



API REFERENCE

iMatrix H44AM

4x4 HDMI Matrix with Audio Matrix — Dot-Terminated ASCII API

4x4 HDMI	TCP · RS-232	AUDIO MATRIX
HDMI + AUDIO DE-EMBED MATRIX	DOT "." TERMINATED, NO CRLF	CEC · EDID · HDCP CONTROL

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OVERVIEW

The iMatrix H44AM is a 4x4 HDMI matrix switcher with an independent analog/SPDIF audio matrix layer, CEC pass-through control, and per-output HDCP policy control. This API reference documents the full TCP/RS-232 command set.

Commands are ASCII, terminated with a single dot "." character — there is no <CR><LF> after commands or responses. This is distinct from the CR/LF-terminated syntax used by other iMatrix models; integrators porting a driver from a CRLF-based iMatrix must strip the line-ending assumption.

Note: the H44AM shares its firmware and command set with its 8x8 sibling, the iMatrix H88AM, minus ports 5-8. The H88AM has its own separate API Reference document — do not substitute this document for H88AM integration; port ranges and de-embed indices differ.

KEY FEATURES

- **4x4 HDMI Matrix Switching** — OUT[xx]:[YY]. routes any input to any output (or all outputs)
- **Independent Audio Matrix** — AUDIO[xx]:[YY]. and AVOLUME[xx]:[YY]. route and level SPDIF+Analog audio de-embedded from HDMI in (01-04) or HDMI out (05-08)
- **CEC Input & Output Control** — CECI.../CECO... commands drive source transport keys and display power/volume/mute over CEC pass-through
- **Per-Output HDCP Policy** — HDCP[xx]ON/OFF/MAT/PAS/BYP sets forced-on, forced-off, follow-display, follow-source, or follow-source-HDCP-version behavior per output
- **EDID Management** — built-in table selection, output EDID readback, EDID-follow (learn) from a live output, and serial EDID upgrade with 10-second upload window
- **Down-Scale Control** — DS[xx]ON/OFF enables 4K-to-1080p down-scale on outputs 3-4
- **HDMI 5V Control** — @OUT[xx]. / \$OUT[xx]. independently enables/disables +5V on outputs
- **Preset System** — PresetSave/PresetRecall/PresetSta across 9 slots (01-09)
- **Front-Panel Lock** — Lock. / Unlock. commands remotely secure physical controls
- **Full Status Query Set** — STA_POUT / STA_IN / STA_OUT / STA_VIDEO / STA_DS / STA_HDCP / STA_AUDIO cover every subsystem

SPECIFICATIONS

PROTOCOL	
Control Ports	TCP/IP and RS-232 (same command set on both transports)
Terminator	Dot "." character — no <CR><LF> on commands or responses
Command Syntax	ASCII, e.g. OUT01:04. / AUDIO01:04. / CECI02044400.

Serial Baud (settable)	2400 / 9600 / 19200 / 38400 / 57600 / 115200 bps (Baudrate command)
Default Network	Bench-verified IP 192.168.1.178, firmware V1.0.2
COMMAND COVERAGE	
Audio	2 commands — de-embed audio routing + volume/mute
CEC	3 commands — input transport control, output volume/mute, output power
Control	4 commands — down-scale on/off, HDMI 5V on/off
EDID	7 commands — restore default, serial upgrade, built-in select, output readback, learn/follow, status
HDCP	5 commands — ON / OFF / MAT (follow display) / PAS (follow source) / BYP (follow source HDCP)
Lock	2 commands — front-panel Lock / Unlock
Preset	3 commands — Save / Recall / Status (slots 01-09)
Query	10 commands — GUI IP get/set, baud rate, and 5V/HPD/video/down-scale/HDCP/audio status
Switching	1 command — OUT[xx]:[YY]. matrix routing
System	4 commands — power on/off, firmware version, factory reset
COMPLIANCE	
Documentation Source	Doc ID 296 — iMatrix H44AM API command reference (infobit_api.db); bench capture: Capture Harness/data/imatrix_h44am.db (417 request/response pairs)
Related Model	iMatrix H88AM (8x8 sibling) — same protocol family, separate API Reference document

COMMAND REFERENCE

The iMatrix H44AM command set is accessed over TCP/IP or RS-232 using identical ASCII commands. All 41 commands below are grouped by function; every command and response is terminated with a single dot "." — there is no <CR><LF>.

