ON-AIR broadcast systems





ON-AIR with Euphonix

Beijing, **Fleetwood** China **Eurosport** 4 systems NHK Tele-Quebec London, UK **KOLR** WFLD On-Air and NRK Paris, Tokyo, Sound Montreal, live to tape Springfield, Fox 32 France Japan mobile Canada Oslo, USA Chicago, USA On-Air and 2 systems 4 systems 3 systems Norway 2 **CCTV** On-Air and live On-Air and live On-Air and Mobile live to tape On-Air and systems to tape to tape live to tape On-Air Central On -TV **RTBF** live to tape On-Air and China live to tape **WCFC-TV** France 2 Charleroi, Hamilton, **CBC** Television, Belgium Canada Chicago, USA Paris, Bejing, Montreal, 2 systems Mobile China On-Air and live France Canada On-Air and On-Air and 5 systems to tape 2 systems 2 systems live to tape live to tape On-Air and On-Air and On-Air and live to tape live to tape live to tape **Channel 1** Channel 1 News, Los Angeles, USA On-Air **Paramount TV** Los Angeles, USA 3 systems On-Air and live to tape Westwood 0ne Los Angeles, USA Sound mobile On-Air and

KTVT

Fort Worth, USA On-Air and live to tape

VTE

Torrance, USA Mobile On-Air and live to tape

live to tape

ortri,

QualliMexico City,

Mexico

On-Air and

live to tape

TVNC

Television
Nacional
de Chile
Santiago,
Chile
2 systems
Nobile On-Air
On-Air and live to tape

CBS

New York,
USA
2 systems
Anobile On-Air
and live to

WFMY

Greensboro, USA On-Air and live to tape

RAI-TV

Televisione Italiana Via Asiago, Italy On-Air and live to tape

WFXT

Boston, USA On-Air and live to tape

Sud West Funk

Nanjing TV

Hyundai

Broadcasting

Chongo-ku,

On-Air and

live to tape

Korea

Baden Baden, Germany On-Air and advanced radio program production

TV Svissera

Televisione Svissera, Lugano, Switzerland Mobile On-Air

TVNZ

live to tape

The Seven
Network

Brisbane,
Australia
7 systems
On-Air and

Moving
Pictures
Auckland,
New Zealand
Mobile On-Air





Since 1993, China Central Television have installed a total of five Euphonix consoles in both the broadcast and music recording studios. "The Euphonix is very easy to use because it operates in a very logical way" explained Mr. Li in a Pei, Audio Engineer of CCTV





WFLD-Fox Chicago TV
replaced its old console with a CS2000 replaced its old console with a CS2000 folder system. "We looked at 56 fader system. "We looked at 600 folder everything available and found everything available and found everything available and found everything available and found everything available and folder folder





Paramount has three
Euphonix consoles used for various
Euphonix consoles are installed
productions. Two consoles are installed
in studios, which are home to
in studios, which are home to
"Entertainment Tonight" and "Soul
"Entertainment Tonight" and "Soul
Train". The third console is installed in a
Train". The third console is installed in a
mobile unit and used for a daily
mobile unit and used for a daily
production of "Leeza".



SUDWESTFUNC\$

The first German
Euphonix radio mixing system was
Euphonix radio mixing system was
installed in studio T5 at SWF in south
installed in studio T5 at SWF in south
Germany. Price and functionality have
convinced SWF to go for a digital
convinced SWF to go for a digital
controlled solution with analog signal
rocessing. SWF engineers use the
processing. SWF engineers use the
console for standard on air transmission
console for standard on air transmission
as well as advanced radio program
production.

...the idea

Euphonix was founded in 1988 to bring to market an innovative successor to the traditional mixing console. Euphonix mixing systems apply computer power and software flexibility to enhance, automate, and streamline the mixing process, which has traditionally suffered from the limitations of manual control. Euphonix digital control consoles represent a breakthrough in the level of mixing and processing functions that may be stored, recalled, and reset. All controls on the digital control surface may reset to the memorized settings in less than 1/30th of a second and can be done live similar to e-mems on a video switcher. Digital control provides a significant increase in operational efficiency and flexibility, while maintaining a familiar and easy to use control surface.

