PRODIGY SERIES

Solution Information

AS YOU WISH

PRODIGY Series - About

A series of audio devices performing state-of-the-art conversion, signal routing and signal processing.

‚As you wish' is the DNA of each PRODIGY.

PRODIGY uses a customizable mainframe, with dedicated slots that can be populated using a variety of IO modules and a scalable license management.

PRODIGY.MC - Modular Audio Converter

Licenses

System licenses are available as three different feature bundles matching individual applications and budgets:

- Essential
- Advanced
- Unlimited

Single license options can be acquired on demand at any time.

PRODIGY.MP - Multifunction Audio Processor

NEW

PRODIGY.MX - Multiformat Audio Matrix

Modules - Audio I/O

- Analog Mic / Line
- Digital AES3
- MADI AES10
- Network RAVENNA*
- Network Dante*
- Network SoundGrid
- Network MILAN / AVB

* compliant with AES67

‚

As you wish' - it's a PRODIGY

LIVE

BROADCAST

4

PRODIGY Series at a glance

PRODIGY.MC - Modular Audio Converter

- 8 x Converter, 2 x MADI, 1 x Audio Network
- 320 inputs / 324 outputs
- no DSP

PRODIGY.MP - Multifunction Audio Processor

- 4 x Converter, 2 x MADI, 2 x Audio Network
- 416 inputs / 420 outputs
- DSP - EQ, Dynamics, Delay / DSP Routing with insert points, Matrix Mixer and Summing Busses

NEW

PRODIGY.MX - Multiformat Audio Matrix

- 2 x MADI, 6 x Audio Network
- 1664 inputs / 1668 outputs
- DSP - EQ, Dynamics, Delay / DSP Routing with insert points, Matrix Mixer and Summing Busses*

* available in a future release

PRODIGY Features

Signal Path
- FastSRC™
  low latency sample rate conversion for MADI and Audio Network I/O
- Input Managers
  redundancy switch between physical inputs
- EARS™
  Enhanced Automatic Redundancy Switching for seamless signal redundancy
- Channel based routing
- MirrorMode for alignment of several devices

Additional Interfaces
- Headphones Output 6.3 mm & 3.5 mm
- Word Clock I/O
- USB port for legacy control of ANDIAMO devices

Control
- Dedicated network port for management
- Control via globcon, webserver and touch display
- Remote control protocols: JSON API, Ember+, OSC, SNMP

Operation
- Dual Power Supply
- Clock Redundancy Strategy
- LTC Reader
- GPI and GPO

RECORDING

INSTALLATION

Outside broadcasting of a music festival. PRODIGY.MP acts as central hub for interfacing between the PA system and the ST 2110-30 audio network.

Local IOs are used for ambience mics and moderation, MADI and Dante IOs with sample rate conversion provide clock independent connection to the artist signals.

A PRODIGY.MC acts as stagebox for connecting with the analog split from the PA system.