Fidelity note: this device self-identifies on its bench label as "H88AM" but is a genuine 4x4 unit; command coverage below reflects the verified 4x4 H44AM command set (ports 5-8 not present).

Command Table (41 commands)

Command	Syntax	Description	Example	Term
AUDIO				
AUDIO select	AUDIO[xx]:[YY].	SPDIF+Analog out xx(00 all,01~04) select audio YY(01~04 HDMI in de-embed, 05~08 HDMI out de-embed).	AUDIO01:04.	.
AVOLUME	AVOLUME[xx]:[YY].	Analog out xx(00 all,01~04) volume. YY=V+/V-/MU/UM/00-100.	AVOLUME01:61.	.
CEC				
CEC input control	CECI[AA][BB][CC][DD].	Control input source via CEC. AA=port(01~04/FF), BB=dev type, CC=func(44 remote), DD=key (00 Enter,01 Up,02 Down,03 Left,04 Right,09 Back,0A Menu,0D Exit,6D PowerOn,6C PowerOff).	CECI02044400	.
CEC output vol/mute	CECO[AA][BB][CC][DD].	Control output display via CEC. DD=41 Vol+,42 Vol-,43 Mute.	CECO05404441	.
CEC output power	CECO[AA][BB][DD].	Output display power. DD=04 PowerOn,36 PowerOff. BB=80 TV.	CECO038004	.
CONTROL				
DS ON	DS[xx]ON.	Enable down-scale. xx=00 both / 01~02 = output 3 or 4.	DS01ON.	.
DS OFF	DS[xx]OFF.	Disable down-scale. xx=00 both / 01~02 = output 3 or 4.	DS01OFF.	.
OUT 5V on	@OUT[xx].	Enable HDMI 5V of output. xx=00 all / 01~04.	@OUT01.	.
OUT 5V off	\$OUT[xx].	Disable HDMI 5V of output. xx=00 all / 01~04.	\$OUT01.	.
EDID				

Command	Syntax	Description	Example	Term
EDIDMInit	EDIDMInit.	Restore factory default EDID for each input.	EDIDMInit.	.
EDIDUpgrade	EDIDUpgrade[xx].	Upgrade EDID via serial. xx=00 all/01~04, or U for built-in. Send .bin within 10s.	EDIDUpgrade01.	.
EDID use built-in	EDID/[xx]/[yy].	Input xx(00 all,01~04) uses built-in EDID yy(01~08 fixed, 09 user-defined).	EDID/03/01.	.
EDIDGOUT	EDIDGOUT[XX].	Read and print EDID of HDMI output XX=01~04.	EDIDGOUT04.	.
EDIDM learn	EDIDM[xx]B[yy].	Input yy(00 all,01~04) follows EDID from output xx(01~04).	EDIDM04B01.	.
Send serial to local	/+[X]/[yy]:xxx.	Send serial data to local. X=1..7 baud(2400..115200); yy=01 local output; xxx=data.	/+3/01:xxx.	.
EDIDSTA	EDIDSTA[xx].	Query EDID status of input. xx=00 all/01~04.	EDIDSTA03.	.
HDCP				
HDCP ON	HDCP[xx]ON.	Force HDCP 1.4 on output. xx=00 all/01~04.	HDCP01ON.	.
HDCP OFF	HDCP[xx]OFF.	Force disable output HDCP. xx=00 all/01~04.	HDCP01OFF.	.
HDCP MAT	HDCP[xx]MAT.	Output HDCP follows display. xx=00 all/01~04.	HDCP01MAT.	.
HDCP PAS	HDCP[xx]PAS.	Output HDCP follows input source. xx=00 all/01~04.	HDCP01PAS.	.
HDCP BYP	HDCP[xx]BYP.	Output HDCP follows input HDCP. xx=00 all/01~04.	HDCP01BYP.	.
LOCK				
Lock	Lock.	Lock front panel buttons.	Lock.	.
Unlock	Unlock.	Unlock front panel buttons.	Unlock.	.

