal, Matt White XT1000V, fixed projection screen.	Draper	ShadowBox 226	1	£1,804.00	£1,804.00
5	Dual Recording H.264 Streaming Media Processor	Extron	SMP 352	1	£7,644.00	£7,644.00
6	4K/60 HDMI DTP2 Transmitter with Audio Embedding: Transmits HD	Extron	DTP3 T 202	2	£531.00	£1,062.00
7	DTP Receiver for HDMI: Receives HDMI plus control and analog aud	Extron	DTP 3 R201	1	£333.00	£333.00
Audio						
8	A flat frequency response of 50 Hz to 17 kHz across the vocal range	Shure	MX392BE/C	1	£190.00	£190.00
9	ICC24/3-RD1-WT	Renkus-Heinz	ICC24/3-RD1-WT	2	£3,339.00	£6,679.00
10	12 Input X 8 Output DSP with USB audio,AEC, VoIP and Dante inter	Extron	DMP 128 Plus C V AT	1	£2,685.00	£2,685.00
11	Handheld Transmitter with VP68 Microphone (Includes one SB902 E	Shure	MXW2/VP68	1	£665.00	£665.00
12	Network Hearing Loop Driver	Ampetronic	D10-1 Dante	1	£0.00	£0.00
Control						
13	IP Link Pro Control Processor with 2 bidirectional RS-232, 4 configu	Extron	IPCP PRO 250	1	£1,686.00	£1,686.00
14	12" Tabletop TouchLink Pro Touchpanel	Extron	TLP Pro 1220TG	1	£3,251.00	£3,251.00
15	SG350-28P 28-port GB POE	Cisco	SG350-28P-K9-NA	1	£854.00	£854.00
Accessories						
16	Shure wireless bodypack transmitter w/omnidirectional mic	Shure	MXW1/O	1	£518.00	£518.00
17	Two-Channel Networked Charging Station	Shure	MXWNCS2	1	£0.00	£0.00
18	Microflex Wireless 2-Channel Transceiver	Shure	MXWAPT2	1	£1,151.00	£1,151.00
19	HDMI; 3 feet (90 cm)	Extron	Retractor Series/2 HDMI	1	£355.00	£355.00
20	Network CAT6; 5 feet (152 cm)	Extron	Retractor Series/2 XL Netv	1	£0.00	£0.00
21	Ceiling mount for high ceiling environment. Silver painted steel.	EPSON	ELPMB48	1	£0.00	£0.00
22	HDMI Audio De-Embedder	Extron	HAE 100 4K	1	£673.00	£673.00
23	OMNIDIR EARSET HEADWRN MIC TQG	Shure	MX153T/O-TQG	1	£112.00	£112.00
					Total Price	**£30,298.00**

CABLE SCHEDULE

S.No.	ID	Source Device	Destination Device	Source Port	Destination Port	Length	Cable Type	Signal
1		Extron HAE 100 4K	Extron SMP 352	HDMI1	HDMI IN2		HDMI	Video
2		Extron DMP 128 Plus C V	Extron SMP 352	LINE OP1	AUDIO IN1		2 Core Audio	Audio
3		Atlona HDVS-CAM	Extron DTP3 T 202	Atlona HDVS-CAM	HDMI1		HDMI	Video
4		Extron IPCP PRO 250	Cisco SG350-28P-K9-NA	LAN1	LAN24		CATx	Control
5		Extron Retractor Series/2)	Cisco SG350-28P-K9-NA	LAN1	LAN10		CATx	Both
6		Extron SMP 352	Extron DTP3 T 202	HDMI OUT1	HDMI1		HDMI	Video
7		Extron DTP3 T 202	EPSON EB-G7900U	HDBT1	HDBT1		CATx	Video
8		Extron DTP3 T 202	Extron DTP 3 R201	HDBT1	HDBT1		CATx	Video
9		EPSON DC-13 Document	Extron SMP 352	HDMI1	HDMI IN1		HDMI	Video
10		Extron DTP 3 R201	Extron SMP 352	HDMI1	HDMI IN3		HDMI	Video
11		Extron DMP 128 Plus C V	Extron SMP 352	LINE OP2	AUDIO IN1		2 Core Audio	Audio
12		Extron SMP 352	Cisco SG350-28P-K9-NA	LAN1	LAN1		CATx	Both
13		Extron DMP 128 Plus C V	Cisco SG350-28P-K9-NA	LAN OP1	LAN20		CATx	Control
14		Cisco SG350-28P-K9-NA	Extron DMP 128 Plus C V A1	LAN19	DANTE1		CATx	Audio
15		Cisco SG350-28P-K9-NA	Renkus-Heinz ICC24/3-RD1	LAN22	DANTE1		CATx	Audio
16		Cisco SG350-28P-K9-NA	Renkus-Heinz ICC24/3-RD1	LAN23	DANTE1		CATx	Audio
17		Cisco SG350-28P-K9-NA	EPSON EB-G7900U	LAN2	LAN1		CATx	Control
18		Cisco SG350-28P-K9-NA		LAN13			CATx	Both
19		Cisco SG350-28P-K9-NA	Shure MXWAPT2	LAN18	Shure MXWAPT2		CATx	Audio
20		Shure MX392BE/C	Extron DMP 128 Plus C V A1	Shure MX392BE/C	MIC IP1		2 Core Audio	Audio
21		Extron HAE 100 4K	Extron Retractor Series/2 HI	HDMI1	HDMI1		HDMI	Video
22		Extron HAE 100 4K	Extron DMP 128 Plus C V A1	AUDIO1	MIC IP2		2 Core Audio	Audio
23		Extron HAE 100 4K	Extron DMP 128 Plus C V A1	AUDIO2	MIC IP3		2 Core Audio	Audio
24		Cisco SG350-28P-K9-NA	Extron TLP Pro 1220TG	LAN5	Extron TLP Pro 1220TG		CATx	Control
25		Extron DTP3 T 202	Extron TLP Pro 1220TG	HDMI1	Extron TLP Pro 1220TG		HDMI	Video
26		Cisco SG350-28P-K9-NA	Ampetronic D10-1 Dante	LAN14	DANTE1		CATx	Audio
27		Cisco SG350-28P-K9-NA	Ampetronic D10-1 Dante	LAN15	LAN1		CATx	Control

