PRODIGAL Dual Analog Channel Strip & Monitor Station

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Input Selector
Rear panel XLR Mic or Line, Balanced/Unbalanced.
Front Panel TRS Line or Instrument D.I. Balanced/Unbalanced.
Front Jacks are also useful when you are using the Channel Strip as an insert, or printing tracks.

EQ
Single band, tight, responsive, and sweepable over 6.5 octaves.
+/-10dB Cut/Boost, 1 octave, Constant Q.

De-Mud
Simple and handy fixed band that targets the un-musical LF in a vocal, instrument or live room. Low Cut -3dB at 300Hz, 1 octave wide.

Air
Enhances the edges and air around vocals, strings, etc.
Helps bring vocals forward. Fixed Band of High Boost
Flat to 9KHz, +1dB/10KHz,+10dB/20KHz.
Accurate phase up to 20KHz and no dip below the boost band.

Compress/Limit
Transparently reduces dynamic peaks in program material. Applies ultra fast FET soft-knee limiting with faithful harmonics and sparkling linear phase. Compress control varies compression ratio and threshold together so that more input signal results in more compression with peaks maintained at around -12dBFS. Great for airy vocals, or producing tight, level bass tracks. Loves being driven super hard.
Attack=5uS~2.5mS Release=50mS~1.3 Sec.
Limit LED glows dynamically as limiting occurs, and reaches full illumination at the maximum gain reduction of -22dB.
Left and Right channel FETs are hand-matched for seemless alignment of stereo image.

Monitor Station
Central listening control section.
Mix local audio at zero latency with DAW playback or other source and send all via separate master faders to Phones and/or Studio Monitor outputs 1 & 2.
Playback input 3 is configured to receive TRS headphone output from your smart-phone, which may also be confugured to serve as a talk-back mic.
Headphone amp is designed to drive your phones LOUD.

FRONT PANEL

Input Preamp
Processes all signals from selected inputs.
Silky smooth, mirror balanced, low current discrete transistor design.
Includes P48 for Mic XLR, 20dB Pad, Phase Reverse, 30dB Gain Control Pot, Upper and Lower +0/-3dB (12dB/octave) Bandwidth adjust.

Input Meter
Shows post-gain/pre-EQ input level.
Displays solid VU bar with Peak Level dot above it. Peak hold is 3 sec with 18dB/sec decay.
Units expressed as -dB Full Scale.

De-Ess
Reduces sibilance in Vocals, etc.
Applies natural sounding active FET limiting to the high frequency band. Hz control sets the crossover point. Ess control sets the operating threshold which is tied to and varies with a fast-averaged sample of the full-bandwidth signal. This helps keep the amount of De-Essing consistent regardless of program volume and dynamics.
Attack=0.5mS Release=40mS.
Limit LED glows dynamically as limiting occurs.
Left and Right channel FETs are hand-matched.

Output Fader
Adjusts output level of Channel Strip.

Switchable Output/Compressor/De-Esser Meter

Output Meter
Shows post-fader output level in -dB Full Scale.
Displays solid VU bar with Peak Level dot above it. Peak hold is 3 sec with 18dB/sec decay.
-18dBFS corresponds to +4dBu at XLR output.

Compressor Meter/De-Esser Meter
Direct display of gain reduction in dB.
Displays solid bar with zero LED permanently lit.

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Multi-Region, Three Transformer Power Supply
AC inlet voltage range may be switched after removal of transparent anti-tamper cover. Users should determine the appropriate voltage setting for their country. Three separate power transformers internally supply different parts of the circuitry, helping to reduce magnetic fields and increase isolation.

Stuio Monitor Outputs 1 & 2
Connects to balanced or unbalanced inputs of powered Studio Monitors and sub-woofers, loudspeaker amplifiers, headphone amplifiers, and other devices. Can also be used as a sub-mix output. Level trim pot allows easy micro-alignment of output between professional +4dBu or domestic -10dBV equipment levels, or for instance to align main speakers on output 1 with sub-woofers on output 2. Tip is Hot, Ring is Cold, Sleeve is Shield.