Command	Syntax	Description	Example	Term
PRESET				
PresetSta	PresetSta[xx].	Query preset xx=01~09.	PresetSta01.	.
PresetSave	PresetSave[xx].	Save preset xx=01~09.	PresetSave01.	.
PresetRecall1	PresetRecall[xx].	Recall preset xx=01~09.	PresetRecall02.	.
QUERY				
GetGuiIP	GetGuiIP.	Query GUI IP.	GetGuiIP.	.
SetGuiIP	SetGuiIP:xxx.xxx.xxx.xxx.	Set GUI IP.	SetGuiIP:192.168.0.178.	.
Baudrate	Baudratexxxx.	Set local serial baud. xxxx=115200/57600/38400/19200/9600.	Baudrate9600.	.
STA_POUT	STA_POUT.	Query 5V status of output ports.	STA_POUT.	.
STA_IN	STA_IN.	Query 5V status of input ports.	STA_IN.	.
STA_OUT	STA_OUT.	Query HPD status of output.	STA_OUT.	.
STA_VIDEO	STA_VIDEO.	Query input source of each output.	STA_VIDEO.	.
STA_DS	STA_DS.	Query down-scale status.	STA_DS.	.
STA_HDCP	STA_HDCP.	Query HDCP mode of all outputs (01-04).	STA_HDCP.	.
STA_AUDIO	STA_AUDIO.	Query analog audio switch and volume.	STA_AUDIO.	.
SWITCHING				
OUT select in	OUT[xx]:[YY].	Output xx(00 all,01~04) selects input YY(01~04).	OUT01:04.	.
SYSTEM				
PowerON	PowerON.	Power on.	PowerON.	.
PowerOFF	PowerOFF.	Power off.	PowerOFF.	.

Command	Syntax	Description	Example	Term
Version	/^Version.	Query firmware version.	/^Version.	.
RST	RST.	Reset to factory default.	RST.	.

APPLICATION EXAMPLE

A typical iMatrix H44AM deployment uses the matrix to route up to 4 HDMI sources to 4 displays while independently de-embedding SPDIF/analog audio to a separate amplifier or DSP zone, all under TCP/IP or RS-232 control.

- A control processor connects via TCP/IP or RS-232 and issues dot-terminated ASCII commands — no line-ending translation is required or expected.
- OUT[xx]:[YY]. switches the video matrix while AUDIO[xx]:[YY]. independently routes de-embedded audio to a separate audio zone, decoupling video routing from audio distribution.
- HDCP[xx]MAT/PAS/BYP settings let integrators tune HDCP behavior per output to work around HDCP-incompatible displays or interactive panels.
- CECI/CECO commands provide discrete display power and volume control without a separate IR emitter.
- PresetRecall enables single-command restoration of a full room configuration (routing + audio + HDCP policy) for repeatable meeting setups.

Connection Summary

Port	Connected to
TCP/IP or RS-232	Central control processor — ASCII dot-terminated command channel
HDMI IN 1-4	Source devices (laptops, media players)
HDMI OUT 1-4	Displays with CEC support
Audio de-embed out	Separate DSP / amplifier zone, level-controlled via AVOLUME

ORDERING INFORMATION

Model	Description
iMatrix H44AM	4x4 HDMI Matrix with independent audio matrix, CEC, EDID and HDCP management (dot-terminated ASCII API)

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