Both PRODIGY devices are connected to the ST 2110-30 environment via the RAV.IO modules.
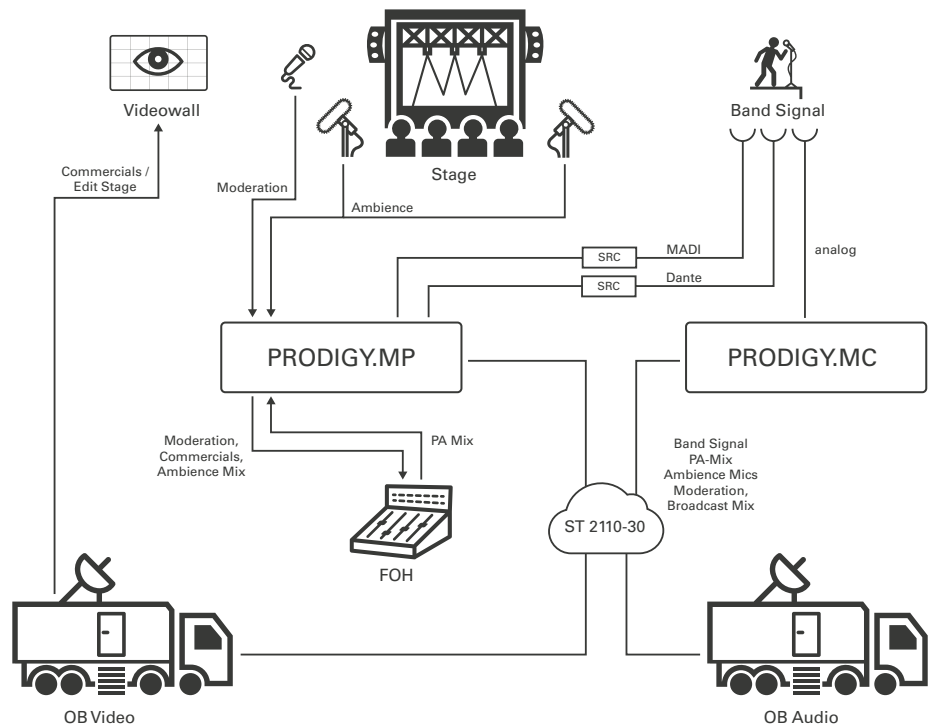
Configuration: PRODIGY.MP - 2 x MIC8.LINE.IO, 1 x AES4.IO, RAV.IO, DANTE.IO, BNC.IO - System license: Advanced
PRODIGY.MC - 6 x MIC8.HD.I, RAV.IO - System license: Essential
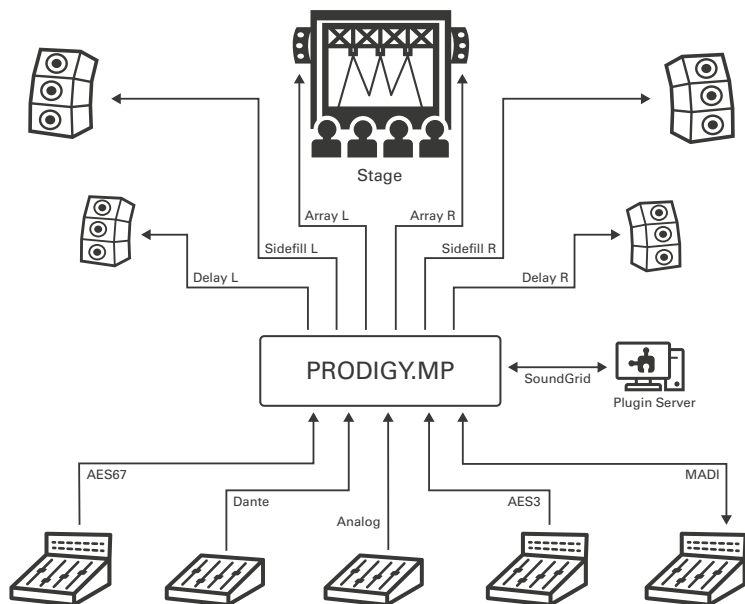
PRODIGY.MP acts as core of the PA system. All signal paths to the particular speaker positions are run through mix matrices and processed by internal EQs, Dynamics and Delay compensation.

Interfacing with the guest consoles is granted via the local IOs and the audio network connection. Digital signals are ran through low latency sample rate conversion (FastSRC™) granting clock independence.

A Waves Plugin server may be shared for additional signal processing.

Configuration: PRODIGY.MP - 3 x MIC8.LINE.IO, AES4.SRC.IO, SG.IO, DANTE.IO, SFP.IO, BNC.IO - System license: Advanced
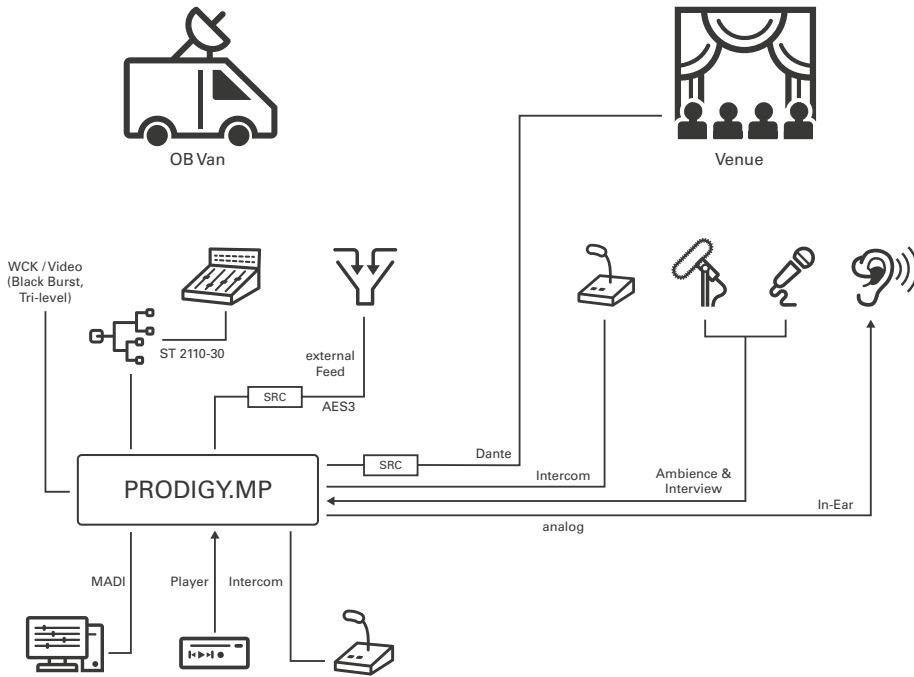
A small OB van joining a live venue with its own local moderation setup (ambience, in-ear , intercom). The venue's signal is connected via Dante and sample rate converted.

