

Model 2020MkII

Broadcast Audio Processor



*The Ultimate Dynamics Control for
FM, TV, DAB, Webcasting, CD and DVD Mastering*

APHEX
SYSTEMS

The Apex Model 2020MkII Broadcast Audio Processor



Processing in the 2020MkII - Vastly Superior

Since 1975 Apex Systems has designed and manufactured innovative signal processing equipment for professional applications. Many of our processors have become the de facto standard of the industry in their particular categories - (Dominator®, Compellor®, Aural Exciter®, Big Bottom®, etc.). It is with this heritage that we undertook the development of the original 2020. After five years in development and 15

new proprietary techniques, we created the finest sounding FM processor available. Two years later and with three new proprietary techniques the 2020MkII was born. Apex research ensures that each and every link in the 2020MkII processing chain outperforms any comparable link in any competitive product. When the links are combined the MkII is vastly superior.

Additional Features

In addition to the superb audio quality, the 2020MkII is very functional and easy to use. Other features include:

- Password security system • Programmable and automatable for day-parting • Headphone Input/Output Monitor
- Remotely and locally controllable • RDS input/output and dual composite outputs
- Can also operate in a dual mono configuration - a cost and space-effective idea for single channel broadcasters
- Insert loop for adding additional processing such as the Apex Aural Exciter and Big Bottom
- Digital I/O option includes our patented Drift Stabilized A to D Converters*
- Ultra-precision oven-controlled crystal oscillator option

Our Press

The Model 2020 was hailed worldwide as the FM processor of choice for stations where sound quality and loudness are equally important. Review after review talked about "clarity", "naturalness", "loudness", "lack of annoying artifacts", "great value", "deep, rich bottom end", "clear unclouded midrange and highs" - the list of accolades went on and on***. Now with new circuit designs, improved processing algorithms and new features the reviewers will have to find new superlatives for the 2020MkII.

Model 2020MkII Processing Chain

Leveling

- Frequency Discriminate Leveler*
- Dynamic Verification Gate*
- Sticky Leveler*
- Jump Ahead*
- Adjustable Rate
- Adjustable Gain Correction Range

Works like the perfect board operator smoothly riding gain without any processing artifacts (pumping, breathing, ducking, hole punching).

Multiband Compression

- Wave Dependent Compressor*
- Post Crossover Multiband Technique*
- 4 Adjustable Crossover Bands
- Adjustable Drive
- Band by Band Release Times
- Adjustable Band by Band Summation Mix
- Selectable L-R Linking (None, Elastic, Hard)
- Selectable Band to Band Elastic Linking

Other processors sound dissected or synthetic by enhancing artifacts and squashing out natural details. The MkII Multiband remains cohesive and natural even with the heaviest processing. Its flexibility offers a full palette of sonic textures.

* Denotes Apex proprietary circuitry

**The white paper on "FM Coverage Improvements with the 2020" by Donn Wehrbach, our VP of Engineering is available for downloading from our website.

***For a complete copy of these reviews visit our website or call Apex for a copy of the 2020 Reviews brochure.

Loudness vs. Cleanliness

Competition for loudness impacts audio quality. The 2020MkII rewrites that formula through the utilization of 18 exclusive techniques (patented and patent pending) which increase density beyond any other processor while retaining naturalness and musicality.

Increased Coverage**

Another advantage of the 2020MkII is the stability and purity of the signal, resulting in extended coverage and more consistent coverage in shadow areas.

Customize Your Own Sound

The 2020MkII comes with 8 sample presets that many will find perfect for their station's sound. Others will find these suitable as the starting point to completely customize a sonic signature from the vast palette of control over processing parameters.



For FM, TV, DAB, Webcasting, and CD/DVD Mastering

Remote Control

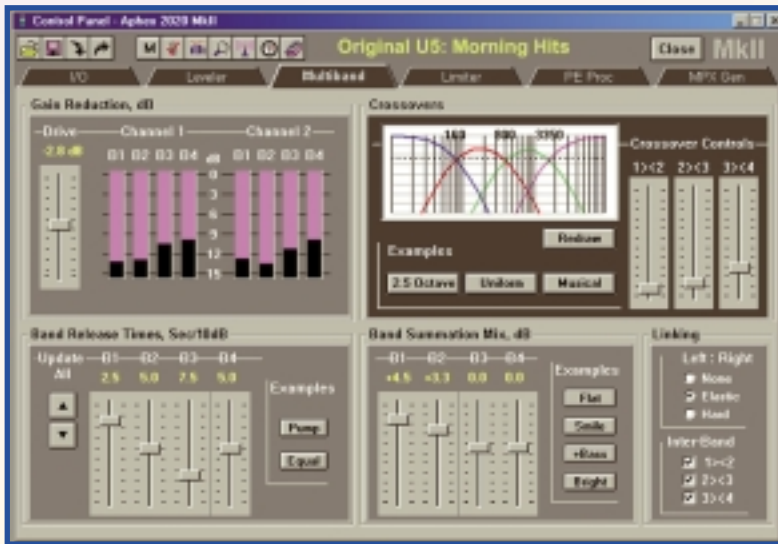
The Model 2020MkII is totally controllable locally via the front panel controls or remotely via RS232 and modem. The newly improved Remote Software is Windows® 98 & 2000 compatible.

Presets, Day & Day of Week Parting

The 2020MkII has eight factory presets and 16 user definable presets. All operating parameters can be modified and saved in a user preset. Day parting can be programmed for up to four changes of presets per day. In addition, each day of the week can be programmed to have its own day parting schedule of presets.

Options - Buy only what you need!

