Sat·16

SATELLITE
PROGRAM
CONTROLLER

**BROADCAST
ELECTRONICS INC.**

Sat-16

The Answer to Automating Satellite Formats

- ☐ Exclusive "Direct Start" to automate satellite formats the way they were intended to be.
- ☐ Memory capacity for full 24 hours of operation.
- ☐ Reliable operation.
- ☐ Quick and simple programming.
- ☐ Expandable at anytime.

Your Choice

Getting the right ad in the right slot at the right time can be a challenge when programming a satellite delivered format. You generally have two choices—insert the spots manually or automate the service.
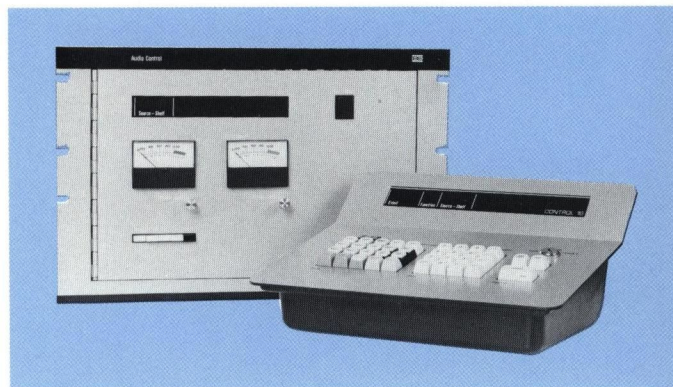
Inserting the spots manually usually results in a somewhat unreliable operation to say the least. Having a person sitting around constantly attuned to incoming programming is boring for the individual and not the most efficient for the station. The manual method usually finds this person loading 3 or 4 cart machines with the scheduled carts for the next local break. Not only is the manual method of selecting and loading carts potentially unreliable, but it is also expensive. Over the long run people tend to cost more than machines and people also tend to easily miss the local break or miss changing carts for the next break.

Automating the Satellite Delivered Format

The automated approach seems like the ideal solution. Most satellite formats are using cue tones with their programming which can be used to trigger SAT-16 to switch in your local commercial breaks smoothly and automatically.

"Direct Start" Capability

SAT-16 is pioneering automated systems that meet the unusual requirements of the satellite programmers. Its unique "direct start" capability is a first. It allows the satellite announcer to play your local station ID at his choosing and not based upon a pre-selected schedule programmed in memory. With SAT-16 the satellite announcer simply presses his button labeled local ID and SAT-16 will automatically fade down the satellite audio and play the ID cartridge regardless of what is programmed in memory. With SAT-16 the other program elements such as your weather cart can also be "directly started" giving the satellite programmer unrestricted flexibility in running his and your format. This flexibility of "direct starting" sources is exactly the way the satellite formats were intended to be run. SAT-16 provides this "direct start" capability for up to 15 sources. Furthermore, any direct started source also causes a print out of its source number on SAT-16's diagnostic printer providing you with a record of what sources have played.

Simple to Program

Programming SAT-16 is quick and simple since its memory is used only for storing your commercials. No longer need you worry about programming the station ID or any other "direct started" source in SAT-16's memory. This "direct start" feature reduces programming steps making it a lot easier and simpler to program your system.