The local IOs of PRODIGY.MP interface with the van's infrastructure and the external moderation setup.

The ST 2110-30 network is synced from the RAV.IO's PTP clock which is derived from a video sync signal.

Configuration: PRODIGY.MP - 2 x MIC8.LINE.IO, AES4.SRC.IO, RAV.IO, DANTE.SRC.IO, SFP.IO - System license: Essential

Live remote production via a VPN cloud. The PRODIGY.MP at the artist's location (A&B) fetches the music signals via the local inputs and provides a low latency local monitor feed with individual EQ and Dynamics to the artist. Stereo Stems are mixed internally and sent for cross monitoring at minimum latency to the other artists.

At location C high buffered RAVENNA or SRT streams with the artists' stems are subscribed for the program mix to prevent any packet loss. All PRODIGY devices are controlled via globcon remotely.
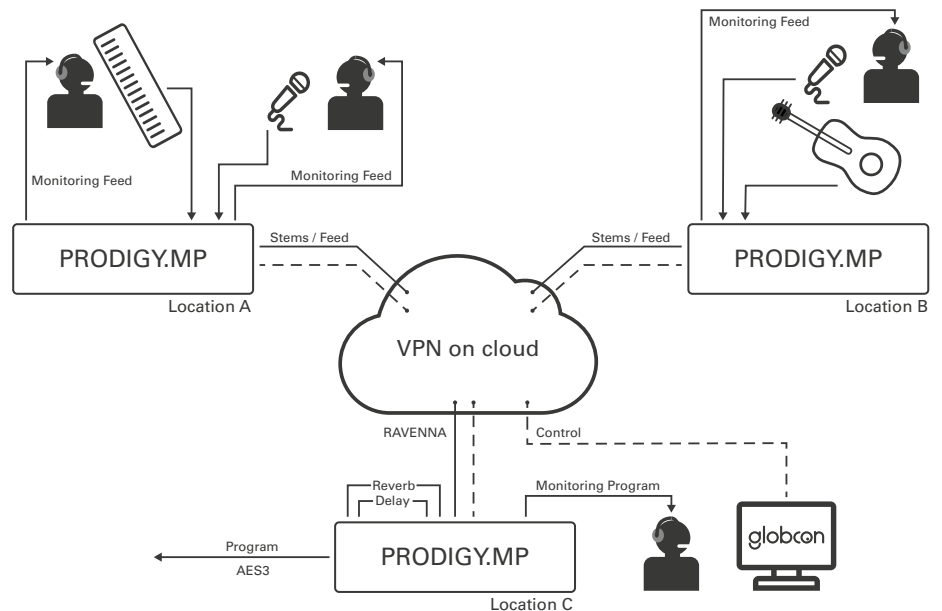
Configuration: PRODIGY.MP [A] - MIC8.HD.IO, RAV.IO - System license: Essential plus Plugin Bundle 8 and Mix & Sum 8
PRODIGY.MP [B] - MIC8.HD.IO, RAV.IO - System license: Essential plus Plugin Bundle 8 and Mix & Sum 8
PRODIGY.MP [C] - MIC8.LINE.IO, AES4.SRC.IO, RAV.IO - System license: Advanced
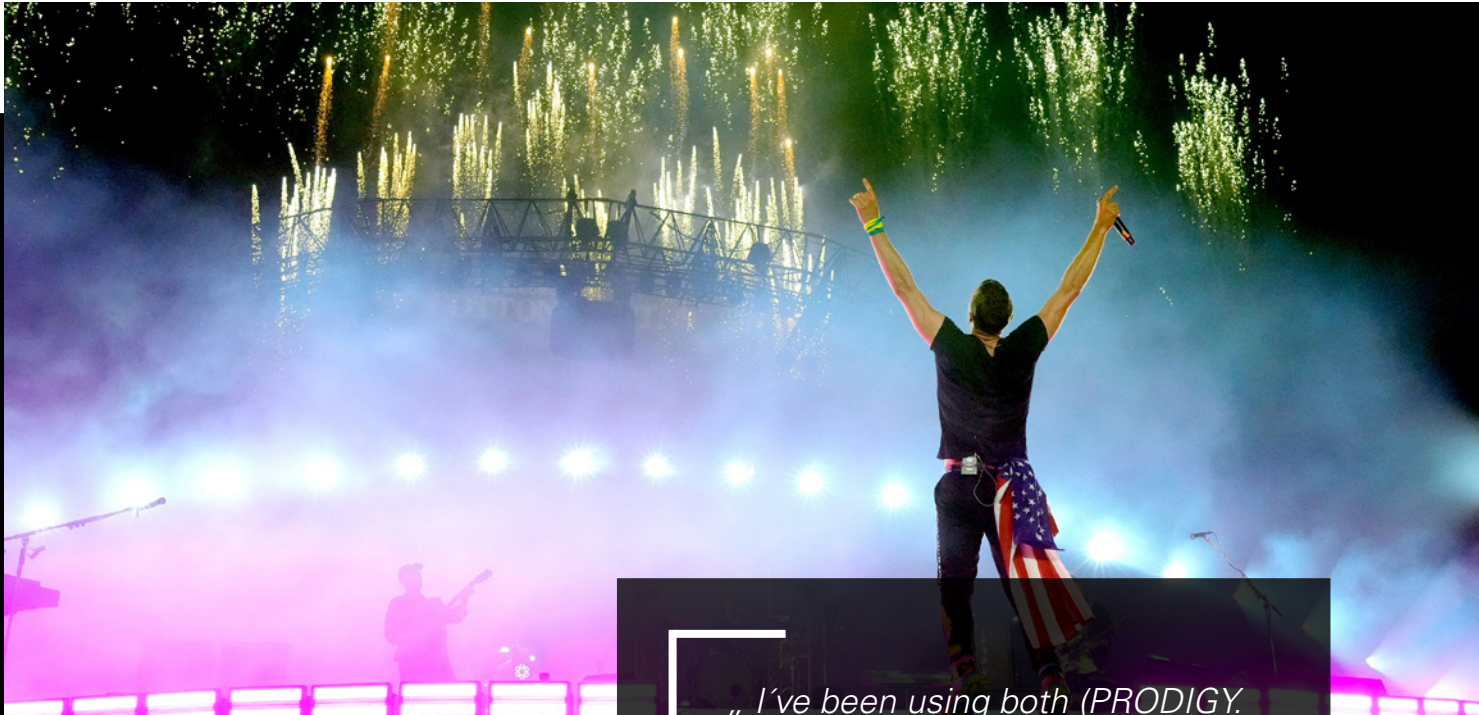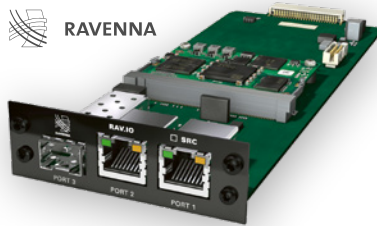
„ I´ve been using both (PRODIGY.
MC and PRODIGY.MP) for their
basic functions, but both do what
I needand do that very well. They
have also reduced out footprint,
weight and added functionality
with great tech support, which is
also key.