The revolutionary system architecture provides higher audio performance at lower cost than traditional mechanically operated consoles or the current generation of expensive and premature "all-digital" offerings. Analog audio is digitally controlled and passed between inputs, outputs, inserts and monitors without the sonic and financial expense of digital converters. High reliability analog signal processing allows broadcasters to preserve their investments in cabling, interfaces, tape machines, and maintenance practices.

...the design philosophy

The Euphonix digital control system is based around a modular and scaleable architecture. System hardware and software are designed to grow and adapt to the changing demands of broadcast. Consoles may be installed to meet today's needs then upgraded over time by adding more channels, buses, and signal processing with plug and play hardware options. Euphonix maintains a tradition of keeping it's installed client base on a constant upgrade path through timely software releases. Each software release typically includes new features, support for new hardware options, and most importantly suggestions from the growing family of On-Air sound mixers that use the system every day.

As Digital Television standards begin to change the demands placed on broadcast audio facilities, the unique modular system approach allows facilities to keep up with the pace of the industry.

digital control ...eliminates down time

The Euphonix CS3000 is the only On-Air audio console that can be completely reset in less than 1/30 of a second, with the press of a button. The SnapShot Recall™ system will remember every switch, knob and fader position on the digital control surface, anytime. Multiprocessors control the entire audio system, including faders, mutes, pan/bal, mix minus send levels, EQ, dynamics, routing, panning, and even external MIDI controlled signal processors...Everything!

digital control ...requires less space

The CS3000's compact digital control surface fits into the tightest control rooms and remote units. A 40 fader Euphonix console is less than 5 feet / 1.5 meters wide!

All CS3000 systems consist of three main components: Mix Controller, Audio Tower, and MixView™ platform. The Mix Controller is a compact, lightweight digital control surface used to send commands to the audio electronics. Because it is simply a remote control interface, the control room is quieter, cooler, and allows for more workspace. It does not require the cooling airflow of a traditional console, which houses all of the audio circuitry under the control panel. The Euphonix Audio Tower houses all of the analog audio circuitry and can be remotely located up to 20 meters away. MixView software completes the user interface, supplying color graphics and the power to store and reset the entire system configuration.



Channel

WFXT

⊼

Channel One Network uses a CS2000B with 40 faders to mix live remote feeds from news correspondents around the world as well as for post production and audio sweetening of on-air broadcasting from their Los Angeles





The console at WFXT Fox 25 in Boston was installed to meet the intense operational requirements posed by their hour-long nightly Switching between daytime production recording and the evening news operation has become painless with the SnapShot Recall™ feature.





The CS2000B at KOLR, Springfield, MO, is used to produce 4 hours of live TV news, 5 CNN cut-ins, as well as commercials and promos on a daily basis. The console is housed in a newly designed and built control room that features full surround sound capability in both 4-2-4 and 5-2-5 matrixed formats.





All on-air broadcasting is done through a Euphonix console at WFMY in Greensboro, NC. Live shows in the morning, newscasts at night, live to tape productions, and special events are all produced through one





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France 2 in Paris do
post production on their Euphonix
post production on their Euphonix
for news, advertisements, sports
for news, advertisements including current
and special reports including current
affairs.





Belgian-French speaking national broadcaster, speaking national broadcaster, RBTF, installed two Euphonix broadcast systems in the Charleroi broadcast systems in the Charleroi studio. Both consoles will be used studio. Both consoles will be used in conjunction with hard disk recorders for surround sound (LCRS) recorders for surround sound sound post production of television series and game shows.





Chicago's
WCFC is using their
Euphonix console for expanded
Euphonix console for their live talk
music production for their live talk
shows and to develop new programs
featuring multi-track music
featuring multi-track prie
production. (pictured: Jerrie
Johnson, Audio Director (l), and
Dave Thomas)