Program Memory Only Once a Day

With 2000 events SAT-16 has more than enough memory capacity to permit you to program the memory only once a day for a full 24 hours of operation. This reduces the need for human intervention and thus increases overall reliability. These 2000 events are even enough to program the memory for several days including the week-end.
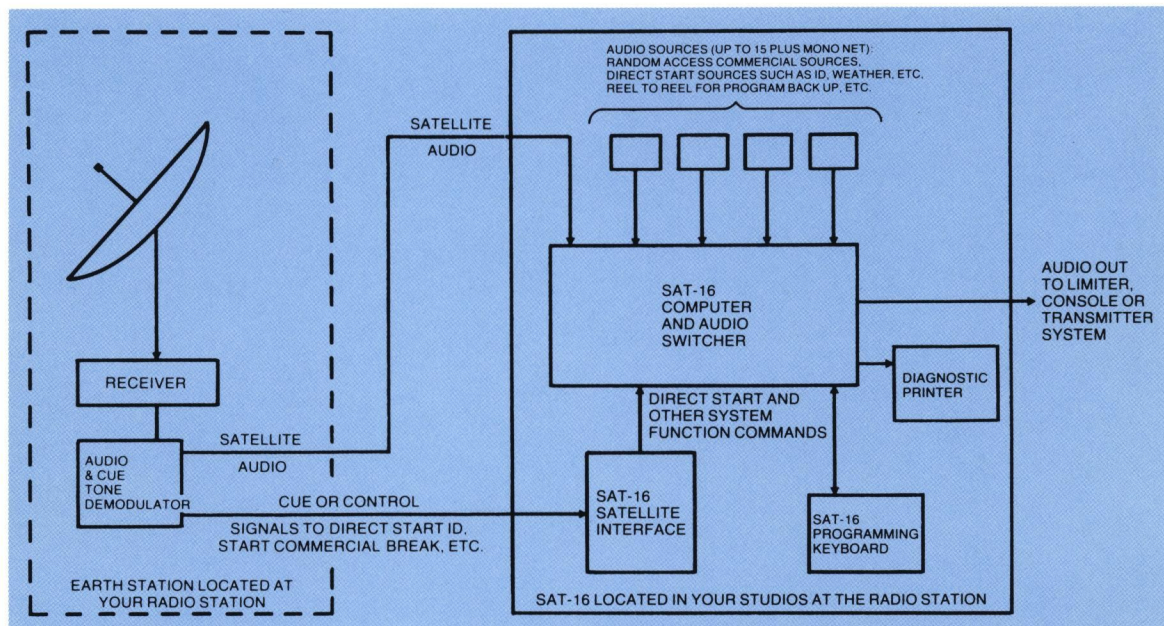
Reliable Operation

Run your satellite format without mistakes. Human mistakes are always going to happen but with SAT-16 you will greatly reduce them. The result will be a much more smooth, reliable and professional on-air sound.

Expandability

SAT-16 also includes additional software features found in the Broadcast Electronics Econo 16 program controller. Therefore, should you decide to operate live during portions of the day, SAT-16 will be most accommodating letting you get-in and get-out of the automated operation easily and quickly. If you later decide to go with full local automation, simply add additional source equipment and your SAT-16 will be ready to go. Should you decide to upgrade SAT-16 to the full sophistication of Control 16x, you can easily do it. All you need to do is add the video monitor along with the main processor and change out the software by plugging in a new PC card and that will do it. With SAT-16 the choice of where you go from here is yours.

Typical Installation of a Satellite Delivered Format

AUDIO SOURCES (UP TO 15 PLUS MONO NET):
RANDOM ACCESS COMMERCIAL SOURCES,
DIRECT START SOURCES SUCH AS ID, WEATHER, ETC.
REEL TO REEL FOR PROGRAM BACK UP, ETC.

SATELLITE AUDIO

RECEIVER

AUDIO & CUE TONE DEMODULATOR

SATELLITE AUDIO

CUE OR CONTROL
SIGNALS TO DIRECT START ID.
START COMMERCIAL BREAK, ETC.

EARTH STATION LOCATED AT
YOUR RADIO STATION

SAT-16 COMPUTER AND AUDIO SWITCHER

DIRECT START AND OTHER SYSTEM FUNCTION COMMANDS

SAT-16 SATELLITE INTERFACE

SAT-16 PROGRAMMING KEYBOARD

DIAGNOSTIC PRINTER

AUDIO OUT TO LIMITER, CONSOLE OR TRANSMITTER SYSTEM

SAT-16 LOCATED IN YOUR STUDIOS AT THE RADIO STATION

How It Works

The earth station equipment shown within the dashed lines is usually provided by or arranged for by the suppliers of your satellite format. Everything will usually be included to receive and amplify the satellite signal including demodulation of the audio and cue signals. The cue signals are sent to the SAT-16 satellite interface in the form of a contact closure or a ground going signal.