*Tony Smith*

PRODIGY Series - Modules

PRODIGY Series interfaces with the latest audio networking technologies.

Each audio network module is available as SRC version with Sample Rate Conversion (HD SRC) on board.

RAV.IO / RAV.SRC.IO

RAVENNA, 128 ch, 44.1 kHz to 192 kHz
Compliant with AES67, ST 2110-30 / -31
Features: 500 ms buffer, WAN capable, Stream Redundancy ST 2022-7, NMOS IS-04 (stream discovery) and IS-05 (connection management)
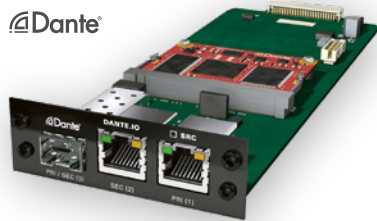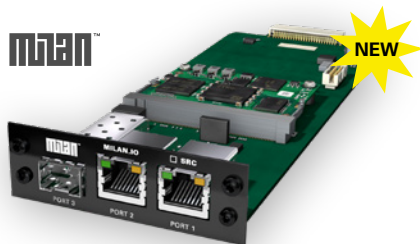

DANTE.IO / DANTE.SRC.IO

Dante, 64 ch, 44.1 kHz to 192 kHz
Compliant with AES67, ST 2110-30 (requires DDM)
Features: Stream Redundancy, primary/secondary

SG.IO / SG.SRC.IO

SoundGrid, 128 ch, 44.1 kHz to 96 kHz
The SFP port grants optical connection as a plus to the two RJ45 gigabit ethernet ports.

MILAN.IO / MILAN.SRC.IO

AVB / MILAN, 128 ch, 44.1 kHz to 192 kHz
Features: 2 redundant network interfaces
The SFP port grants optical connection as a plus to the two RJ45 gigabit ethernet ports.

Digital AES3 modules connecting eight audio channels via DSUB-25 connectors according to AES59.

AES4.IO
4 ports AES3 input / output

AES4.SRC.IO
4 ports AES3
input with SRC / output

Analog converter modules connecting eight audio channels via DSUB-25 connectors according to AES59.