Draper
ShadowBox 225

EPSON EB-G7900U
HDMI1
HDBT1
LAN1
RS2321
VGA1
DVI-D1

Atlona
HDVS-
CAM

Extron DTP3 T 202
HDMI1   HDMI1
RS2321   HDBT1

Extron HAE 100 4K
HDMI1   HDMI1
             AUDIO1
             AUDIO2

Extron Retractor
Series/2 HDMI
HDMI1

Shure
MX392BE/C

Extron SMP 352
HDMI IN1   HDMI OUT1
HDMI IN2   AUDIO OUT1
HDMI IN3   LAN1
AUDIO IN1
AUDIO IN2
USB1
USB2
USB3
USB4

Extron DTP3 T 202
HDMI1   HDMI1
RS2321   HDBT1

Extron
TLP
Pro
1220TG

EPSON DC-13 Document
Camera
USB1   HDMI1
             VGA1

Cisco SG350-28P-K9-NA
LAN1   LAN13
LAN2   LAN14
LAN3   LAN15
LAN4   LAN16
LAN5   LAN17
LAN6   LAN18
LAN7   LAN19
LAN8   LAN20
LAN9   LAN21
LAN10   LAN22
LAN11   LAN23
LAN12   LAN24
SFP1   SFP3
SFP2   SFP4

Extron DTP 3 R201
HDBT1   HDMI1
             AUDIO1
             RS2321

Extron Retractor Series/2
XL Network
LAN1

Extron IPCP PRO 250
RELAY1   IR1
RELAY2   IO1
RS2321   IO2
RS2322   IO3
             IO4
             LAN1

Shure
MXWAPT2

Ampetronic D10-1 Dante
DANTE1   HEARING
             LOOP1
LAN1
AUDIO1
AUDIO2

Extron DMP 128 Plus C
V AT
USB1   LINE OP1
MIC IP1   LINE OP2
MIC IP2   LINE OP3
MIC IP3   LINE OP4
MIC IP4   LINE OP5
MIC IP5   LINE OP6
MIC IP6   LINE OP7
MIC IP7   LINE OP8
MIC IP8   VOIP1
MIC IP9   LAN OP1
MIC IP10
MIC IP11
MIC IP12
DANTE1
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
RS2321

Renkus-
Heinz
ICC24/3-
RD1-WT
DANTE1

Renkus-
Heinz
ICC24/3-
RD1-WT
DANTE1

rh RENKUS-HEINZ

iCONYX

Iconyx Compact Series

ICC24/3-RN & RD1
Single Array Module
Very Compact Digitally Steerable Line Array

Ultimate Flexibility in a Smaller Array

The Iconyx Compact series brings the ultimate flexibility of the Iconyx to a smaller footprint array. An all-new, twenty-four channel digital amplifier powers twenty-four, 3"/77 mm full-range, high sensitivity, treated paper cone drivers. With an amplifier and DSP channel for each driver, all of the flexibility of Iconyx is now available in a package nearly 40% smaller than the classic Iconyx.

While the package is smaller the performance is not. Full RHAON II beam-steering with our latest U.R.G.O beam algorithms, a movable acoustic center, multiple beam opening angles and high-pass filtering of individual beams. All with the fidelity and musicality expected of a Renkus-Heinz product.

Applications

- The Iconyx Compact series brings high directivity and digital beam-steering to architecturally sensitive venues.
- Traditional houses of worship where high directivity is necessary for speech intelligibility and absolute minimal visual impact is needed.
- Corporate spaces and atria benefit from the high acoustic directivity and the clean modern, styling.
- In transportation hubs like airports and train stations the Iconyx Compact series offers new levels of intelligibility and fidelity in a compact loudspeaker.

The Iconyx Compact series brings the performance and directivity of Iconyx to spaces where even the classic Iconyx arrays are too large. The narrow cabinet and included, nearly invisible, wall-mount bracket will disappear into even the most architecturally sensitive spaces; while the exceptional vertical directivity can help penetrate even the most challenging acoustics, making the acclaimed performance of Iconyx loudspeakers more accessible than ever before.

The ICC24/3 is available in white and black standard, custom color matching is optional. Standard -RN units have analog and AES inputs, -RD1 units include Dante network audio. RHAON II support is standard for all models.

- **Compact, slender enclosure**

  All of the features of the classic Iconyx in a smaller, stylish, fully modular array system.

- **24 x 3"/77 mm Full-range drivers**

  High fidelity components and constant driver spacing make the IC Compact series the most flexible compact array system available.

- **Custom Options available**

  Custom color, weather resistant enclosures, Dante network audio and direct fiber optic Ethernet connections are all available.

LECTURE THEATRE V1

Search Projector	Categories	Specification	Install condition

◉ Business model ○ Home Theatre model

Category [High Brightness model(with optional lenses ⌄] Model [EB-G7900U ⌄] Option Lens [ELPLS04 (Standard) V12H004S04 ⌄]

Model Name

EB-G7900U
Brightness: 7000lm
Brightness(Reduced by lens): 6900lm
Resolution: WUXGA
Weight: Approx. 28.4 lbs. / 12.9 kg

[Spec Info]

Similar Models Select>>

- EB-2040
- EB-2042
- EB-2055
- EB-2065
- EB-2140W

Lenses (21 model)   [Display change] [Spec Info]

Lenses	V code	Throw ratio	Lens shift(V)	Lens shift(H)
◉ ELPLS04 (Standard)	V12H004S04	2.16 - 3.48	-67% --- 67%	-30% --- 30%
○ ELPLM10 (Middle)	V12H004M0A	3.32 - 5.06	-67% --- 67%	-30% --- 30%
○ ELPLM06 (Middle)	V12H004M06	3.32 - 5.06	-67% --- 67%	-30% --- 30%
○ ELPLM11 (Middle)	V12H004M0B	4.85 - 7.38	-67% --- 67%	-30% --- 30%
○ ELPLM07 (Middle)	V12H004M07	4.85 - 7.38	-67% --- 67%	-30% --- 30%

⚙ **Setting**   ∧

Position   **Aspect ratio**   **Units**
[Desktop ⌄]   [16:10 ⌄]   [Meter ⌄]

Mode
[Screen size ⇒ Throw distance ⌄]

Lens shift range   OFF ○

Brightness guide   ON ●

Screen Size   [Diagonal ⌄] ∧

[217.15] inch   W: 4.677 m   H: 2.923 m

217.15

50   1000

Throw distance   [10.191] m   ∧
(Lens to screen)