KTVT in Dallas/Ft.
Worth uses their Euphonix for a two
hour morning show with multiple
sets and occasional live bands, plus
half-hour newscasts four times
daily. Soon to be added is a live
one-hour variety show with a live
audience, multiple sets and guests,
and live bands. (pictured: Kelly
Harris, Audio Operator)

digital control ...means flexibility

From an operational standpoint, the CS3000 provides a wide range of functionality without compromising user accessibility. Each channel strip features 2 variable gain universal amplifiers and 4 line level inputs. Any of these 6 input sources can be assigned in mono or stereo to the two long throw faders, one upper and one lower. Two 4-band EQ sections can be placed in the signal path either in mono or as a locked stereo pair. Each channel also has 4 dedicated, dynamically automated auxiliary output send controls, selectable as mono or stereo sends to any of 8 dedicated output buses. Optional dynamics processors add noise gating, compression, expansion, ducking, de-essing, and other frequency selective processing functions to every channel. Audio subgroups may be specified in three different configurations: 24 mono (or 12 stereo) subgroups sourced from upper faders, 12 mono, or 6 stereo subgroups sourced from all faders.

These configurations can be changed easily even in the field. Two stereo program buses plus PFL, AFL and solo buses complete the bus structure of the CS3000.

digital control ...delivers the best sound

The CS3000's analog signal paths have superior sound quality. The most demanding audio professionals use Euphonix CS3000 systems because of exceedingly high sonic quality. Audio circuitry is built without compromise, using only the highest grade components, delivering the cleanest audio path possible while at the same time providing all the power and flexibility expected of full digital control. All audio signal processing is housed in the Audio Tower so noise, RFI, and crosstalk can be minimized. Circuit layout is optimized for maximum audio performance, not limited by the physical restrictions of an input module as is required in a traditional, mechanical style console.



Twin Bargraph Meters

Each channel includes twin meters that may be selected to display channel sources, post fader stereo outputs and automation levels.

CleaR Displays™

Optional eight character electronic fader displays can be added to the console in groups of sixteen. Separate fader names can be saved and recalled for each title, making transitions from one show to the next fast and simple. No more lost or worn out masking tape strips.

VU Meters

The CS3000 includes three selectable mechanical VU meters used to show Left, Right and Mono levels (or LCR) sourced from either of the two main stereo buses. A Phase correlation LED display is also provided.

Mic/Line Preamps

Each channel includes two universal gain amplifiers which accept mic or line level signals. These input sections provide phase reverse, high pass filter, phantom power and variable gain control. Four additional balanced line inputs are included, making a total of six inputs per channel.

Cue/Aux Sends

4 dynamically automated level controls can be sourced from pre or post fader signals and may be assigned to any of eight auxiliary output buses which are user selectable to operate as four mono or two stereo sends.

Automated Faders

The automation system provides all standard fader automated functions. Every fader may control a mono or stereo source, doubling the number of signals the system is capable of controlling. Automated faders can be specified for lower or both upper and lower fader positions. Fader motors may be switched off if required.

CS3000 Frame

Fitted with comfortable leather arm rests and premium quality faders and rotary controls, the CS3000 frame is modular allowing additional sections to be added in the field. Special metalwork is available to convert single operator frames to dual operator systems. And custom options are available for fitting client equipment, such as reverb remotes, into blank panels.

Master Control Module

The Master Control Module houses the two master stereo output bus faders, monitor output controls, Aux send master controls, oscillator and solo controls, and 8 selectable bargraph meters.

Central Control Features

DSC™ (Digital Studio Controller)

All Euphonix systems feature an assignable central control module, the Digital Studio Controller or DSC™. Located in the center of the console, the DSC is home to many of Euphonix most powerful features. Machine control, external MIDI control, SnapShot Recall™, Total Automation™, EQ, Dynamics, input and monitoring matrix, GPI programming, speaker selection, communications microphones, and surround panning all take advantage of these assignable rotary controls and keys to quickly process operator input.



digital control ...assures the highest reliability

High reliability and ease of maintenance are achieved through the combination of analog circuitry, mature software and modular hardware. Audio electronics housed in the Audio Tower are fan cooled, removable tray assemblies, with local voltage regulation. The CS3000 design is modular throughout for easy replacement and troubleshooting of all system components. Mix Controller modules are grouped as four channels each and can be removed or replaced quickly and easily. Multiple processors provide independent operation of the Mix Controller, the Audio Tower, and the MixView computer. Even in the event the computer is off line, or the digital control surface loses power, the audio output is not interrupted. Optional redundant power supplies provide uninterrupted power under the most difficult conditions.