MIC8.HD.I
8 ch mic input (High Definition)
PAD -30 dB, phantom power (+48 V, switchable),
Input sensitivity: -56 dBu to +24 dBu,
EIN: -128 dBu, THD @ -1 dBFS: -113 dB
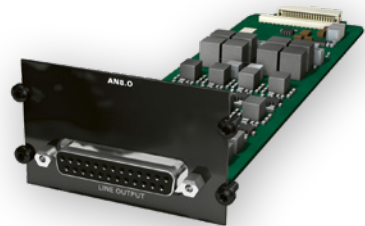Frequency response: -0.15 dB (10 Hz) / -0.15 dB (20 kHz)

MIC8.LINE.I
8 ch mic input
PAD -9 dB, phantom power (+48 V, switchable)
Input sensitivity: -55 dBu to +24 dBu
EIN: -118 dBu , THD @ -1 dBFS: -113 dB
SNR: -115 dBFS (20 Hz - 20 kHz) / -118 dB(A) @ 0dB Gain
Frequency response: -0.5 dB (10 Hz to FS/2)

AN8.I
8 ch line input,
reference levels +15 / +18 / +24 dBu via jumper
SNR: < -117,6 dB RMS (20 Hz - 20 kHz) / -119,9 dB(A)
THD @ -1 dBFS: < -119 dB
Frequency response: < -0,15 dB (10 Hz) / -0,15 dB (20 kHz)

AN8.O
8 ch line output
reference levels +15 / +18 / +24 dBu via jumper
SNR: -116,8 dB RMS (20 Hz - 20 kHz) / -119,5 dB(A)
THD @ -1 dBFS: -109 dB
Frequency response: -0,5 dB (10 Hz) / -0,15 dB (20 kHz)

All analog input modules are available with the line output option AN8.O.

MIC8.HD.IO
8 ch mic input (High Definition)
8 ch line output

MIC8.LINE.IO
8 ch mic input
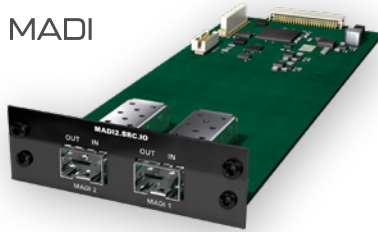8 ch line output

AN8.IO
8 ch line input
8 ch line output

PRODIGY Series - Modules

For baseband connections a variety of MADI I/Os are offered.

Multi-Port MADI modules fit into the audio network slots and are used for higher channel counts (128 ch / 256 ch).

MADI2.SRC.IO
128 ch, MADI (AES10), 2 x SFP cage
Sample Rate Conversion (HD SRC), individually switchable for each MADI port.

MADI2.BNC.SRC.IO
128 ch, MADI (AES10), 4 x coaxial, 75 Ω
Sample Rate Conversion (HD SRC), individually switchable for each MADI port.
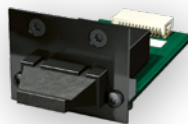

MADI4.IO / MADI4.SRC.IO
256 ch MADI (AES10), 4 x SFP cage
This module is available as SRC version with Sample Rate Conversion (HD SRC) on board - individually switchable for each MADI port.
This module operates in PRODIGY.MX only.

Single-Port MADI modules fit into the MADI slots and offer optional Sample Rate Conversion (FastSRC).

BNC.IO
64 ch MADI (AES10), coaxial, 75 Ω

SC.IO
64 ch MADI (AES10), SC optical, single or multi-mode

SFP.IO
64 ch MADI (AES10), SFP cage

SFP Transceiver are available as accessory.

„It's simply adjusting all the screws to create the best expe-rience possible for our audience and our artists."

Clemens Wannemacher

PRODIGY.MC - Licenses

System licenses include a bunch of features and are available at purchase of the device or via upgrades. ‚Essential' and ‚Advanced' may add individual licenses on demand at any time. ‚Unlimited' includes the full feature set and all future options.
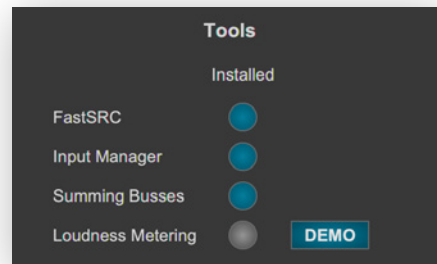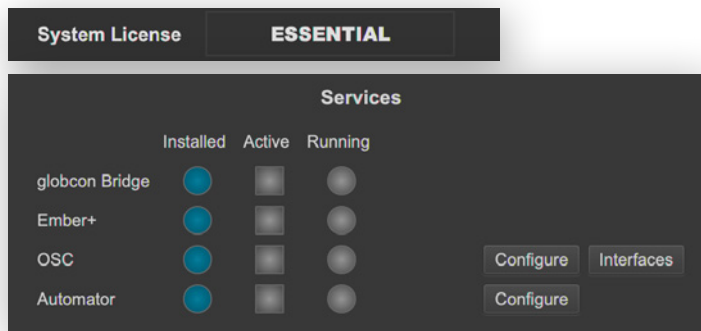

PRODIGY.MC

Essential
Channel based routing, LTC reader, Clock Redundancy, MADI Redundancy, EARS™

Advanced
adds Input Manager, Summing Busses and FastSRC™ to ‚Essential'

Unlimited
adds all existing and future licenses to ‚Advanced'

Licenses - Tools

FastSRC™
Asynchronous low latency sample rate conversion

Input Manager
32 Input Managers

Summing Busses
32 Summing Busses

Loudness Metering
8 routable channels loudness metering

Licenses - Services

EMBER+
Native support of EMBER+ protocol

OSC
Native support of Open Sound Control (OSC) protocol

SNMP
Native support of OpenSNMP Software Protocol

Automator
External and device triggers and actions (boolean algebra - GPIO/TCP/UDP/OSC/MIDI/Snapshots/etc)

Lawo HOME ready
Native support for Lawo HOME management platform for IP-based media infrastructures.