Playback Inputs 1 & 2
Accepts balanced or unbalanced signals from your DAW, CD player, tape player or other device. Input gain switch allows easy alignment of input to professional +4dBu or domestic -10dBV equipment levels. Tip is Hot, Ring is Cold, Sleeve is Shield.

Main XLR Outputs
Connects to your DAW or other balanced or unbalanced Line or Auxiliary level equipment. Output Meter level of -18dBFS corresponds with +4dBu at XLR between pins 2 and 3. Output pad switch reduces that level to -10dBV. Pin 2 is Hot.

Main XLR Inputs
Accepts balanced or unbalanced Microphone or Line level inputs. Pin 2 is Hot.

REAR PANEL

300mm Deep, 3 Rack Unit Metal Enclosure
Users may choose to bolt the Prodigal into a rack, or by incorporating the optional jumbo rubber feet, use it as a table-top unit with room on top for a notebook computer or monitor. With the further addition of powered speakers, ADC and a good microphone the Prodigal has all it needs to function as the hub of a compact, or even portable, high quality professional recording setup.

Dimensions HxWxD:
Overall: 132mm x 482mm x 339mm
Brushed Aluminium Front Panel: 132mm x 482mm x 3mm
Brass Plated Rack Ears: 132mm x 47mm x 3mm
Powdercoated Zinc Enclosure: 126mm x 430mm x 300mm

AC Power:
Power consumption: 40W max
AC Voltage Required: 110-120VAC or 220-240VAC
Designed to meet or exceed necessary Australian and International Safety Standards: AS/NZS3820, AS/NZS60065, IEC60065

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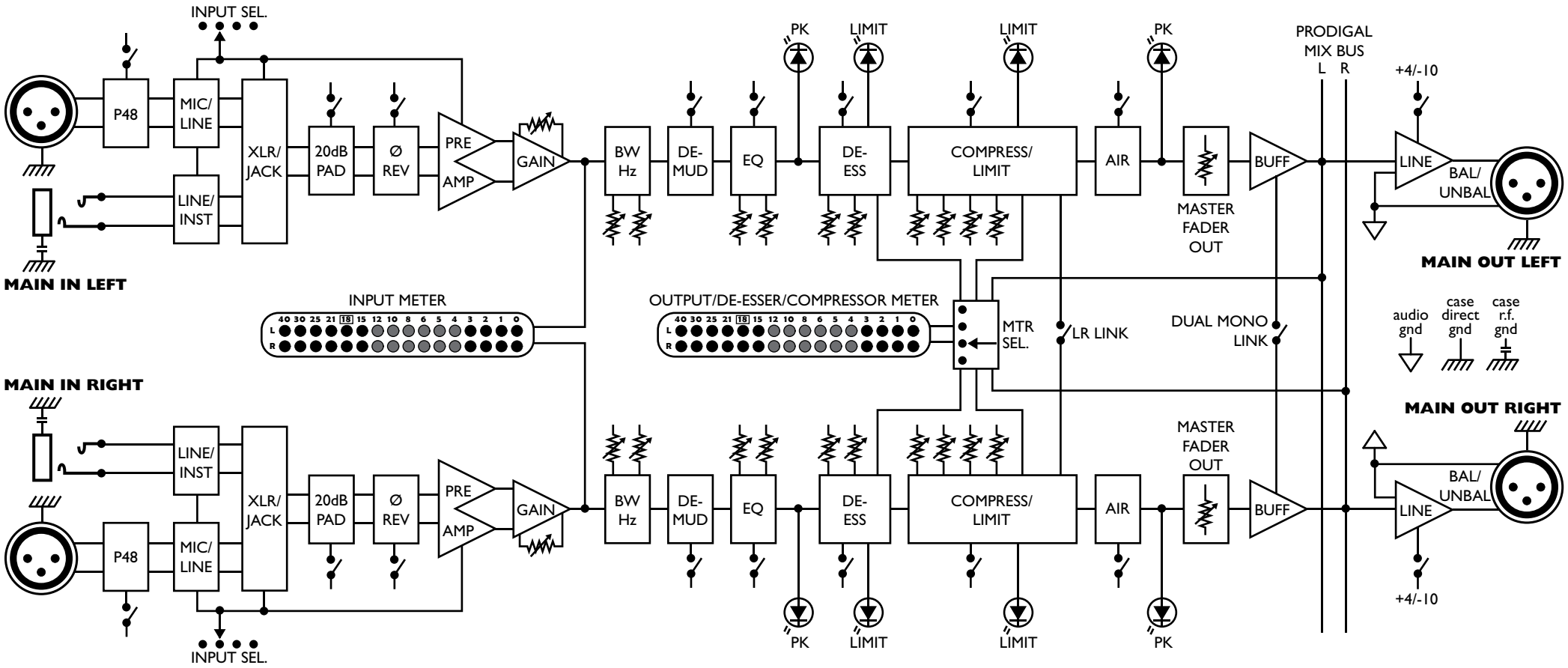
BLOCK DIAGRAM
PRODIGAL CHANNEL STRIP