digital control ...prepared for the future

While no one can accurately predict the future, there is one thing that can be counted on: the future will be different. Home theater systems and direct broadcast satellite have raised consumer expectations for broadcast audio quality and introduced surround sound playback into the home. Now the Digital Television Standards provide the means to deliver high quality television programming with 5.1 channel surround sound to the same playback systems in consumer's homes. An audio console that can't keep up with these industry forces faces the same destiny as the typewriter. Euphonix Hyper-Surround provides stereo and surround panning from every channel and fully supports the surround sound format specified in the next generation television standard. CS3000 consoles are designed to integrate seamlessly with the Audio Cube optional expansion module, adding from 4 to 48 multi-format mix buses. High-resolution, software based Hyper-Surround controls (pan, surround, focus, divergence, and boom level) allow for precise positioning of sounds, both audibly and through an intuitive graphic display screen. Unique to the Hyper-Surround system is the ability to generate mixes for multiple formats from a single master mix, in real-time.



Mobile Television provides remote facilities for all Texas Rangers road telecasts in the U.S., and will be expanding to do more network sporting and entertainment events. The truck currently travels across the country to do not only baseball, but also telethons and religious programs.





Fleetwood owners Tim Summerhayes and Ian Dyckhoff wanted the most versatile broadcast mobile unit in Europe so they installed a Euphonix."The Euphonix is as many desks as you like," says Summerhayes, "which is an obvious advantage when you're covering major concerts or TV productions.





Both CBS mobile trucks travel nationwide covering a wide range of CBS sports events including: CBS sports events including: Orange Bowl Football Game, NCAA Final Four basketball tournament and The Masters Golf Tournament





The world's premier Euphonix broadcast user, Australia's Network Seven own a total of seven Euphonix broadcast systems throughout the country. Six CS2000's are used for production, post production and on-air broadcast while the seventh console is installed in a broadcast mobile unit.



On-Air with Euphonix

Euphonix unique digital control over analog audio places the emphasis on the need for speed and accuracy of operation while On-Air. Mixers are able to use the SnapShot Recall system to store a digital "picture" of the console surface. Later, recalling a SnapShot will reset the controls to those positions previously stored within 1/30 second. SnapShot Recall frees the mixer from dealing with mechanical tasks (routing and signal flow) and allows for a greater focus on the mix going to air or tape. SnapShot Recall not only makes the mixer's job easier while On-Air, it also saves time during setup. SnapShots can be created for daily news shows or local origination programs. One audio console can be used for several shows in the same day, without

the endless reset time required for a mechanical console. Simply recall the SnapShot and "audio is ready." The CS3000 is essentially two studios in one console. The Euphonix system is capable of serving multiple shows or programs. One audio control room can produce a morning news show and reset to a talk format magazine show at the push of a button. Transitions are made without the use of a single audio patch cord.

If the need arises to support a musical performance guest, Euphonix lets you create the perfect balance for this segment in rehearsals and store it for recall while On-Air. Your mix to air will be better balanced and smoother sounding. No more stealing faders or frantically switching sources, just push a button and the console is completely reset.



On-Location with Euphonix

The CS3000 has many advantages in mobile broadcast mainly due to its compact size, high audio quality and SnapShot Recall for nearly instant show set-up. The system is very rugged and has been installed in many remote vehicles worldwide. System specification considerations are the same as for an On-Air system. Stereo fader capabilities greatly increase the input handling capacity of the console so that stereo effect returns, stereo OB feeds, and stereo VTRs can come in on a single fader. Each fader may select from any combination of the 6 channel input sources, providing the mixing engineer with a mini-router at the input of each fader. This allows three times the number of sources to be normalled to the console when compared to traditional consoles

which offer only one microphone and one line input per channel.

A remote unit faces a different audio input architecture at every location, each with its own setup, and the location may change daily. In sports broadcasting, the remote unit returns to the same stadium several times in a season. It is very tedious to set up and trouble-shoot every detail of the same console configuration repeatedly. The CS3000 eliminates this redundant chore by allowing the sound crew to store SnapShots, customized for each location or show, to be instantly recalled anytime or anywhere. As quickly as the audio snake can be connected to the remote unit, audio is ready for air. Test tones to the up-link, custom mix-minus feeds to the talent, input metering of all mics, subgroups for crowd mics, or any other detail can be achieved quickly and reliably using the power of Euphonix SnapShot Recall.