Licenses that are not installed may be tested for 30 minutes by clicking the DEMO button.
To acquire a license please contact your DirectOut representative.

PRODIGY.MP - Licenses

System licenses include a bunch of features and are available at purchase of the device or via upgrades. ‚Essential' and ‚Advanced' may add individual licenses on demand at any time. ‚Unlimited' includes the full feature set and all future options.

Essential
Channel based routing, LTC reader, Clock Redundancy, EARS™, MADI Redundancy, Input Manager, FastSRC™

Advanced
adds Plugin Bundle C and Mix & Sum C to ‚Essential'

Unlimited
adds all existing and future licenses to ‚Advanced'

PRODIGY.MP

Licenses - DSP

A, B, C mark the partial amount of the usable DSP ressources depending on the current DSP configuration.

Plugin Bundle A (25%)
8 Flex Channels, 8 FIR EQ, 8 IIR EQ, 8 Dynamics, 8 Delays

Plugin Bundle B (50%)
16 Flex Channels, 16 FIR EQ, 16 IIR EQ, 16 Dynamics, 16 Delays

Plugin Bundle C (100%)
32 Flex Channels, 32 FIR EQ, 32 IIR EQ, 32 Dynamics, 32 Delays

Mix & Sum A (25%)
2 MatMix 16x4, 2 MatMix 8x8, 8 Summing Busses

Mix & Sum B (50%)
4 MatMix 16x4, 4 MatMix 8x8, 16 Summing Busses

Mix & Sum C (100%)
8 MatMix 16x4, 8 MatMix 8x8, 32 Summing Busses

Licenses - Tools

Loudness Metering
8 routable channels loudness metering

AutoMix
Automated mixing of different audio signals in up to 16 AutoMix groups to increase intelligibility or to reduce noise.

Licenses - Services

EMBER+
Native support of EMBER+ protocol

OSC
Native support of Open Sound Control (OSC) protocol

SNMP
Native support of OpenSNMP Software Protocol

Automator
External and device triggers and actions (boolean algebra - GPIO/TCP/UDP/OSC/MIDI/Snapshots/etc)

Lawo HOME ready
Native support for Lawo HOME management platform for IP-based media infrastructures.

PRODIGY.MX - Licenses

System licenses include a bunch of features and are available at purchase of the device or via upgrades. ,Essential' and ,Advanced' may add individual licenses on demand at any time. ,Unlimited' includes the full feature set and all future options.

Essential

Channel based routing, LTC reader, Clock Redundancy, EARS™, MADI Redundancy, Input Manager, FastSRC™

Advanced*

adds Plugin Bundle C and Mix & Sum C to ,Essential'

Unlimited*

adds all existing and future licenses to ,Advanced'

* available in a future release

PRODIGY.MX

Licenses - DSP

A, B, C mark the partial amount of the usable DSP ressources included in the current DSP configuration.

Plugin Bundle A (25%)
16 Flex Channels, 16 IIR EQ, 16 Dynamics, 16 Delays

Plugin Bundle B (50%)
32 Flex Channels, 32 IIR EQ, 32 Dynamics, 32 Delays

Plugin Bundle C (100%)
64 Flex Channels, 64 IIR EQ, 64 Dynamics, 64 Delays

Mix & Sum A (25%)
1 MatMix 64x16, 16 Summing Busses

Mix & Sum B (50%)
1 MatMix 64x32, 32 Summing Busses

Mix & Sum C (100%)
1 MatMix 64x64, 64 Summing Busses

Licenses - Tools

Loudness Metering
8 routable channels loudness metering

AutoMix
Automated mixing of different audio signals in up to 16 AutoMix groups to increase intelligibility or to reduce noise.

Licenses - Services

EMBER+
Native support of EMBER+ protocol

OSC
Native support of Open Sound Control (OSC) protocol

SNMP
Native support of SNMP Software Protocol

Automator
External and device triggers and actions (boolean algebra - GPIO/TCP/UDP/OSC/MIDI/Snapshots/etc)

Lawo HOME ready
Native support for Lawo HOME management platform for IP-based media infrastructures.