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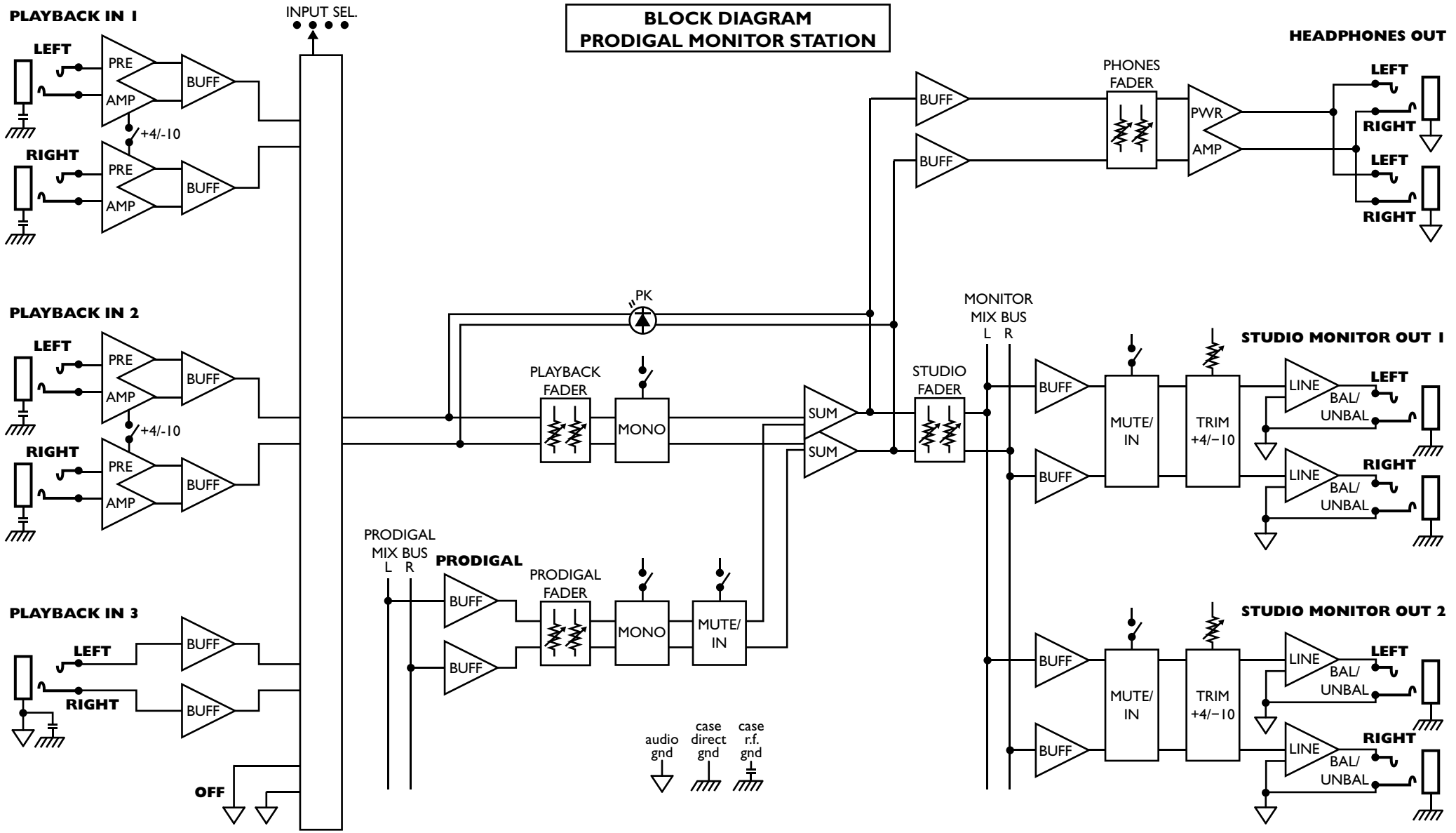