10.191

16.402

2.285   75.821
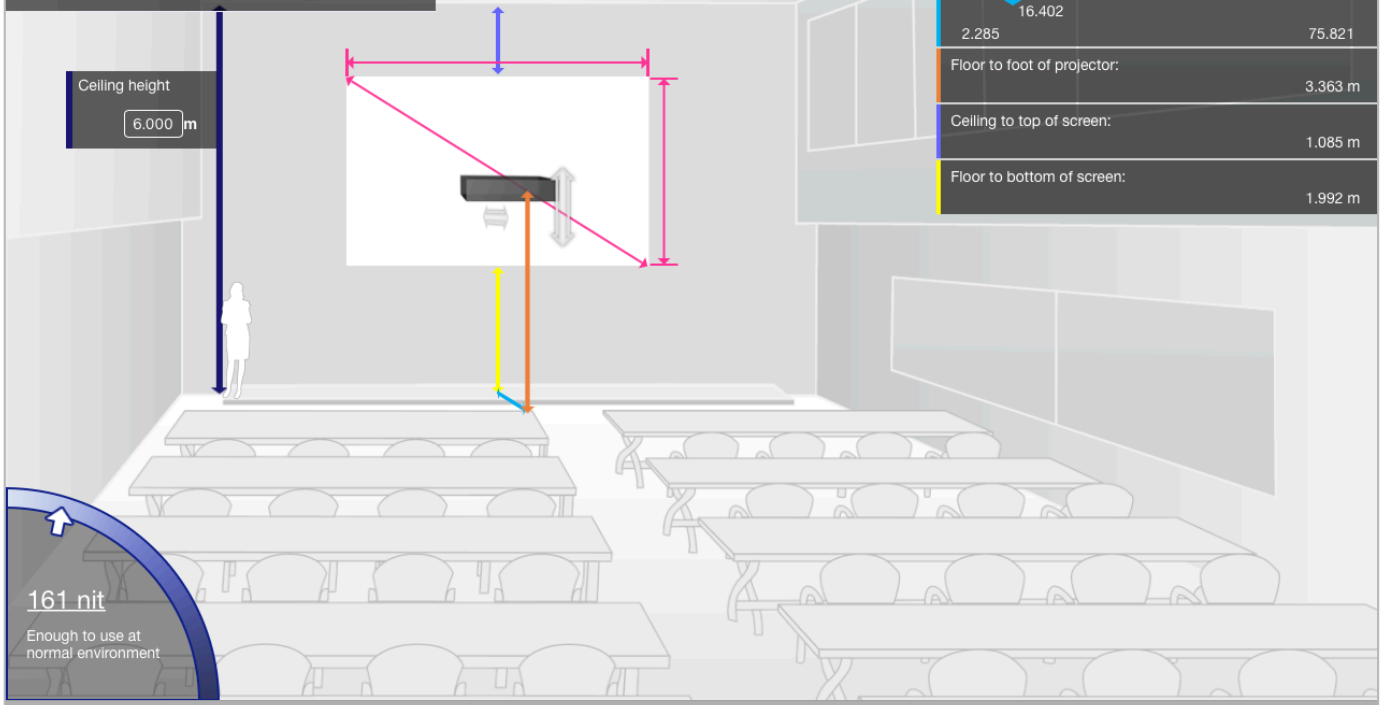
Floor to foot of projector:
                                            3.363 m

Ceiling to top of screen:
                                            1.085 m

Floor to bottom of screen:
                                            1.992 m

Ceiling height
[6.000] m

161 nit
Enough to use at
normal environment

Standard Eye Level - Use consistent units.

1200

Image Aspect Ratio - Express as X.XX

1.78

STEP 2:

	To Find: Farthest Viewer	To Find: Minimum Image Height	To Find: Minimum ⅛Element Height
Image Height	2900	2896.73	2900
Minimum ⅛Element Height	3.97%	3.97%	3.97%
Farthest Viewer	23026.00	23000	23000
Distance from floor to bottom of image*	2000	2000	2000
Closest Viewer	6408.40	6402.73	6408.40
Max. Length of CV Plane	17038.00	17024.18	17038.00
Image Width	5162.00	5156.17	5162.00
Image Diagonal	5920.83	5914.15	5920.83
Viewing Ratio	7.94	7.94	7.94

*Input if you need closest viewer

Reset

For BDM Acuity of 200 If the Viewing Ratio is at least	With The Viewing Ratio being no more than	The minimum ⅛Element Height should be at least
0.80	1.00	0.50⅛
1.00	1.50	0.75⅛
1.50	2.00	1.00⅛
2.00	3.00	1.50⅛
3.00	4.00	2.00⅛
4.00	5.00	2.50⅛
5.00	6.00	3.00⅛
6.00	7.00	3.50⅛
7.00	8.00	4.00⅛
8.00	9.00	4.50⅛
9.00	10.00	5.00⅛

EB-G7900U

7000 lm WUXGA HDBaseT

24/7

10 W

Easy to set-up and with low maintenance requirements, this 7,000-lumens WUXGA installation projector boasts bright images, vivid colours and 4K-enhanced detail

Ideal for professional-looking presentations in a variety of large venues, the EB-G7900U creates images with rich, vivid colours thanks to Epson's 3LCD technology and equally high White and Colour Light Output. With flexible installation and low maintenance, this 4K enhanced projector offers a fit-and-forget solution for scenarios in which only superior projections will do.

Superior image quality
Ensure superb quality and the best possible delivery of presentations with this powerful installation projector for large venues. Featuring Epson's own 3LCD technology and equally high White and Colour Light Output, WUXGA resolution images are vivid and bright, even in daylight with its 7,000 lumens brightness. For a next-level viewing experience, the projector features 4K enhancement, giving images exceptional sharpness, clarity and detail.

Easy positioning
Thanks to a new range of motorised lenses, including optional ultra-short throw (UST) lens, and both vertical and horizontal lens shift, the projector benefits from true 360° installation flexibility allowing it to be placed almost anywhere.

KEY FEATURES

- **Superior picture quality**
  3LCD technology; superior white balance; better colour matching
- **HD images with 4K enhancement**
  Exceptional sharpness, clarity and detail for the real 4K effect
- **Flexible 360° installation**
  True flexibility without distortion or loss of brightness
- **Lens memory function**
  Stores projector settings such as image position, focus and zoom
- **Portrait projection mode**
  Switch mode without having to change the lamp

No.1 SINCE 2001
EPSON WORLD LEADER IN PROJECTORS
Source: Futuresource Consulting Ltd.

EPSON®
EXCEED YOUR VISION

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FIXED SCREEN SHADOWBOX CLARION

WALL-MOUNTED, SHARP IMAGES

- The wall-mounted ShadowBox Clarion projection screen features the advantage of a fixed frame screen. Snaps are utilized to attach the viewing surface onto the back of the extruded aluminum frame. This keeps the surface taut providing a truly flat viewing surface for sharper image quality that is perfect for residential, corporate, or educational settings. The black frame provides a border around the perimeter of the viewing area and presents a theater-like, finished appearance. It also reduces border reflection and makes image alignment easier during installation.

> Fixed frame projection screens are engineered for easy assembly and to provide a perfectly flat, taut viewing surface.