The SAT-16 as supplied by Broadcast Electronics and shown within the solid lines includes all the sources for playing your commercials plus the "direct started" sources such as the ID cart, Weather cart, etc. The SAT-16 satellite interface is the unique hardware that interfaces the cue signals from the satellite service to SAT-16. Each input of the SAT-16 satellite interface has a dip switch for selecting the function to be performed when a signal appears at its input.

When the satellite announcer presses the button to play the local station ID, one of several possible cue signals from the earth station cue tone demodulator will be sent to the SAT-16 satellite interface. That input on the SAT-16 interface will have been pre-set to start the station ID while at the same time fade down the satellite audio. The satellite audio will return to full level upon completion of the ID. Furthermore, the SAT-16 diagnostic printer will print an entry that the ID source played and also print an entry that SAT-16 returned to the satellite source following the ID. All done smoothly and automatically.

The clean and smooth audio output of SAT-16 can then be fed directly to your transmitter for broadcast.

Diagnostic Printout

(Know What is Going On)

Simply automating the satellite format to reduce expenses is not enough. As any good businessman knows, you must also have records to substantiate your claims of what played on-the-air and when. SAT-16's diagnostic printer gives you that record. It gives you a printout of the source and the time it played. It also gives you full English printout of ten diagnostic messages along with six diagnostic codes of letting you know exactly what is happening at all times.

Should you elect to do so, you can expand to full English logging simply by adding the encoding equipment.

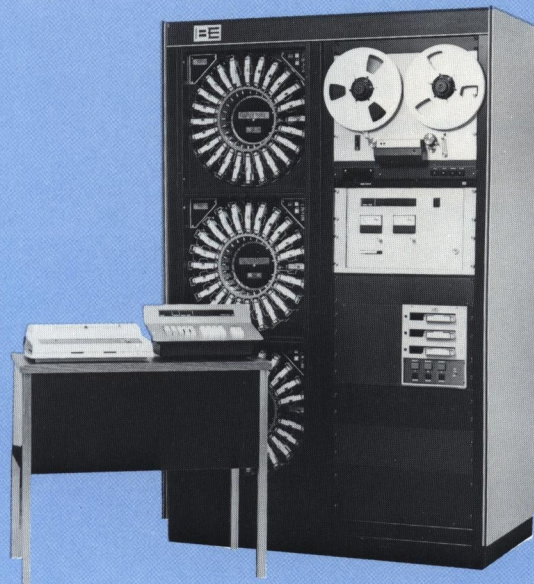| TIME	EVENT	FUNCTION	SOURCE SHELF	DIAGNOSTIC
10:53:22A	0048	PLAY	01-00	
10:56:22A	0049	PLAY	11-00	
10:56:31A	0050	PLAY	02-00	
10:59:03A	0053	PLAY	08-00	
10:59:47A	0054	PLAY	12-00	
11:00:00A	0001	PLAY	16-00	NETWORK #1
11:05:00A	0002	PLAY	11-00	
11:05:10A	0005	PLAY	01-00	
11:07:57A	0501	LINK	05-03	+++SOURCE NOT READY+++
11:07:57A	0502	LINK	06-05	
11:08:25A	0503	LINK	05-16	
11:09:25A	0007	PLAY	13-00	
11:09:35A	0008	PLAY	03-00	+++SOURCE POWER OFF+++
11:09:35A	0011	PLAY	02-00	
11:12:09A	0507	LINK	05-34	+++SOURCE CARD OUT+++
11:12:09A	0508	LINK	06-16	
11:12:27A	0014	PLAY	11-00	
11:12:38A	0015	PLAY	99-00	+++DISABLED+++
11:12:38A	0016	PLAY	03-00	+++MACHINE ERROR+++
11:12:39A	0018	PLAY	01-00	
11:12:49A	0511	LINK	06-28	
11:13:49A	0512	LINK	05-19	
11:14:20A	0513	LINK	06-13	
11:14:50A	0020	PLAY	13-00	
11:15:02A	0021	PLAY	03-00	+++SOURCE NOT READY+++
11:15:02A	0022	PLAY	99-00	+++DISABLED+++
11:15:02A	0023	PLAY	02-00	+++SOURCE NOT READY+++
11:15:02A	----	PLAY	01-00	EMERGENCY FILL
11:16:35A				POWER FAILURE
11:16:36A	0024	PLAY	13-00	
11:16:47A	0025	PLAY	03-00	
11:16:56A				XMTR SYSTEM "OFF" THE AIR
11:16:56A				XMTR SYSTEM "ON" THE AIR
11:18:32A	0029	PLAY	11-00	
FD 11:18:40A	0030	PLAY	01-00	
SS 11:19:30A	0516	LINK	05-14	
11:19:55A	0517	LINK	06-33	
SE 11:20:25A	----	PLAY	12-00	
11:20:38A	0033	PLAY	13-00	
DE 11:20:45A	0034	PLAY	03-00	
MS 11:21:33A	0036	PLAY	02-00	