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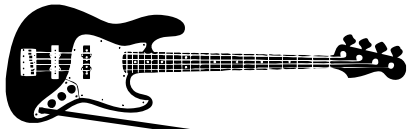
PRODIGAL CONNECTION DIAGRAM



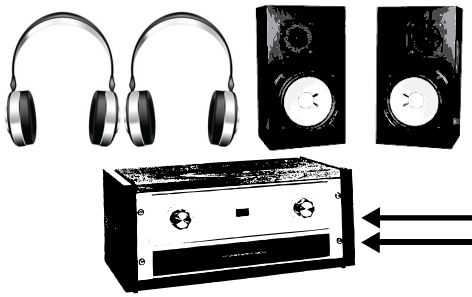
HIGH IMPEDANCE INSTRUMENT

LINE LEVEL AUDIO SOURCE

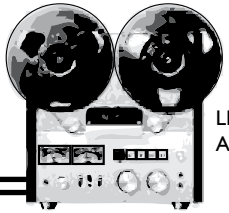
PHONE. (CAN ALSO BE CONFIGURED AS A TALK-BACK MIC)

HEADPHONES

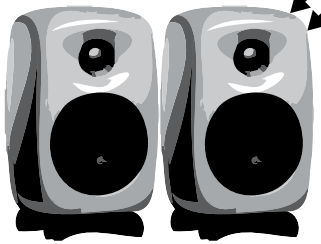
MICROPHONE



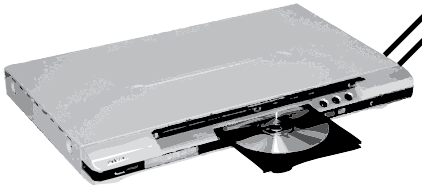
MIX MONITOR OR HEADPHONE AMP



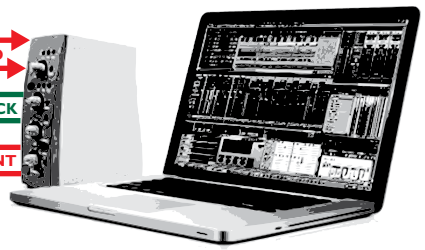
LINE LEVEL AUDIO SOURCE



MAIN POWERED SPEAKERS



CD, TAPE OR OTHER AUDIO REFERENCE



DIGITAL/ANALOG WORK STATION

PRODIGAL TECHNICAL SPECIFICATIONS

Unless otherwise stated, all input and output levels listed in these specifications refer to RMS levels for a 1kHz sinewave. To obtain Peak level values, simply add +3dB.