FEATURES
– Fixed screen designed to be wall-mounted. Mounting fasteners not included.
– Aluminum frame finished in black powder coat.
– Includes a 1½" (38 mm) black border that reduces border reflection and provides a trim, finished appearance.
– Viewing surface snaps to the back of a 1½" (38 mm) extruded aluminum frame.
– Frame equipped with mounting flange that mates with wall brackets.

WARRANTY
draperinc.com/warranty.aspx

OPTIONS
– ShadowBox Clarion is available for custom curved applications. Please contact Draper for more information.
– Vel-Tex finish available. Vel-Tex is a black, velvety textile covering that cuts reflection and conceals all trace of joints in the frame.
– **Viewing Surfaces:** TecVision®, OptiFlex™ (tensioned), Cineflex™ (rear projection) and ClearSound™ (acoustically transparent) families.

SUPPORTING DOCUMENTS
All instructions, technical drawings and other supporting documents are located at: draperinc.com/documents.aspx

SIZES
– **Maximum image width** up to 192" (488 cm) wide.
– 16:10 FORMAT: from 94" (239 cm) to 165" (419 cm) diagonal.
– 16:9 FORMAT: from 92" (234 cm) to 220" (559 cm) diagonal.
– 4:3 NTSC/PAL FORMAT: from 72" (283 cm) to 180" (457 cm) diagonal.
– Custom sizes available.
– ShadowBox Clarion is available for custom curved applications. Please contact Draper® for more information.

For more information on this product visit:
draperinc.com/projectionscreens/fixedscreens.aspx

ɅⅢⅢ⋀DRAPER

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ELPDC13

This user-friendly document camera contains a range of features for the classroom, making it the ideal partner for Epson education projectors

Bring lessons to life with this user-friendly document camera and share pictures and objects in Full HD on a large screen for the benefit of the whole class. Bursting with a range of clever features and functionality, teachers can create a dynamic environment to enhance student learning. Benefitting from a lightweight and portable design, it is easy to transport between classrooms.

Display in Full HD
Display images and 3D objects in Full HD with incredible detail for the whole class to see. Thanks to a large A3 shooting area, two full pages from a textbook can be displayed. Smooth video streaming is achieved with impressive clarity and without motion blur at 30 frames per second. Thanks to a 16 x digital zoom and built-in LED light, even intricate detail can be seen. Ideal for science lessons, minute objects can be displayed on a large screen thanks to a microscope attachment.

Added flexibility
Live images and video content, including that stored on a SD card, can be output to multiple displays thanks to parallel video output. Thanks to split-screen functionality, teachers can present two pieces of content side-by-side to help highlight teaching points, such as plant and animal growth. Teachers can maintain student engagement by operating the document camera directly from the projected image at the front of the classroom, including starting and stopping video recordings.

Portable and lightweight
A lightweight and portable design and included soft carry case makes it easy to move between classrooms. With a Kensington lock and security bar, schools and education establishments can have added peace of mind when the camera is unattended or not in use.

KEY FEATURES

- **Clear, smooth images**
  Full HD 1080p camera and 30-frames-per-second screen refresh rate
- **Capture every detail**
  16 x digital zoom; one-touch auto focus and freeze function
- **Large A3 capture area**
  Ideal for projecting maps, detailed diagrams and 3D objects
- **Illuminate hard-to-see objects**
  Built-in LED light
- **Added peace of mind**
  Kensington lock and security bar for theft protection

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Introduction

The Atlona AT-HDVS-CAM-HDMI is an enterprise-grade PTZ camera designed for use in video conferencing and other applications such as lecture capture and distance education. It features HDMI output, as well as a USB 2.0 interface for video and camera control. Simultaneous video output is available through two interfaces. Through USB, the HDVS-CAM-HDMI seamlessly integrates with the Omega™ Series for a complete, automated conferencing system that includes AV and USB extension. The HDMI output is ideal for use with a video conferencing codec, lecture capture appliance, or PC equipped for video capture. The HDVS-CAM-HDMI delivers high performance, professional-quality imaging with video resolutions up to 1080p @ 60 Hz over HDMI and 1080p @ 30 Hz for USB 2.0, as well as fast and accurate auto-focusing, and a fast yet quiet pan and tilt mechanism. Also available is H.264 or H.265 streaming over IP with support for RTMP and RTSP protocols. This PTZ camera is ideal for a wide range of small to medium-sized meeting spaces, classrooms, training rooms, and many other environments. The HDVS-CAM-HDMI is available in black or white.

Applications

- **Meeting spaces and conference rooms**
  The HDVS-CAM-HDMI works together with the USB extension capability of the Omega Series devices to enable simple, clean connectivity from the front wall to the meeting table. At the same time, the HDMI output can be used for monitoring on a secondary display.

- **Classrooms and other instructional spaces**
  The HDVS-CAM-HDMI is ideal for distance learning and collaboration, as well as recording lectures. The HDMI and USB interfaces can be used simultaneously for conferencing and lecture capture applications.

- **Legacy video conferencing systems**
  This camera can provide an effective upgrade to existing codecs, by delivering high quality imaging performance over HDMI. The HDVS-CAM-HDMI also brings software video conferencing capability via USB.

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Cable Cubby 202 UK
Shown with optional Retractor Modules

Extron

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AV STREAMING

SMP 300 Series

H.264 STREAMING MEDIA PROCESSORS

Multipurpose Adaptable Platform
for Recording and Streaming
AV Presentations

▸ Process two high resolution AV sources from up to five available input signals.

▸ Record and stream simultaneously.

▸ High quality scaling with flexible two-window management.

▸ Produce MP4 media or M4A audio files that are compatible with virtually any media player.

▸ Stream concurrently at two resolutions and bit rates from the same source.

Extron

DMP 128 Plus
12X8 ProDSP™ DIGITAL MATRIX PROCESSORS

VoIP **Dante®** **DANTE DOMAIN MANAGER READY** **AES 67** **ProDSP»** **AVAYA DevConnect** Technology Partner **EVERLAST POWER SUPPLIES**

Advanced Audio DSP with Quick and Intuitive Configuration

▶ Six models with 12 analog mic/line inputs and 8 analog line outputs

▶ All models include a USB Audio interface, providing up to four channels of digital audio sends and returns

▶ C Models include AEC on input channels 1–12 with selectable noise cancellation

▶ V models include up to 8 VoIP lines that can be configured as individual extensions or for conference calling

▶ AT models include 48x24 Dante™ digital audio network expansion capability via an integrated four-port gigabit switch

▶ Optional ACP Series audio control panels provide intuitive audio system control

Extron

DTP3 T 202

4K/60 HDMI DTP3 TRANSMITTER WITH INPUT LOOP-THROUGH

DTP SYSTEMS

18 Gbps
4K/60 4:4:4

The DTP3 T 202 is Extron's third-generation long distance, digital twisted pair transmitter that sends HDMI and bidirectional RS-232 signals up to 330 feet (100 meters) over a shielded CAT6A cable to Extron DTP®-enabled products. This HDCP 2.3-compliant transmitter supports video resolutions up to 4K/60 at 4:4:4 color sampling. For added convenience, it provides one HDMI input with loop-through for local monitoring. The feature-rich and compact DTP3 T 202 is ideal for discreet placement in lecterns, beneath tables, or wherever needed to meet application requirements.

