

# Table of Contents

<b>Foreword</b>	<b>1</b>
<b>How to Use this Book</b>	<b>3</b>
<b>1. Low End Frequencies</b>	<b>5</b>
Timbre	5
Sinusoids	6
Phase and Phase Cancellation	7
Summing	9
Masking	10
Partials	10
Fundamental	11
Overtones/Undertones	11
Sub Harmonics	11
Inharmonic/Inharmonicity	11
Sub Bass	12
Bass	13
Kick Drum	13
Frequency Ranges	13
<b>2. Energy and Referencing</b>	<b>15</b>
Spectrum Analyser	15
Cleaning	18
Side-Chaining	20
Side-Chain Filtering	20
Lookahead	23
Swelling	24
Faux Harmonics	27
Tuning	29
SC in M/S mode	31
Mixing – Level and Pan	38
Gating	39
Harmonic EQ	40
Limiting	42
Resonant Filtering	43
Reverb	44
Stereo Widening	44
Multiband Compression	47
Saturation/Distortion	51
Mixing – Sound Design	52

Step Modulation	55
Motion	56
<b>3. Filtering and EQ</b>	<b>61</b>
Negative/Inverse EQ	64
Kick and Bass Emphasis	68
Bleed	68
Multiband Compression	71
Downward/Upward Compression	72
Expansion	72
Saturation	73
Multimode Filter	76
Harmonic Filtering	78
Space and Tight Low End	78
<b>4. Working in Parallel</b>	<b>81</b>
Sample Nudge	83
Phase Cancellation	85
Passive/Active EQ	86
Focusing	88
Driving EQs	89
Re-amping	90
Mic Pre for Shaping	91
Working with Ranges	92
<b>5. Dynamic Management</b>	<b>94</b>
Headroom	94
Dynamics	94
Attack – Decay – Sustain – Release (ADSR)	96
Splitting the Envelope	96
Parallel Compression	98
Gate/Expander	99
Scooping/Hollowing	100
Multiband Compression	100
Internal Side-Chain Mixing	102
Mixing – Level and Pan	104
Reverb and Filtering	106
Problem Sounds	115
Tilt	116
Mixing – Sound Design	119
Saturation and Passive EQ	121
Limiting for Sound Design	124
External Side-Chain Mixing	124

<b>6.</b>	<b>Signal Paths</b>	<b>128</b>
	Clarity and Dynamic Integrity	128
	Transparent Limiting	129
	Clarity and Colour	132
	Loudness	132
	Low End Colouration	133
	Transient Shaper	135
	Glue and Saturation	137
	Motion	138
	Group Processing	138
	Extending the Air Band	141
	Modulation – sources/destinations	142
	Working with Modulators	143
	Low End Layering	144
	Dynamic Range	147
	Timing LFO Cycles	148
<b>7.</b>	<b>Middle and Side – M/S</b>	<b>150</b>
	M/S in Parallel	150
	M/S for Stereo Widening	151
	Channel Splitting	151
	Grouping	151
	Delay Modulation	154
	Multiband Compression and Expansion	156
	Crossovers	158
	Fades	163
<b>8.</b>	<b>808 and 909</b>	<b>171</b>
	808 Design	171
	Sweeping the Spectrum	172
	Referencing Dynamics	175
	Sweeping the Bandwidth	175
	Sweeping Crossovers	176
	Mixing – level and pan	179
	Flipping Phase	181
	Spectrum and Energy	184
	Side-Chaining and Mid/Side	187
	909 design	189
	Processing Harmonics	192
	Working with Bass Patterns	193
	Filters in Series	194
	Motion – Behind the Listener	194
	Working Faux Harmonics	198

Mixing – Sound Design	199
Drum Replacement	200
Step Sequencing Effects/Dynamics	204
Mixing – Beat 6 Level and Pan	209
Dynamic Limiting	210
Tuning – Autotune	210
Mixing – Beat 6 Sound Design	221
Modulating Saturation	227
<b>9. Mix Bus</b>	<b>236</b>
Mixing to the Bus	236
Channel to Master Bus	236
M/S as Mix Bus Processing	236
Mono Maker	238
Bass and Presence Shifting	239
M/S for Mono Split	239
M/S for Stereo Split	239
Using Master Bus Bleed	243
M/S and Parallel EQ	245
Corrective Tuning	248
Kick Boom	257
Matching Tunings	258
Note Reverse for Effect	259
Removing/Adding Energy	261
EQ before/after Saturation	264
Widening	265
Mixing – Mix Variation Exercises	269
<b>10. Bounce</b>	<b>270</b>
Driving Limiters	270
Attack and Release Components	271
Side-Chaining and Swelling	274
Using Attack and Release to Add Tones	275
Side-Chain Compression in Parallel	276
Driving Tubes	277
Defeat and Bleed	278
Sweeping Bleeds	279
Drumstrip Processing for Colour	282
Using Drumstrip in Parallel	285
<b>11. Pads</b>	<b>288</b>
Mixing – Level and Pan	288
Reinforcing 808 Subs	290
Evaluating Spectrums	293

Masking and Summing	293
Attack Transient Control	293
Clipping for Transient Creation	296
Widening for Space	299
Stereo Enhancement for Separation	300
Limiting for Size	300
Controlling Tightness	304
Compression and Expansion	306
M/S for Kick and Pad Separation	304
M/S for Shared Frequency Separation	305

**12. Final Word & Credits** **309**