EQ

Each channel has two 4-band digital control equalizers, which can be instantly adjusted from one setting to the next using the SnapShot Recall system. A real-time color graphic display of the EQ response curve, complete with band interaction, sets new standards for ease and speed of use. EQ is adjusted from the center mix position using the central assignable controls; no more gymnastics are needed to adjust and listen to EQ adjustments, and mixers are always in the monitoring sweet spot.

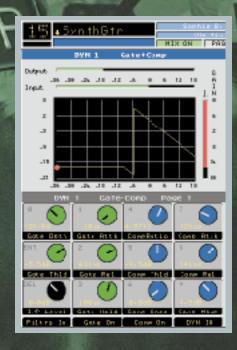
Critically acclaimed for musicality and flexibility, the Euphonix features the broadest mid-band frequency sweep range and overlap of any analog console EQ. The Lo-Mid band sweeps from 41.2 Hz to 1.3 kHz, and the Hi-Mid band sweeps from 659 Hz to 21.5 kHz both with an adjustable Q from .32 to 11.6. The two independent EQs in each channel can be locked together for precise stereo signal control or placed in series on a mono signal to create complex EQ characteristics, capable of creating effects or solving the most stubborn problems.



dynamics and EQ

Dynamics & Filters

The ES108A, an eight channel dynamics option, features a unique architecture employing DSP to precisely compute gain functions. This approach results in a state-of-the-art gain control device with unmatched sonic performance. The ES108A supports SnapShot Recall so functions can be stored and reset at the touch of a button. Users can add their own presets to the library of factory presets. A Euphonix patented color graphical display shows dynamic gain control in action. The Gain Ball™ makes set-up, operation, and monitoring of the ES108A's operation fast, simple and intuitive. A red ball tracks the theoretical gain curve in real-time and visually indicates attack and release time adjustments. For the first time the effect of dynamic processing can be accurately predicted and displayed. Standard gain functions are available to be used simultaneously. A new mode, Dynamic Notch, creates a frequency dependent gain reduction band ideal for use in de-essing or de-ringing, as well as solving many other gain related problems. Each channel of the ES108A includes a pair of digital control filters which can be individually selected to low pass, high pass, band pass, or notch. These 12 dB per octave filters can be placed in the main signal path, or the side chain of the gain control element. The ES108A is so flexible it even allows the operator to select negative compression ratios for very special gain-based effects. The ES108A is more than just a compressor / expander / limiter - it's a creative tool!



specifications

...standard features

- SnapShot Recall total console reset in less than 1/30th second
- Total Automation of all console controls to timecode
- Dynamic automation of faders, mutes, stereo pan, EQ and aux sends
- Comprehensive MIDI machine control and MIDI program change automation
- High resolution active matrix color graphic display screen
- DSC central control section with dual moving faders
- Two automated long-throw faders (mono or stereo) per channel
- Two automated pan controls per channel
- Two automated 4-band parametric EQs per channel
- 24 user configurable audio subgroups
- Two stereo program buses
- 4 automated aux sends to 8 aux buses
- Two high-intensity LED bargraph meters (Peak/VU selectable) per channel
- DCA (Digitally Controlled Attenuator) level controllers for high accuracy, wide bandwidth, ultra low noise and distortion
- DCA group master control from any fader
- Pre-wired fully connectorized TT patchbay (premium quality jacks)
- High speed MixView processing platform with hard disk, removable hard drive, and MIDI interface
- 6 inputs (2 universal mic/line, 4 fixed line) per channel
- 5 outputs (3 pre-fader and 2 post-fader) per channel
- Three master VU meters and LED phase correlation display
- 3 programmable stereo monitor outputs that may be linked together for 4 or 6 channel monitoring
- 8 high-intensity LED bargraph master meters
- Software defined control surface allowing feature upgrades

...system options

• Additional Buses Adds 4 to 48 extra multi-format bus

feeds for aux/cue sends, mix-minus feeds, or surround panning buses

• **Dynamics** 8 channels of dynamics processing

providing simultaneous gate/expander, compressor/limiter, and hi/lo pass filters. Settings can be stored and recalled as part of a SnapShot for

instant recall

Master Expander Master Facilities Expansion: 64 input

monitor matrix, 8 stereo output record matrix, 8 Stereo Speaker Outputs, 3 Communications Microphone Inputs, 16 General Purpose Interface Relays (GPIs), Direct Feeds for ST1 and ST2, Mono Feeds for ST1 and ST2, Comprehensive 288 jack patchbay