▶ Transmits HDMI plus control up to 330' (100 m) over a shielded CAT6A cable

▶ Supports computer and video resolutions up to 4K/60 @ 4:4:4

▶ Buffered HDMI input loop-through

▶ EDID Minder® automatically manages EDID communication between connected devices

▶ HDCP 2.3 compliant

▶ Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through

▶ Remote power capability with DTP2 and DTP3 products

Extron

DTP3 R 201

4K/60 HDMI DTP3 RECEIVER WITH AUDIO DE-EMBEDDING

DTP SYSTEMS

18 Gbps
4K/60 4:4:4

The DTP3 R 201 is Extron's third-generation long distance, digital twisted pair receiver that accepts HDMI and bidirectional RS-232 signals up to 330 feet (100 meters) over a shielded CAT6A cable from Extron DTP®-enabled products. This HDCP 2.3-compliant receiver supports video resolutions up to 4K/60 at 4:4:4 color sampling. It provides stereo audio de-embedding for convenient installation in professional environments. The feature-rich and compact DTP3 R 201 is ideal for discreet placement behind displays, within equipment racks, or wherever needed to meet application requirements.

▶ Receives HDMI plus control up to 330' (100·m) over a shielded CAT6A cable

▶ Supports computer and video resolutions up to 4K/60 @ 4:4:4

▶ Stereo audio de-embedding

▶ HDCP 2.3 compliant

▶ Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through

▶ Optional external Extron Everlast™ power supply

▶ Remote power capability with DTP2 and DTP3 products

Extron

TOUCHLINK PRO

TLP Pro 1220TG

12" TABLETOP
TOUCHLINK PRO TOUCHPANEL

▶ **12" edge-to-edge glass, capacitive touchscreen with 1280x800 resolution and 16 million colors**

▶ **Faster processing and more memory**

▶ **Compatible with all IP Link® Pro control processors**

▶ **High resolution video preview with HDMI and XTP inputs**

▶ **Touchpanel receives power and control over a single Ethernet cable, eliminating the need for a local power supply**

▶ **Built-in speakers provide stereo audio**

▶ **Light sensor adjusts screen brightness as the ambient room lighting changes**

▶ **Sits on a tabletop or installs on a VESA mount**

▶ **Weighted base allows up to 40° of tilt**

▶ **System connection status indicator provides visual feedback if the touchpanel is not communicating with a control processor**

▶ **Supports TouchLink for iPad and TouchLink for Web**

The Extron TLP Pro 1220TG is a 12" tabletop touchpanel with a capacitive, edge-to-edge glass touchscreen. As with all TouchLink® Pro models, this customizable touchpanel features faster processing and more memory. The TLP Pro 1220TG has video preview inputs that support high resolution HDCP-compliant video from HDMI sources and Extron XTP devices. The touchpanel conveniently receives power and communications over a single Ethernet cable. The TLP Pro 1220TG is ideal for control applications requiring a fully-customizable tabletop touchpanel with a large control surface and multi-source video preview.

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

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IP Link Pro xi Series
PRO SERIES CONTROL PROCESSORS

Full-Featured Control Processors with Enhanced Speed and Security

▸ Control processors for use with TouchLink Pro touchpanels, Network Button Panels, eBUS devices, and IPL EXP expansion interfaces

▸ Enhanced performance with greater processing power and up to four times the memory of our IP Link Pro series

▸ Multiple AV Network ports provide versatile control options for a wide range of system sizes

▸ Support secure industry standard communication protocols

▸ Powerful software available for configuration, programming, and enterprise-wide resource management

▸ Compact enclosures mount on a rack, under furniture, or on a DIN rail

Extron
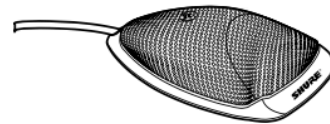
MX391, MX392, MX393 BOUNDARY MICROPHONES

With slim design and superior audio reproduction, Microflex Boundary Microphones are the ideal conference room solution. Equipped with features like programmable, silent membrane switches, interchangeable cartridges, logic inputs and outputs, and LED indicators, Microflex Boundary microphones provide high-quality sound for a wide range of applications.

Specifications

Type	Condenser (electret bias)
Frequency Response	50 Hz – 17 kHz
Polar Pattern	MX391/C, MX392/C, MX393/C: Cardioid MX391/S, MX392/S, MX393/S: Supercardioid MX391/O, MX392/O, MX393/O: Omnidirectional
Output Impedance	EIA rated at 150 Ω (180 Ω actual)
Logic Connections (MX392 Only)	LED IN: Active low (≤1.0 V). TTL compatible. Absolute maximum voltage: –0.7 V to 50 V. SWITCH OUT: Active low (≤0.5 V), sinks up to 20 mA, TTL compatible. Absolute maximum voltage: –0.7 V to 50 V (up to 50 V through 3 kΩ).
Environmental Conditions	Operating temperature range: –18° C – 57° C Relative Humidity: 0 – 95%
Power Requirements	11 – 52 Vdc phantom, 2.0 mA