BE

Typical Sat-16 Systems

Sat-16 System A

...is all you really need for full automatic operation of a satellite format. This economical single rack configuration gives you:

- ☐ 48 random select slots for commercials.
- ☐ 3 separate slots for your station's ID, local weather, etc., which can be directly started by satellite commands or for programming in the memory sequence.
- ☐ BE's exclusive satellite Interface featuring "direct start" be satellite command of up to 15 sources.
- ☐ Printer notation as to when each source started including those "directly started" by satellite command giving you a permanent record of what is going on.
- ☐ Space saving single rack configuration yet expandable to full 16 sources or full Control 16.

Sat-16 System B

...provides added flexibility for preloading 50% more commercial cartridges and a reel-to-reel for back-up programming. This low profile two rack configuration gives you:

- ☐ 72 random select slots for commercials.
- ☐ 3 separate slots for your station's ID, local weather, etc., which can be directly started by satellite commands or for programming in the memory sequence.
- ☐ Reel-to-reel playback for backup programming such as those twice a year sun fades.
- ☐ BE's exclusive satellite Interface featuring "direct start" by satellite command of up to 15 sources.
- ☐ Printer notation as to when each source started including those "directly started" by satellite command giving you a permanent record of what is going on.
- ☐ Low profile two rack configuration, yet expandable to full 16 sources or full Control 16.

In addition to the two typical SAT-16 systems shown above, a SAT-16 system can be configured to meet whatever your programming needs call for.

Technical Specifications

SAT-16's clean quality audio will complement the super audio of your satellite format.

Number of sources which feature "Direct Start" Capability: Up to 15

Program Output: +8 dBm stereo balanced 600 ohms.

Headroom: +12 dB.

Frequency Response: ±1 dB from 40 Hz to 20 Hz with reference of 1 kHz at +8 dBm output and including 25 Hz filters.

Total Harmonic Distortion: Less than .5% at ±18 dBm output from 40 Hz to 20 kHz. Typically less than .1% from 50 Hz to 20 kHz.

Signal to Noise: 70 dB or more below +8 dBm output. (Not including source noise)

Stereo Separation: 55 dB or more below +8 dBm output from 40 Hz to 20 kHz.

Cue to Program Separtion: 70 dB or greater for "0" dBm input to source.

25 Hz Filters Attenuation: 55 dB or more (typically 60 dB) at 25 Hz below reference output of 1 kHz at +9 dBm.

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