iMatrix M

4K60 Modular Seamless Switching Matrix with Videowall

< Design spec for integrators and designers>

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

V1.0

Specifier: The Specifier/Design Professional is responsible for the accuracy of all project specifications, including system application and coordination with related sections. This guide specification is provided as a convenience and requires editing to match actual project requirements. INFOBIT SHALL NOT BE LIABLE FOR ANY DAMAGES ARISING OUT OF THE USE OF ANY OF ITS GUIDE SPECIFICATIONS. For INFOBIT design assistance and design review please contact Sales Support Services Department at info@infobitav.com.

PART 1 GENERAL

    A.   The Switcher shall support following features:

        1.   Modular Structure

            a.   Pure hardware, without Windows OS

            b.   Modular input cards, output cards, control cards, power supply modules.

            c.   Both Input and output cards shall be with 4 video ports and 4 audio ports

            d.   Support 8x8, 16x16 and max. 36x36 4K60Hz inputs and outputs.

            e.   The Switcher shall support 2 Power supplies as redundant powering.

        2.   Signal features

            a.   The Switcher shall support HDMI 2.0b, HDCP 2.2, 18Gbps, up to 4K60 YCbCr 4:4:4 24bit

            b.   The Switcher shall support multiple input and output cards: HDMI, DVI-U (DVI/VGA/YPbPr/CVBS compatible), VGA, 3G/HD/SD-SDI, HDBaseT and optical fiber.

            c.   The Switcher shall support 2K input and output cards, video resolution up to 1920x1200/60Hz, with ports of HDMI, DVI-U (DVI/VGA/YPbPr/CVBS compatible), VGA, 3G/HD/SD-SDI, HDBaseT and optical fiber.

            d.   The Switcher shall support 4K input and output cards, video resolution up to 4K60 YCbCr 4:4:4 24bit with ports of HDMI, HDBaseT and optical fiber.

            e.   The Switcher shall support up scaler 2K to 4K

            f.   The Switcher shall support 4K seamless switching

g.   The Switcher shall support videowall function, with Gen-lock. The latency between any output channel is less than 0.1ms.

h.   The Switcher shall support any size videowall layouts in the range of max. 36 screens.

i.   The Switcher shall support built-in signal equalization, signal recovery and signal re-driver technology.

j.   The Switcher shall support built-in video quality enhancement, output video quality can be adjusted.

k.   The Switcher shall support built-in HDCP processing logic to avoid HDCP compatibility issues.

l.   The Switcher shall support input cards with audio embedding, output cards with audio de-embedding.

m.   The Switcher shall support max. 64x of scene-presets can be saved/ recalled.

n.   The Switcher shall support advanced EDID management (Internal EDID or copy from any output devices).

o.   The Switcher shall support control via front panel buttons, IR, RS-232, TCP/IP, Web GUI and PC program.

p.   The Switcher shall support analog audio embedding/ de-embedding with LPCM 2.0CH, analog audio and video signals are switched synchronously.

q.   The Switcher shall support 4 4K HDBaseT 150m input or output connections, 4 phoenix audio input connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4. The HDBaseT shall support PoC (Power over Cable)

r.   The Switcher shall support output image rotation (H, V, H+V rotation).

PART 2 PRODUCTS

2.01   Audio Video Matrix Switching And Transmission System

A.   Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of **INFOBIT CO., LTD.**

Specifier: The following paragraphs include related AV system components specified in other sections. Paragraph "A" and sub-paragraphs may be edited or deleted to suite actual project needs.

B.   The system shall be composed of the following components:

1.   Automation and control system.

a.   Hardware control processor.

b.   Hardware and software user interfaces.

2.   Audio Video matrix switcher unit with card chassis architecture to house modular input and output cards.

a.   Modular input and output cards.

3.   Long distance transmission devices for:

    a.   UTP and STP cable.

    b.   Multi-mode fiber cable.

    c.   Single mode fiber cable.

4.   Software for:

    a.   System configuration

    b.   System Management

2.02   Audio Video Matrix Switcher

Specifier: The following information related to the iMatrix M is based on preliminary information. All information is subject to change.

A.   Basis of design product: INFOBIT iMatrix M modular matrix switcher.

B.   The switcher shall integrate with external control systems by same manufacturer.

    1.   All control capabilities shall be accessible by compatible networked control systems.

    2.   External control shall not be limited to a single controller.

C.   The system shall be capable of stand-alone switching operation through use of a built-in front panel control interface.

D.   The switcher shall incorporate card chassis architecture with slots for modular input cards, output cards and power supplies.

    1.   Cards and modules

        a.   Input cards shall be hot swappable.

        b.   Input cards shall contain 4 video inputs and 4 audio inputs.

        c.   Output cards shall be hot swappable.

        d.   Output cards shall contain 4 video outputs and 4 audio outputs.

        e.   Shall equipped with 2 power supplies.