MX391
Boundary microphone

MX392/ MX393
Boundary microphone

	MX391	**MX392/MX393**
Sensitivity (at 1 kHz, open circuit voltage; 1 Pascal = 94 dB SPL); All settings -12 dB at 0 gain (internal modification)	Cardioid -29.5 dB (33.5 mV) Supercardioid -28.3 dB (38.5 mV) Omnidirectional -21.8 dB (81.4 mV)	Cardioid: -27.5 dBV/Pa (42.2 mV) Supercardioid: -26.5 dBV/Pa (47.3 mV) Omnidirectional: -22.0 dBV/Pa (79.4 mV)
Maximum SPL 1 kHz at 1% THD, 1 kΩ load; All settings +6 dB at 0 gain (internal modification)	Cardioid: 118.8 dB Supercardioid: 117.5 dB Omnidirectional: 110.7 dB	Cardioid: 117.0 dB Supercardioid: 116.0 dB Omnidirectional: 111.5 dB
Equivalent Output Noise A-weighted	Cardioid: 22.6 dB SPL Supercardioid: 21.3 dB SPL Omnidirectional: 14.5 dB SPL	Cardioid: 23.0 dB Supercardioid: 22.0 dB Omnidirectional: 17.5 dB
Signal-to-Noise Ratio referenced at 94 dB SPL at 1 kHz	Cardioid: 71.4 dB Supercardioid: 72.7 dB Omnidirectional: 79.5 dB	Cardioid: 71.0 dB Supercardioid: 72.0 dB Omnidirectional: 76.5 dB
Dynamic Range 1 kΩ load at 1 kHz	96.2 dB	94.0 dB
Common Mode Rejection 10 Hz to 100 kHz	45 dB minimum, 10 Hz to 100 kHz	45 dB minimum, 10 Hz to 100 kHz
Preamplifier Output Clipping Level 1% THD	–6 dBV (0.5 V)	–6 dBV (0.5 V)
Polarity	Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of the preamplifier XLR output	Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output connector (MX393) or red wire relative to black wire (MX392).

Available Models

The polar pattern of the cartridge is indicated by the model number suffix: C = Cardioid, O = Omnidirectional, S = Supercardioid

MX391/C, MX391/S, MX391/O	Black surface-mount microphone, attached 3.7 m cable terminated, 4-pin mini connector, separate preamplifier
MX391W-A/C, /S, /O	Bright white surface-mount microphone, attached 3.7 m cable terminated, 4-pin mini connector, separate preamplifier
MX392/C, MX392/S, MX392/O	Surface-mount microphone, programmable membrane on/off switch, logic input/output terminals, on/off indicator LED, screw terminal connections, attached 3.7 m unterminated cable
MX393/C, MX393/S, MX393/O	Surface-mount microphone, programmable membrane on/off switch, on/off indicator LED, miniature three pin connector, and detachable 3.7 m cable.

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MXW1 BODYPACK TRANSMITTER

OVERVIEW

The MXW1 is a hybrid bodypack transmitter compatible with Microflex® Wireless systems. It offers both an integrated omnidirectional microphone and an input jack for connecting an ear-worn or lavalier style microphone. The integrated microphone is perfect for picking up speech while the bodypack is on a lanyard or tucked into a shirt pocket, and a belt clip is included for attachment to clothing.

FEATURES

- Compact, low-profile design: Fits comfortably into a shirt pocket or attached to clothing
- Integrated omnidirectional mic: Clearly captures full range audio without connecting an external microphone
- External microphone input: For connecting multiple styles of ear-worn or lavalier condenser microphones
- Bi-directional wireless: Enables return channel audio and real time remote control of all wireless microphone settings
- Earphone output: Listen to audio from a return channel for translation, cueing, or program material
- Programmable mute button: Customize local or remote muting behavior per application, with options including push-to-talk, push-to-mute, and external control.
- Standby mode: Enabled remotely during breaks or periods of inactivity to significantly extend battery life when not in use
- Wide working range: Reliable wireless coverage extends up to 160 feet (50 meters)
- Out of range alert: Emits beeping sound when range limit is exceeded
- Wide frequency response: Captures full range audio for clear voice transmission
- Easy transmitter linking: Assign the microphone to an Access Point channel by simply docking it into a Networked Charging Station and pressing "link"
- Encrypted wireless: AES 256-bit encryption for secure transmission.
- Advanced Li-ion batteries: Smart lithium-ion internal batteries provide up to 9 hours of continuous use, charge to full in 2 hours, and enable remote monitoring over the network of remaining runtime and charge status in hours and minutes
- USB charging: Connects to any standard USB power source for "always on" usage

SPECIFICATIONS (SUBJECT TO CHANGE)

Gain Adjustment Range	-25 to +15 dB (in 1 dB steps)
Maximum Input Level (Mic gain @ -16 dB)	-9 dBV
Headphone Output	3.5 mm (1/8"), dual mono (will drive stereo phones)
Maximum Headphone Output Power (1kHz @ 1% distortion, peak power, @16Ω)	17.5 mW
Antenna Type	Internal, Spacial Diversity, Linear Polarization
Battery Type	Rechargeable Li-Ion
Battery Life	Up to 9 hours Calculated with a new battery. Runtimes vary depending on battery health.
Charge Connector	USB 3.0 Type A
Housing	Molded Plastic
Recommended Storage Temperature Range	0 °C (32 °F) to 25 °C (77 °F)
Microphone Connector	4-Pin male mini connector (TA4M), See drawing for details
Input Impedance (@ 1 kHz)	>20 kΩ
Internal Microphone	Omnidirectional (20 Hz – 20 kHz)
Dimensions	22 mm × 45 mm × 99 mm (0.9 in. × 1.8 in. × 3.9 in.) H × W × D
Weight	85 g (3.0 oz.) with batteries, without microphone

Data subject to change without notice in interest of product improvements.

AVAILABLE MODELS

MXW1/O	MXW bodypack transmitter (without lavalier microphone)

OPTIONAL ACCESSORIES

SBC-USB	USB Plug-in Charger
SB901A	Replacement Battery for MXW1, MXW6, and MXW8 Transmitters
See table on right	Lavalier microphone

MXW1
Bodypack Transmitter

TA4M Connector

Top view of bodypack

① Ground
② 5 VDC
③ Audio Input
④ Active Load
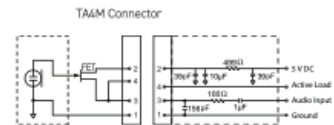
LAVALIER OPTIONS

MX150B/O-TQG	Microflex 5mm Subminiature Lavalier, Omnidirectional, Black
MX150B/C-TQG	Microflex 5mm Subminiature Lavalier, Cardioid, Black
MX153B/O-TQG	Microflex Omnidirectional Subminiature Earset, Black
MX153T/O-TQG	Microflex Omnidirectional Subminiature Earset, Tan
MX153C/O-TQG	Microflex Omnidirectional Subminiature Earset, Cocoa
WL183	Microflex 1cm Omnidirectional Lavalier, Black
WL184	Microflex 1cm Supercardioid Lavalier, Black
WL185	Microflex 1cm Cardioid Lavalier, Black
WL93	Omnidirectional Condenser Miniature Lavalier, Black
WCB6B	Countryman, 3mm Subminiature Omnidirectional Lavalier, Black
WCE6B	Countryman, Omnidirectional Rigid Earset Microphone, Black
WCE6T	Countryman, Omnidirectional Rigid Earset Microphone, Tan

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MXW2 HANDHELD TRANSMITTER

OVERVIEW

The MXW2 is a handheld transmitter compatible with Microflex® Wireless Systems. With lightweight but durable construction and integrated diversity antennas, the MXW2 delivers vivid lifelike sound, intelligent wireless performance, encrypted transmission, and advanced rechargeability for presentation and conferencing applications. Available with trusted Shure microphone cartridges, including the legendary SM58®.