Licenses	PRODIGY.MC			PRODIGY.MP / MX		
	Essential	**Advanced**	**Unlimited**	**Essential**	**Advanced**	**Unlimited**
FastSRC™	•	included	included	included	included	included
Input Manager	•					
Summing Busses	•			•*		
DSP - Plugin Bundle 'A'	n/a	n/a	n/a	•	included	
DSP - Plugin Bundle 'B'				•		
DSP - Plugin Bundle 'C'				•		
DSP - Mix & Sum 'A'				•		
DSP - Mix & Sum 'B'				•		
DSP - Mix & Sum 'C'				•		
AutoMix**				•	•	included
Loudness Metering	•	•	included	•	•	included
Services – Automator	•	•		•	•	
Services – Ember+	•	•		•	•	
Services – OSC	•	•		•	•	
Services – SNMP	•	•		•	•	
Services – Lawo HOME ready ***	•	•		•	•	
Future License Options	•	•		•	•	

System Licenses = include bunch of features and are available at purchase of the device. Only upgrades to ‚Advanced' are possible afterwards.

License Options = Single features available for purchase [●]

*   Summing Busses for PRODIGY.MP and PRODIGY.MX are included in the Mix & Sum License Options

**   AutoMix with a system license 'Essential' requires 'Plugin Bundle' an 'Mix & Sum'
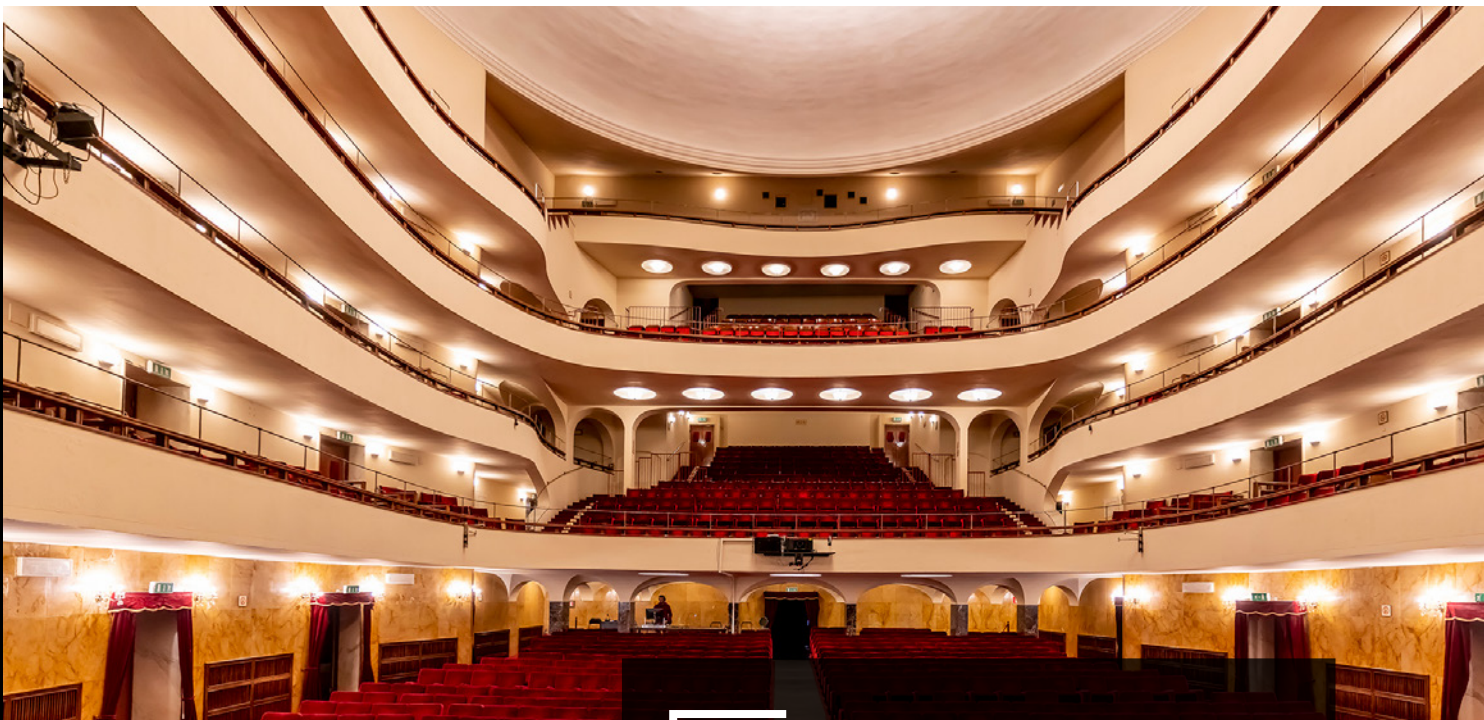
***   Includes basic functions Discovery, Config, Audio / Stream Routing. Further control requires an additional license from Lawo.

