Background to The LION 90.7FM

The LION 90.7fm, WKPS is a full-fledged federally licensed radio station, and a fulltime daily operation – both unique from and far broader and deeper in scope than most student clubs in Student Affairs. The license held by PSU charges us with the mission to serve the public by broadcasting. However, as an independent extracurricular organization in Student Affairs, the station does not fall under any department that would fund or run it on a fulltime professional basis. The station is staffed and run by students and is assisted and advised by volunteer alumni from the Penn State Student Radio Alumni Interest Group (AIG). It thereby represents a long tradition at PSU since the first student radio station, WDFM, began here in 1953 as a class gift.

The LION 90.7fm has served both the student and broader PSU communities for over 10 years with a wide array of cultural, ethnic, and specialty programming as an alternative to everything in the local commercial radio market. This includes everything from independent music, local artists and personalities, engaging talk and public affairs, public service announcements, interviews with political candidates, to unique student coverage of PSU sports and of major events such as THON and Homecoming. The station has managed to carry on its activity with a dedicated all-volunteer staff, but has always dealt with the uncertainty of guaranteeing adequate funding from year to year.

The station has received 2 major allocations from UPAC in the last 4 years for equipment, labor, computers, and software. Much of that funding pays Lightner Electronics Inc., (LEI) who has been our contracted service engineer for several years, who has assembled and wired our existing studios, and knows our set-up first-hand. They are a total broadcast solution provider. These previous allocations were for vital equipment upgrades in our broadcast and production studios in the HUB. But the final, and arguably most important section of the station's broadcast infrastructure is the transmitter location. This area is in dire need of an overhaul, as explained in detail in the following section. This year our request for funding deals with the remaining studio needs; but primarily focuses on the transmitter location.

We ask the committee to once again bear in mind that all money requested by The LION for equipment and installation thereof, is effectively "programming" money. Unlike any organization asking for allocations for equipment, computers, etc., the station staff members are in NO way the sole beneficiaries of such hardware. The equipment used by the participants is not for the personal interest of those participants. All of the material used by the station serves to allow us to provide "programming" to the public by way of broadcasting. The only difference between "event programming", and our programming, is that ours is a continuous stream of a series of programming. All of the gear necessary to maintain the capability of that broadcast supports each and every one of our individual programs transmitted on air, and are all an integral part of a working system. It was in this context that the committee understood the legitimacy in funding The LION in the past few years, granting exceptions to equipment and maintenance caps.

At PSU we pride ourselves in the pursuit of excellence. In keeping with the past commitment UPAC has invested in the station with several tens of thousands of dollars, it's crucial now more than ever to bring The LION's broadcast infrastructure fully into the 21st century. We thank the University Park Allocation Committee for it's generous past support and humbly request they help continue to ensure the tradition of Student Radio at Penn State.

This request for funding deals with three areas: the broadcast studio, the production room, and the transmitter site. This first section deals with the transmitter location. Sincerely,

The LION Officers

Transmitter penthouse and cage location: atop Ford Building (former Business Administration Building).

The LION 90.7fm, WKPS, broadcasts its signal from a transmitter located on top of the old Business Administration Building, now the Ford Building at the corner of North Allen and Park Ave. There is a top level on the roof of the building, in which there is a caged-off section that houses all of the processing and transmitting gear. This equipment is not physically accessible by students or anyone other than trained professionals without authorization from Police Services or OPP. The section of the building is otherwise housing for heating, cooling, electrical and telecomm hardware accessible by PSU personnel.

Virtually all of our equipment there, including the transmitter dates back to even well before the time when WKPS shared the same studios with WPSU 91.5fm, and was originally looked after by engineers working for WPSU. It has now been 10 years since WKPS and WPSU have no longer shared common office and broadcast space, and even longer since there has been any substantial hands-on technical support or maintenance of our gear by them. Moreover, the last of WPSU's engineers that had any connection to us, such as Carl Fisher, have since finally retired, and no one there is paid nor obligated to look after any of our old equipment.

The equipment in this area is integral to our physical ability to broadcast, without which the radio station would only exist on paper. It is all quite outdated and much of it has come up on its average lifespan. The analogue signal itself travels over a copper wire phone line connection that has gone down many times before, and the transmitter itself is incapable of automatically restarting after power-outages during thunder storms, just to name a few of many problems. Remote access to power on the transmitter, and to verify power levels – all to remain FCC compliant – has proven to be inconsistent. There presently is no redundancy in connectivity, nor in remote-access capability. The details will be illustrated in the descriptions of the items for which funding is being requested.

The LION 90.7 is skating on thin ice with the gear in place, and it's only a matter of time before it sustainability goes down for good. The station's broadcast capability is not something that should be replaced only after the equipment fails. It's really something that should be guaranteed before such a crisis would occur. In order for the LION to continue broadcasting viably, effectively, and legally, such equipment has to be upgraded and maintained.