FEATURES

- Interchangeable microphone cartridges: Available with the SM58®, SM86, Beta® 58A and VP68 signature Shure microphones
- Dual transmit antennas: Maximizes transmission strength depending on hand placement
- Bi-directional wireless: Enables real time remote control of all wireless microphone settings
- Programmable mute button: Customize local or remote muting behavior per application, with options including push-to-talk, push-to-mute, and external control.
- Standby mode: Enabled remotely during breaks or periods of inactivity to significantly extend battery life when not in use.
- Wide working range: Reliable wireless coverage extends up to 160 feet (50 meters)
- Range warning alert: Emits beeping sound when range limit is exceeded
- Easy transmitter linking: Assign the microphone to an Access Point channel by simply docking it into a Networked Charging Station and pressing "link"
- Encrypted wireless: AES 256-bit encryption for secure transmission.
- Advanced Li-ion batteries: Smart lithium-ion internal batteries provide up to 15 hours of continuous use, charge to full in 3 hours, and enable remote monitoring over the network of remaining runtime and charge status in hours and minutes
- USB charging: Connects to any standard USB power source for "always on" usage.

MXW2
Handheld Transmitter

SPECIFICATIONS (SUBJECT TO CHANGE)

Gain Adjustment Range	–25 to +15 dB (in 1 dB steps)
Maximum Input Level (Mic gain @ -16 dB)	–9 dBV
Antenna Type	Internal, Spacial Diversity, Linear Polarization
Battery Type	Rechargeable Li-Ion
Battery Life	Up to 15 hours
Calculated with a new battery. Runtimes vary depending on battery health
Charge Connector	USB 3.0 Type A
Housing	Molded Plastic
Recommended Storage Temperature Range	0 °C (32 °F) to 25 °C (77 °F)
Microphone Capsule	SM58®, SM86, Beta® 58A, VP68
Configuration	Unbalanced
Input Impedance (@ 1 kHz)	>20 kΩ
Dimensions	226 mm × 51 mm (8.9 in. × 2.0 in.) L × Dia. including SM58 microphone capsule
Weight	323 g (11.4 oz.) with batteries, including SM58 microphone capsule

Data subject to change without notice in interest of product improvements.

AVAILABLE MODELS

MXW2/SM58	Wireless Handheld Transmitter with SM58® Microphone
MXW2/SM86	Wireless Handheld Transmitter with SM86 Microphone
MXW2/BETA58	Wireless Handheld Transmitter with Beta® 58A Microphone
MXW2/VP868	Wireless Handheld Transmitter with VP68 Microphone

OPTIONAL ACCESSORIES

RPW112	Cartridge, Housing Assembly and Matte Grille for Wireless SM58®
RPW114	Cartridge, Housing Assembly and Matte Grille for Wireless SM86
RPW118	Cartridge, Housing Assembly and Matte Grille for Wireless Beta® 58A
RPW124/VP68	Cartridge, Housing Assembly and Matte Grille for Wireless VP68
SBC-USB	USB Plug-in Charger
SB902	Replacement Battery for MXW2 Transmitter

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MXWAPT2, MXWAPT4, MXWAPT8 ACCESS POINT TRANSCEIVERS

OVERVIEW

The MXWAPT is a 2- 4- or 8-channel wireless access point compatible with Microflex® Wireless microphone systems. It uses automated frequency coordination to assign clean frequencies to wireless microphones and manages two-way wireless transmission of encrypted audio and control signals. Power to the unit (via PoE) and Dante digital networked audio are both supplied over a single Ethernet cable to simplify installation, and the supplied mounting plate and paintable cover allow discreet placement in boardrooms and conference rooms where low visibility is preferred.

FEATURES

- Slim profile: Lightweight, discreet unit with paintable cover to match interior room colors and blend into AV environments
- Easy installation: Includes wall/ceiling mounting plate and connects to the system over single Ethernet cable (PoE compatible)
- Plenum rated: Meets rigorous fire safety test standards for installation above drop ceiling tiles
- Scalable configurations: Available in 2, 4 or 8 channel models to fit varying channel count requirements, and multiple units can be combined support configurations of up to 40 compatible channels (80 in Europe and select countries)
- Bi-directional wireless: Provides return channel audio to wireless transmitters and enables real time remote control of all wireless microphone settings
- Automated frequency coordination: Automatically scans available spectrum, coordinates clean frequency assignments, and moves channels away from unexpected interference
- Dante™ and AES67 digital networked audio: Transports low latency digital audio received from wireless microphones over Cat5e cable to any other Dante-equipped device
- Encrypted wireless: AES 256-bit encryption for secure transmission
- Selectable output power: Optimize spectrum usage by selecting the appropriate wireless output power for the desired operating range
- Diagnostic LEDs: Provide easy visual reference to system activity and indicate power, wireless connection, and network audio status

MXWAPT
Access Point Transceiver

SPECIFICATIONS (SUBJECT TO CHANGE)

Network Interface	RJ45: Gigabit Ethernet, Dante digital audio
Plenum Rating	UL 2043
Power Requirement	Power over Ethernet (PoE) Class 0, 6.5W
Antenna Type	Internal, Spacial Diversity, Circular Polarization
Housing	Molded Plastic, Cast Zinc
Dimensions	24 mm × 170 mm × 170 mm (1.35 in. × 6.7 in. × 6.7 in.), H × W × D Without mounting plate or cover
Weight	APT8 856 g (1.9 lbs) APT4 845 g (1.9 lbs) APT2 845 g (1.9 lbs) Paintable Cover 85 g (0.2 lbs) Mounting Bracket 68 g (0.15 lbs)

Data subject to change without notice in interest of product improvements.

AVAILABLE MODELS

MXWAPT8	8-Channel Access Point Transceiver
MXWAPT4	4-Channel Access Point Transceiver
MXWAPT2	2-Channel Access Point Transceiver

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MXWNCS2, MXWNCS4, MXWNCS8 NETWORKED CHARGING STATION

OVERVIEW

The MXWNCS is a 2, 4 or 8 port Networked Charging Station compatible with Microflex® Wireless microphone systems. Designed to complement boardroom aesthetics, Networked Charging Stations easily connect between conference room credenzas and AV rack closets over Ethernet via a single Cat5e cable. The front panel displays battery charge in 5 segment LED's, and remaining runtime and charge levels in hours and minutes can be monitored from any networked computer via the control software. Handheld, bodypack and boundary transmitter styles each occupy one docking space while gooseneck bases require two spaces to dock.