The basic unit has flat (no pre-emphasis) processing with analog I/O. Option 1 adds AES/EBU digital I/O. Option 2 adds a pre-emphasis limiter and low pass filter. Option 3 adds the pre-emphasis limiter, low pass filter and PPDM stereo generator. Option 4 adds an Ultra-precision oven-controlled crystal oscillator to Option 3.



Multiband Compression Screen (Remote Control Software)

Limiter

- Split Band Clipper*
- Automatic Limit Threshold*
- Phase Coherent Crossover*
- Adjustable Density
- Adjustable Bass Processing

Interacts intelligently with Multi-band, to easily achieve desired loudness. Tight, punchy, abundant bass is unmatched. 2020MkII is the only processor that holds voice equal in loudness to music program.

Pre-emphasis Limiter and Low Pass Filter

- Split Band Optical Limiter*
- Distributed Pre-Emphasis Filter*
- Adjustable Brilliance
- Overshoot Compensated Low Distortion Low Pass Filter*

Perfect pilot protection with no spurious output. Extended high frequencies & transients for a natural, open sound without harshness or edginess. Better sound and better coverage.

PPDM Stereo Generator

- Parallel Path Digital Modulation*
- Selectable Mode
- Adjustable Pilot Level
- Dual Composite Outputs
- RDS Direct Interface

Perfect modulation - no need for composite clipping. Accurate, wide, stable stereo image. Proven extended coverage.**

For a demonstration at your facility contact Aphex today

**APHEX 320A
Compellor®**



- The Compellor provides a clean consistent sound when used as a pre-processor
- Remote controllable relay hardware bypass
- Fader settings are less critical and the sound of the station will not change from announcer to announcer
- For television, level changes between programs and commercials will be smoothed out without affecting audio quality
- Servo balanced XLR in/out for maximum audio quality
- Cable television operators can offer consistency in level when a customer switches between channels
- Two channel Frequency Discriminate Leveler varies its attack time
- Dynamic Verification Gate prevents pumping and breathing during short program pauses
- Dynamic Recovery Computer accelerates compressor recovery under complex program to preserve natural sound on transients
- Also available in mono with built in Aural Exciter™ - Model 323A

**APHEX 250
Aural Exciter® III**



- The Aural Exciter increases presence, clarity, speech intelligibility and detail without distortion or overmodulation
- By pre-processing the audio, compensation can be made for the degradation the signal will receive further down the chain
- Single-ended process that can be applied at any point in the audio chain before the peak limiter, and needs no decoding
- Total flexibility in "tuning" the Aural Exciter to your needs
- Patented Harmonic Generation Process can actually increase bandwidth without increasing level
- Built-in single ended noise reduction can improve noisy sources
- Spectral Phase Refractor circuitry improves bass without eq.
- No unnatural distortion by-products
- Servo balanced XLR inputs and outputs for maximum audio quality
- Remote controllable relay hardware bypass

**APHEX 720/722
Dominator™ II**



- The Dominator provides an absolute peak ceiling adjustable in .2dB steps over a 34dB range. Equipment following the Dominator (STL, telco lines, stereo generators, uplink transmitters, etc.) may be driven to maximum input level without overload
- Model 722 is for applications requiring pre-emphasized limiting, such as STL's, cable systems, satellite uplinks
- Greater consistency of peak audio levels, maximized S/N ratios, and highest possible resolution (more bits) in the digital domain
- Patented Automatic Limit Threshold varies ratio of bandlimiting to clipping
- Remote controllable relay hardware bypass
- Switchable low to mid and mid to high crossover frequencies
- Servo balanced XLR ins and outs for maximum audio quality
- Model 722 - switchable pre- and de-emphasis, 50/75µsec/flat
- Model 720 - flat only
- 104dB Dynamic Range
- The Model 720 is without emphasis circuitry at a lower cost

**APHEX 120A
1 x 4 Distribution Amp**



Loading an output with multiple devices may cause noise, distortion and reliability problems. Y-cords and splitters are not the solution, a high quality distribution amp is. The Model 120A has one-input with four independent outputs. The inputs and outputs are transformerless and servo-balanced, allowing interface with balanced or unbalanced equipment (or even a dead short) without affecting the other outputs.

**APHEX 124A
-10dBV/+4dBu Interface Box**



Interfacing a -10dBV unbalanced device with a +4dBu balanced device must be done properly to avoid level mismatches, noise, and distortion problems. The Model 124A has four discrete channels, two channels are -10dBV inputs to +4dBu outputs and two channels are +4dBu inputs to -10dBV outputs. The -10dBV outputs are active for low impedance and the +4dBu inputs are transformerless servo-balanced, allowing the interface to be transparent and problem free.



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ApheX is proudly American.... 100% owned, engineered and manufactured in the U.S.A.

Improving the way the world soundsSM

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The Model 2020MkII contains the following proprietary circuitry: Four Band Wave Dependent Compressor, Post Crossover Multiband Technique, Split Band Clipper, Parallel Path Digital Modulation Stereo Generator, Phase Coherent Crossover, Drift Stabilized A/D Converter, Frequency Discriminate Leveler, Sticky Leveler, Dynamic Verification Gate, Distributed Pre-Emphasis Filter, Split Band Optical High Frequency Limiter, Low Distortion Overshoot Compensated Low Pass Filter.

The Model 2020/2020MkII, 320A/323A, 250, 720/722 are covered by one or more of the following patents: 4150253, 4578648, 4633501, 4843626, 4939471, 5115471, 5155769, 5334947, 5359665, 5422602, 5424488, 5450034, 5463695, 5483600, 5485077, 5612612, 5737432, 5848167, 5896458, 5898395 and 5930374. Other U.S. patents issued and/or pending.

For detailed specifications on these or any other ApheX products call, fax, e-mail or write us. ApheX reserves the right to make changes to its products without prior notice.

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