• CleaR Displays Channel label electronic alphanumeric

Readout, electronic fader labels

Hi Rel PSU
 Redundant power supply option

• Audio routing matrix Provides up to 48 input by 48 output

routing with computer control

Machine Control Central machine control synchronizing
 hub for multi-machine production

environments

portable demo systems

Euphonix maintains a number of small, portable demo systems for use when making sonic or operational evaluations in facilities that may already have a console installed. Call your nearest Euphonix sales and service office to make an appointment for an instudio test of the CS3000.

Meters

2 VU/Peak meters/ch displays all inputs, stereo post fader signal, MT bus, and automation levels

OUT1,2,3

Insert Sends (Pre-Fader Outs) shows which sources are sent to inserts

M1 & M2 Inputs

Mic or line variable gain, phase rev, phantom, hi pass filter

Cue/Aux ABCD

4 automated sends to 8 buses are sourced individually from any of 6 inputs (M1,M2,L1,L2,L3,L4). These sends may be linked to follow the upper or lower fader's source and may be configured as 4 mono or 2 stereo pairs

Upper Mono/Stereo Fader and Pan

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Sourced from any or all 6 inputs and feeds post pan/bal to ST1, ST2, Group buses, and DIRect outs

Lower Mono/Stereo Fader and Pan

Sourced from any or all 6 inputs and feeds post pan/bal to ST1, ST2, Group buses, and DIRect outs

training

There are over 350 systems installed worldwide making Euphonix an extremely popular mixing system. This popularity creates a large demand for operator training. Euphonix is committed to providing in-depth training programs through individual offices or via new demo systems made available to areas not directly served by the offices. Euphonix provides a detailed operational manual and one-on-one training for engineers interested in learning the system. The Euphonix web site also includes training resources with on-line versions of the System Overview available for browsing or download.

The Euphonix system is easy to learn, with simple operation of EQ, dynamics, aux sends and automation. Its unique routing is different from in-line systems due to the large number of inputs and outputs available from the console. Most engineers feel at home after a couple of sessions behind the console. Once you master powerful features such as the SnapShot Recall system it is difficult to go back to a traditional analog system. To find out why the Euphonix is so popular and easy to learn, contact any of the Euphonix offices or distributors to schedule training or a self paced tutorial.

web page

Euphonix has been on-line since October 1995 with one of the industry's most informative web sites. Our web-site has over 100 pages of information about the company and the CS range of consoles. The web-site provides a unique up-to-date resource for anyone interested in finding out about Euphonix. There are diagrams, contact and e-mail details, distributor lists, in-depth product

brochures and a large industry links page. For up-to-the-minute news about Euphonix check out this very valuable resource.

www.euphonix.com



international sales and service

Located in the heart
of the Silicon Valley, 30
miles south of San
Francisco. Headquarters
includes manufacturing,
administration,
marketing, engineering,
marketing, engineering,
and service departments.
An on-site studio is fitted
with a 96 fader CS3000
system with surround
sound monitoring for
sales, demonstrations and
product testing.

The Los Angeles office is within 30 minutes drive of most major studios. Sales management for the United States, Canada and Pacific Rim countries as well as LA service are located in this office. An on-site studio provides training and demonstrations to clients from all over the world.

Centrally located, the
New York office includes
a fully equipped
demonstration studio
and is perfectly situated
to serve this thriving
metropolis. Sales and
service for the Eastern
United States are
managed from here.

Located on the world famous Music Row, the Nashville office is ideally situated for direct access to the country music scene. The office provides sales and service for the South East region of the United States and includes a demonstration studio for training and sales.

Our London office provides a European sales and service base for Euphonix. The UK market is served directly from this office while sales in other European countries are managed through distributors.

The new Tokyo office reflects Euphonix commitment to this important market. Like all of our Euphonix offices, the Japanese office includes sales, service and a demonstration studio with an emphasis on engineer training.

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