|	PRODIGY.MC	PRODIGY.MP	PRODIGY.MX
Sample rates	44.1, 48, 88.2, 96, 176.4, 192 kHz (+/- 12.5%)		
MADI	48k / 96k Frame, 56 / 57 / 64 channel, S/MUX		
DSP	no	yes	yes
Phones Out 1	1 x 6.3 mm TRS jack, mono / stereo, Output level: max. +18 dBu		
Phones Out 2	1 x 3.5 mm TRS jack, mono / stereo, Output level: max. +12 dBu		
Word Clock IO	1 x coaxial BNC (75 Ω termination switchable), AES11 (DARS also supported)	2 x coaxial BNC (75 Ω termination switchable), AES11 (DARS also supported), WCK 2 switchable to Video Sync (black burst, tri-level)	1 x coaxial BNC (75 Ω termination switchable), AES11 (DARS also supported), switchable to Video Sync (black burst, tri-level)
MIDI	-	2 x DIN socket	-
GPIO	2 x GPI (MOSFET switch), 2 x GPO (MOSFET switch)		
USB	1 x USB 2.0 for control of ANDIAMO	2 x USB 2.0 for control of ANDIAMO	1 x USB 2.0 for control of ANDIAMO
Management Ports	1 x RJ45	2 x RJ45, 1 x SFP	
Remote Software	globcon / web ui		
Control Plugins	JSON API, Ember+, OSC, SNMP, Lawo Home		
Power Supply	2 x 84 V to 264 V AC / 47 Hz to 63 Hz / safety class 1, phase redundant		
Power Consumption	20 to 110 W, module dependent		
Dimensions	Width 19'' (483 mm), Height 2 RU (89 mm), Depth 10'' (254 mm)		
Weight	About 10 kg		

„PRODIGY.MP gives us the ability to meet the vast majority of the technical needs of the outside companies hosted by the theater during the season"

Carlo Leari

globcon

DirectOut devices are best operated by globcon, which is a global control software platform for the management of professional entertainment production equipment, available for download at no cost. Globcon was conceived and designed from the end-user's hands-on perspective allowing consistent and coherent standardized control of multiple types of equipment from different manufacturers as if they were just one. Globcon's mission is to offer to professional users a continually evolving powerful tool able to manage any type or size of production environment in a contemporary, flexible, ergonomic and cost-effective way.

globcon
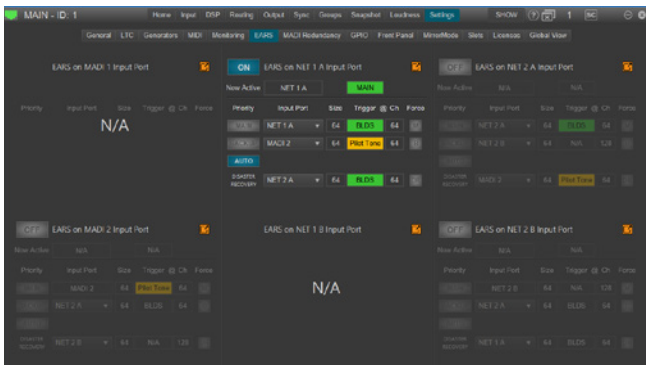
Available for Mac and PC, globcon is a "plug and play" solution enabling multiple users to simultaneously share the control of locally-connected devices via a standard Ethernet infrastructure.

HCONTROL

HCONTROL.8 is a remote controller with eight bays that is designed around the PRODIGY Series. It brings all the flexibility of ‚globcon controller' to a hardware front-end with comfortable feel.

Use it for mixing and monitoring along with the multifunction processor PRODIGY.MP or the modular converter PRODIGY. MC - a mobile and easy to transport solution. Or combine the control of several DirectOut devices on a single hardware front-end.

FlexFaders
The 100 mm motorised faders allow HCONTROL.8 to receive data from PRODIGY.MP displaying fader status and level meter information in a tailored and fully integrated way. Their behaviour adapts on the type of channel which is assigned to them. For example, when MatMix masters are assigned to the faders, the SPILL function is available. Using the SPILL button all sources of the master become accessible for immediate level mixing while the rotary encoders are used for panning within the stereo master.

Mapping
Free mapping of any audio channels and device functions. Assign FlexChannels, Groups, and Matrix Mixers to 12 layers and recall them easily via buttons (blue). Link customized display layouts of globcon to individual layers. 12 function buttons (pink) are assigned freely to execute device functions such as snapshot recalls or GPIO trigger on the device.

Applications
Applications vary between fixed installations, where one PRODIGY.MP is controlled by several HCONTROL.8 throughout a conference set-up, and remote productions, where several PRODIGY.MP in different locations are remotely controlled by only one HCONTROL.8.

Use it for mixing and monitoring along with the multifunction processor PRODIGY.MP or the modular converter PRODIGY. MC - a mobile and easy to transport solution. Or combine the control of several DirectOut devices on a single hardware front-end.