FEATURES

- Versatile microphone docking: Each station accepts all Microflex Wireless transmitters
- Charge status indicators: 5-segment LED's on the unit display charge status individually for every docked microphone
- Remote charge status monitoring: Ethernet connection to the system enables remote monitoring of battery charge status in hours and minutes via the control software or third party control systems
- Easy transmitter linking: Assign docked wireless microphones to channels on an Access Point Transceiver by simply pressing "link"
- Rapid charge times: Reaches 50% charge in one hour and fully charges transmitters in two hours
- Overcharge protection: Smart recharging circuitry safeguards against battery damage and extends life cycles

SPECIFICATIONS (SUBJECT TO CHANGE)

Charge Time	MXW1, MXW6, MXW8:	50%=1 hour; 100%=2 hours
	MXW2:	50%=1.5 hour; 100%=3 hours
Network Interface	10/100 Mbps Ethernet	
Power Requirement	15 V DC @ 3.3 A maximum, supplied by external power supply (tip positive)	
Housing	Molded Plastic, Cast Zinc	
Dimensions	NCS8: 68 mm × 343 mm × 184 mm (2.7 in. × 13.5 in. × 7.25 in.), H × W × D	
	NCS4: 68 mm × 191 mm × 184 mm (2.7 in. × 7.5 in. × 7.25 in.), H × W × D	
	NCS2: 48 mm × 102 mm × 154 mm (1.9 in. × 4.0 in. × 6.1 in.), H × W × D	
Weight	NCS8 2.9 kg (6.4 lbs)	
	NCS4 1.7 kg (3.7 lbs)	
	NCS2 0.8 kg (1.8 lbs)	

AVAILABLE MODELS

MXWNCS8	Networked Charging Station, 8 Port
MXWNCS4	Networked Charging Station, 4 Port
MXWNCS2	Networked Charging Station, 2 Port

MXWNCS2
Networked Charging Station shown with MXW2/SM58 and MXW6

MXWNCS4
Networked Charging Station

MXWNCS8
Networked Charging Station

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Low Profile, High Reliability.

MX153
Earset Headworn Microphone

The Shure Microflex® MX153 is a professional subminiature earset microphone ideal for speech and other applications requiring low-profile discreet placement where improved gain before feedback over lavalier microphones is desired. Delivering exceptional speech clarity, the MX153 is ideal for corporate presentations, houses of worship, AV conferencing and live sound reinforcement.

- Subminiature, omnidirectional cartridge offers superior speech clarity
- Ultra-lightweight, comfortable, flexible design is easy to place over either ear
- Kevlar reinforced, soft flex cable
- Matte Black, Tan, and Cocoa color options available

MX153 in Black, Cocoa, Tan

Available Models

MX153/BO-TQG
Black
MX153/CO-TQG
Cocoa
MX153/TO-TQG
Tan

AMPETRONIC

D Series Dante™ Networkable DSP MultiLoop™ Drivers

The D Series represents the global benchmark for digital audio hearing loop systems. The compact, elegant and sturdy units not only feature digital signal processing and networking functionality, but are also the most versatile and powerful solution available. Dante Versions also feature a dedicated input for plug and play Dante network audio.

The D Series Dante range consists of 4 class 'D' drivers (3 dual loop output and 1 single output models); meaning a 60%+ increase in energy efficiency over existing solutions. Both drivers feature capacitive touch front panels with intuitive menus, built in test signals, and are fully networkable with a Wi-Fi accessible standard browser based control panel for remote set-up, monitoring and email alerts, and with Loopworks Measure LoopLink for easy test and commissioning.

The D7 Dante and D10 Dante feature 7 and 10 Amps per loop output respectively plus ample voltage headroom, making it the most flexible solution on the market, suitable for a huge range of applications. The added power of the D14 Dante provides a solution for installations in environments containing very high levels of metal, previously not possible without the use of combiners.

In another first for high-power Class D Induction Loop drivers, installation can be performed with total confidence, as unique multi-stage filtering ensures compatibility with both other system equipment and global EMC regulations. The D Series Dante also boasts Dual slope Metal Loss Control that caters for a wide range of metal loss frequency characteristics.

Features

- Dante input for network audio
- AES67 compliant
- Single or dual output options. Dual outputs featuring accurate and stable 90° phase shift
- Networkable with remote browser interface
- Built-in test tones - controllable with LoopLink
- Digital display & intuitive 'touch' menu system - 3 modes; Main, Status & Quick
- Highly energy efficient Class-D amplifier with low heat dissipation
- Up to 2 x 1,300m² Perimeter Loops area coverage
- Up to 3,300m² MultiLoop™ Low Loss area coverage
- Compact 1U rack mount unit with internal transformer for simple rack installation
- Optimised for speech frequencies with unmatched intelligibility & capable of high quality musical reproduction
- AGC & Dual Slope MLC
- Active status monitoring & remote fault reporting via email
- Data compliant with: IEC 62489-1 Standard

Applications include

- Lecture Theatres & transport concourse
- Stadia, Sports Halls, Cinemas & Theatres

MultiLoop™ System Design Configurations

MultiLoop Drivers can be used for different types of loop layout. You will need a MultiLoop system design for the loop layout which you can obtain from Ampetronic, or have your own design approved by Ampetronic free of charge.

Perimeter MultiLoops

Two channels drive single area loops either side by side or overlaid.

Suitable for applications where there is no metal in the buildings construction, or in areas of moderate metal up to a maximum loop width of 5 meters.

Simple MultiLoops

Parallel loop segments with adjacent cables for ease of installation. Does not give the even coverage of loss control or low spill loops, with dips in level between loops.
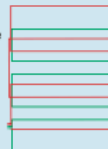
Suitable for fixed seating areas, or where dips in field strength are acceptable.
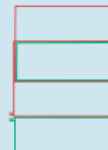
Loss Control MultiLoops

Multiple loop segments in two patterns each driven by one output channel.

Best for optimum even area coverage across any area. Suitable for large areas and buildings with metal construction.

Low Spill MultiLoops

Similar in design to Low Loss MultiLoop but with a more complex pattern that requires more cable.

Suitable for applications where loops are close together or where confidentiality is an issue. Low Spill MultiLoops require careful and precise design.
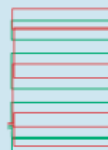
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Project Proposal

Prepared for:
Prepared by: David Bradshaw, Ui Consulting
15 June 2021
Proposal number: 999-1006

Contact

David Bradshaw
uiavconsulting@icloud.com
+44 (0) 7926 191960
www.uiconsulting.co.uk