DUAL CHANNEL STRIP

MICROPHONE AMPLIFIER TOPOLOGY:	Analog. Balanced low current discrete transistor design. Stereo/Dual Mono switchable.
FREQUENCY RESPONSE:	20Hz-20KHz, +0/-3dB.
INPUT TYPE AND IMPEDANCE:	Microphone XLR: Balanced/Unbalanced, 1.37 Kilohms. Line XLR: Balanced/Unbalanced, 10.9 Kilohms. Line Jack: Balanced/Unbalanced, 10.2 Kilohms. Instrument Jack: Balanced/Unbalanced, 1.0 Megohm.
OUTPUT TYPE AND IMPEDANCE:	XLR +4dBu/-10dBu switchable, Balanced, 150 Ohms.
MAXIMUM GAIN:	Microphone XLR: 76dB. Line XLR: 36dB. Line Jack: 42dB. Instrument Jack: 42dB.
ADDITIONAL GAIN TO MONITORS:	Studio Monitor Outputs 1&2: 18dB. Headphones: 19.5dB.
MAXIMUM UNCLIPPED INPUT SIGNAL:	Microphone XLR: +2dBu, Balanced, 20dB Pad. Line XLR: +42dBu, Balanced, 20dB Pad. Line Jack: +22dBu, Balanced, 20dB Pad. Instrument Jack: +22dBu, Balanced, 20dB Pad.
MAXIMUM UNCLIPPED OUTPUT SIGNAL:	+22dBu, Balanced, into 10 Kilohms.
MICROPHONE EQUIVALENT INPUT NOISE:	-118dBu, 20Hz-20KHz, 150 Ohm source.
LINE EQUIVALENT INPUT NOISE:	-90dBu, 20Hz-20KHz, 150 Ohm source.
LINE LEVEL SIGNAL TO NOISE RATIO:	94dB, +4dBu IN/OUT, 20Hz-20KHz, 150 Ohm source.
INSTRUMENT EQUIVALENT INPUT NOISE:	-96dBu, 20Hz-20KHz, 150 Ohm source. -96dBu, 20Hz-20KHz, 100 Kilohm source.
PHANTOM POWER:	+48VDC +/-1V.
SOFT RAMP-UP TIME:	10 Seconds.
TOTAL HARMONIC DISTORTION:	Mic better than 0.1% Line better than 0.02% Instrument better than 0.02%
COMMON MODE REJECTION RATIO:	Better than 100dB, 1KHz.
CROSSTALK BETWEEN CHANNELS:	-72dB worst case.

"PRE" HIGH AND LOW PASS FILTERS:	12dB/Octave, underdamped 1dB at knee, frequency variable. Low Cut 20Hz~200Hz, High Cut 2KHz~20KHz.

"EQ" MID CUT/BOOST FILTER:	+/- 10dB, 3.5 octave bandwidth, Constant Q, frequency variable 100Hz~10KHz.
"DE-MUD" FILTER:	300Hz/-3dB cut, 1.4 octave bandwidth.
"AIR" FILTER:	Flat 20Hz-9KHz, +1dB at 10KHz, +10dB at 20KHz, constant phase.
PEAK LED INDICATORS:	Pos & Neg Sensors post EQ and post Compressor. LEDs turn on 4dB before clipping.

DE-ESSER TYPE:	Voltage controlled FET, soft knee, 20:1 limiting to all frequencies above crossover point and over threshold.
THD & NOISE:	Better than 0.5%
CROSSOVER FREQUENCY RANGE:	1KHz~10KHz sweepable, 12dB/octave slope.
ESS CONTROL THRESHOLD RANGE:	Any level between 0v and saturation may be selected. It is then referenced to a fast-averaged sample of the full bandwidth signal to create a floating, self-adjusting threshold point. This helps to prevent over-processing due to dynamic inconsistencies in the program material.
MAXIMUM ESS REDUCTION:	22dB.
ATTACK TIME:	500 Microseconds.
RELEASE TIME:	40 Milliseconds.
LIMIT LED:	Normally off, this LED glows in varying intensity to indicate the amount of limiting occurring at any moment. Glows brightest during moments of maximum Ess Reduction.

COMPRESSOR TYPE:	Voltage controlled FET, soft knee, Stereo Link switchable.
THD & NOISE:	Better than 0.5%
INPUT GAIN:	0~25dB variable.
MAXIMUM GAIN REDUCTION:	22dB.
COMPRESSION RATIO:	1:1~20:1 variable.
KNEE THRESHOLD:	Set as a function of Ratio Control: -33dBFS at 2:1 to -14dBFS at 20:1 to encourage Output to remain constant at around -12dB Full Scale.
ATTACK TIME:	5 Microseconds~2.5 Milliseconds variable.
RELEASE TIME:	50 Milliseconds~1.35 Seconds variable.
LIMIT LED:	Normally off, this LED glows in varying intensity to indicate the amount of limiting occurring at any moment. Glows brightest during moments of maximum Gain Reduction.