    2.   The switcher shall have capacity for:

        a.   Inputs Modules:

            1)   Minimum of 1 input card for 4 audio+video inputs.

            2)   Maximum of 8 input cards for 36 audio+video inputs.

        b.   Output Modules:

            1)   Minimum of 1 output card for 4 audio+video outputs.

            2)   Maximum of 8 output cards for 36 audio+video outputs.

        c.   Power Supply Modules:

            1)   Standard factory configuration shall include 2 power supplies.

                a)   Each power supply shall be capable of powering the switcher.

3.   The Switcher shall support the following input and output signal cards:

    a.   2K Input card:

        1)   4 HDMI input connections, 4 phoenix audio input connections.

        2)   4 HDBaseT 70m input connections, 4 phoenix audio input connections.

        3)   4 HDBaseT 100m input connections, 4 phoenix audio input connections.

        4)   4 HDBaseT 150m input connections, 4 phoenix audio input connections.

        5)   4 SDI input connections, 4 phoenix audio input connections.

        6)   4 VGA input connections, 4 phoenix audio input connections.

        7)   4 DVI input connections, 4 phoenix audio input connections.

        8)   4 fiber input connections, 4 phoenix audio input connections.

    b.   4K Input card:

        1)   4 4K HDMI input connections, 4 phoenix audio input connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

        2)   4 4K HDBaseT 70m input connections, 4 phoenix audio input connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

        3)   4 4K HDBaseT 100m input connections, 4 phoenix audio input connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

        4)   4 4K HDBaseT 150m input connections, 4 phoenix audio input connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

    c.   2K Output card:

        1)   4 HDMI output connections, 4 phoenix audio output connections.

        2)   4 HDBaseT 70m output connections, 4 phoenix audio output connections.

        3)   4 HDBaseT 100m output connections, 4 phoenix audio output connections.

        4)   4 HDBaseT 150m output connections, 4 phoenix audio output connections.

        5)   4 SDI output connections, 4 phoenix audio output connections.

        6)   4 VGA output connections, 4 phoenix audio output connections.

        7)   4 DVI output connections, 4 phoenix audio output connections.

        8)   4 fiber output connections, 4 phoenix audio output connections.

      d.   4K Output card:

          1)   4 4K HDMI output connections, 4 phoenix audio output connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

          2)   4 4K HDBaseT 70m output connections, 4 phoenix audio output connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

          3)   4 4K HDBaseT 100m output connections, 4 phoenix audio output connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

          4)   4 4K HDBaseT 150m output connections, 4 phoenix audio output connections. Resolutions up to 4K60 4096x2160/60Hz 4:4:4

E.   Switcher Signal Routing

    1.   Any input shall be routable to a single output or multiple outputs.

    2.   The Switcher shall support HDBaseT signal specifications.

    3.   The Switcher shall support max. 150m 4K60Hz 4:4:4 over HDBaseT input or output, support PoC.

    4.   The Switcher shall support 4K60Hz 4:4:4 seamless switching.

    5.   The Switcher shall support videowall function.

    6.   The Switcher shall support audio embedding and de-embedding.

F.   Ethernet Network

    1.   The Switcher shall include 1 Gigabit Ethernet port.

G.   Software

    1.   The Switcher shall be equipped with software for setup, configuration and diagnostics.

    2.   The Switcher shall be equipped with signal management software for:

        a.   Resolution management via drop-down list or EDID

        b.   Preset save/ recall.

        c.   Config file import/ export

        d.   Audio bypass, embedding.

        e.   Image rotation

        f.   Signal PQ (picture quality) management: Brightness, Contrast, Chroma, and sharpness

        g.   Image edge compensation

        h.   Videowall setup, signal switching

        i.   Videowall ON/OFF control

       j.   System reboot, factory reset.

       k.   Upgrade firmware

H.   Front panel user interface

    1.   The switcher shall include an integrated front panel user interface.

    2.   The Switcher push button user interface shall be capable of the following:

       a.   Switching selection.

       b.   EDID selection

       c.   Preset save/ recall.

       d.   DHCP setup

       e.   Lock buttons

       f.   Audio selection.

I.   Web GUI user interface

    1.   The switcher shall include a Web GUI user interface.

    2.   The Switcher Web GUI user interface shall be capable of the following:

       a.   Resolution management via drop-down list or EDID

       b.   Preset save/ recall.

       c.   Config file import/ export

       d.   Audio bypass, embedding.

       e.   Image rotation

       f.   Signal PQ management: Brightness, Contrast, Chroma, and sharpness

       g.   Image edge compensation

       h.   Videowall setup, signal switching

       i.   Videowall ON/OFF control

       j.   System reboot, factory reset.

       k.   Upgrade firmware

J.   IR control user interface

    1.   The switcher shall include an IR remote user interface.

    2.   The Switcher IR remote shall be capable of the following:

       a.   Switcher ON/Standby control

       b.   Inputs/ outputs switching selection.