METER TYPE:	16 Step LED Meter marked in -dB Full Scale. Input and Output Meters simultaneously display Peak Dot and VU Bar. Output Meter switchable to display Gain Reduction for Compressor or De-Esser.

PEAK BALLISTICS:	Moving Dot display. Instantaneous attack, 3 second hold, 18dB/sec decay.
VU BALLISTICS:	Bar display. Averaging, 300mS Full Scale attack, 300mS decay.
GAIN REDUCTION BALLISTICS:	Reverse Bar display. Direct representation of Compressor or De-Esser Gain Reduction activity with no ballistics applied. -0dBFS LED is always illuminated when Gain Reduction mode is selected.
CALIBRATION:	-18dBFS on Output Meter corresponds to +4dBu Balanced at XLR Output. A 1KHz sine wave input that produces 1.228VRMS (+4dBu) between pin 2 & 3 at XLR Output will cause the Output Meter to display a VU Bar and Peak Dot both aligned at -18dBFS. Available headroom of 18dB is indicated in both cases. -0dBFS corresponds to the maximum output signal of +22dBu (RMS sine wave) or +25dBu (Peak headroom limit). -18dBFS on Input Meter corresponds to -18dB on Output Meter when all intermediate stages are bypassed and Out put Fader is positioned at zero.

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MONITOR STATION

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FREQUENCY RESPONSE:	Playback 1, 2 & 3 to Headphones: 7Hz-50KHz, +0/-3dB. Playback 1, 2 & 3 to Monitor Out 1 & 2: 5Hz-90KHz, +0/-3dB.
THD & NOISE:	Better than 0.01%
EQUIVALENT INPUT NOISE:	-100dBu, 20Hz-20KHz, 150 Ohm source.
LINE LEVEL SIGNAL TO NOISE RATIO:	104dB, +4dBu IN/OUT, 20Hz-20KHz, 150 Ohm source.
COMMON MODE REJECTION RATIO:	Better than 80dB, 1KHz.
CROSSTALK BETWEEN CHANNELS:	-72dB worst case.
MAXIMUM GAIN:	Playback 1, 2 & 3 to Headphones: 25dB. Playback 1, 2 & 3 to Studio Monitor Out 1 & 2: 24dB.
PEAK LED INDICATOR:	Sensors located at Playback Selector Switch output and Studio Mix Fader input. LED turns on 4dB before clipping.

PLAYBACK LR INPUTS 1 & 2:	Jack Balanced/Unbalanced +4dB Input Setting: 14 Kilohms input impedance. -10dB Input Setting: 47 Kilohms input impedance. Tip=Hot, Ring=Cold, Sleeve=Shield. Maximum Input Signal +22dBu.
PLAYBACK LR INPUT 3:	Mini-Jack Unbalanced Stereo 68 Ohms input impedance. Tip=Left, Ring=Right, Sleeve=Ground. Maximum Input Signal +16dBu.
STUDIO MONITOR LR OUTPUTS 1 & 2:	Jack Balanced/Unbalanced 150 Ohms output impedance. Tip=Hot, Ring=Cold, Sleeve=Case Ground. Maximum Output Signal +22dBu.

HEADPHONE AMPLIFIER:	Direct Coupled Transistor Output.
OUTPUT LEVEL BEFORE CLIPPING:	118dB SPL typical into 8 Ohms, +4dBu @ 192mW. 129dB SPL typical into 63 Ohms, +13.5dBu @ 200mW.

WARNING: PRODIGAL HEADPHONE AMPLIFIER OUTPUT LEVELS CAN DAMAGE HEARING !
TURN HEADPHONE VOLUME UP SLOWLY WHEN MAKING ADJUSTMENTS.

HEADPHONE OUTPUTS:	1x 6.5mm and 1x 3.5mm Jack, 10 Ohms output impedance.

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GENERAL

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POWER SUPPLY REQUIREMENTS:	110-120VAC/220-240VAC switchable, 50-60Hz
TOTAL POWER CONSUMPTION:	40W
DIMENSIONS:	19 inch Rack-Mountable. 3 Rack Units. Width - 482mm Height - 132mm Depth - 339mm
WEIGHT:	8.75kg

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