Equipment	Cost	Installation
OMNIA Processor	$8,771.00	$400.00
Broadcast Tools Audio Switcher SS4.1III	$189.00	-
Comrex Access Rack (XMTR end)	$2,650.00	$750.00
Sundance FiBox Ims-Tx (XMTR end)	$1,625.00	$750.00
CircuitWerkes Sicon-8	$1,000.00	$350.00
UPS Power Supply 2000VA SYMMETRA	$2,575.00	$500.00
Nautell V1a Transmitter	$8,950.00	$1,000.00
Local Area Network (LAN by PSU TNS)		$1,000.00

1) Processing: OMNIA6EXI-HD + FM On-Air Processor:

The broadcast signal that travels from our studio runs through a series of processing that begins within our airchain in the studio. The main processing of the audio takes place in a device that is located at our transmitter location. There a master processor modulates the sound to make it suitable for the transmitter to broadcast it out over the FM airwaves. This is a necessary phase in any transmission. Without it, certain sound properties would be indiscernable when received on a tuner, and a broadcast would be virtually unlistenable with screeching spikes and silent drops. Our existing Orban Optimod processor is about 20 years old, and has far exceeded its lifespan. It's not a question of if it will go, but how soon.

The Omnia 6EXI-HD offers a crystal clear processed signal, dynamic range and a wide array of full, rich sound unparalleled by anything on the market today. Overall, it increases perceived loudness and performs a myriad of functions our old 1990-era Orban does not. It will also allow remote control access of a variety of features and settings, such as to adjust the bass when more desirable for a given type of show, or daypart in our programming, or revert from mono to stereo or vice versa around talk programming, just to name a few of many examples. It allows this to be done manually or by preprogrammed scheduling – all by remote.

It will digitally control overmodulating, and allows for digital input of our signal, whereas our Orban does not. Since our long term goal is to establish an entirely digital signal, this device is not only most instrumental but crucial since it has built-in tcp/ip and digital audio. It also has "diversity delay" which basically eliminates any analogue connection to the transmitter. This means if the station some day goes HiDef the signal will be fully digital from studio to transmitter, thereby enabling us to be "HD Ready" up to the point of the transmitter. It also can accept two separate feeds: analog and digital, so if the digital goes down entirely the analog does not (and you can fall back to the analog signal if the digital isn't firing).

Since The LION only has a 100 watt transmitter, this will allow the station to remain competitive in the local market of radio stations by vastly improving its sound quality and listenability, especially by custom tailoring the sound to best compliment each of our unique programming styles on our multiformated station. Installation will require lots of wiring, tweaking of settings, etc.
More info:
http://www.omniaaudio.com/o6ex/default.htm

Bid # 1: List Price: $13,586.00
http://www.bswusa.com/proditem.asp?item=OMNIA6EXIHDFM

Bid # 2: Pro Audio Price: $12,228.00
http://www.proaudio.com/product_info.php?cPath=30_444&products_id=2937

Bid # 3: **LEI's price: $8,771.00, + installation: $400.00**

Studio to Transmitter Connection and Hardware:

Currently our air signal is sent to the transmitter by way of a simple copper wire "twisted pair". This is pre-1940's technology, it's limited in its fidelity, and is not the most reliable. We've had instances where PSU Telecommunications and Networking Services (TNS) performing other maintenance had inadvertently knocked us off air or we ended up broadcasting with indecipherable static. For this reason it's crucial we employ a modern reliable dedicated point-to-point fiber connection, along with a Gigabit Ethernet Network connection as a back-up. This solution would serve as a major necessary upgrade for the station to have a dedicated digital connection from our studio to our transmitter. It cannot be stressed enough that when dealing with technical systems like this, employing redundancy is not only optimally desired, but is an essential condition. We need to implement a digital carrier solution for our signal feeding our transmitter, in which the primary mode of connection should be dedicated fiber, with an exclusive Gigabit Ethernet network connection as a back-up, and we in which we retain the copper analogue as a final last resort fallback. Right now we have no fallback, just the least reliable lowest tier. The hardware necessary for such connections that our engineers would need to implement on both the studio end and transmitter end of our connection are illustrated below.

Our engineer stated we need an uninterrupted, dedicated connection with no other traffic to carry our signal from studio to transmitter. While we are working with PSU officials to establish a point-to-point fiber connection, the next tier of connectivity directly available in the meantime from TNS is a dedicated Local Area Network Connection in the form of 100 MBPS Ethernet or Gigabit Ethernet. This would go through Penn State's Core Backbone, but would be separate from the HUB's network. We would need one dedicated connection terminating in our studio, and another at the transmitter. The 1GBPS and the 100MBPS are both the same price and in 1 year TNS will no longer support 100 MBPS, hence we request the 1GBPS Ethernet to ensure plenty of headroom in the bandwidth, even for a future digital audio signal.

There is a vitally important second reason for why such a connection would have to be installed at the transmitter location, in addition to an eventual point-to-point fiber connection. With the LAN provided by TNS, we will be afforded several IP addresses with each connection. The IP addresses will be necessary at the transmitter location so that the equipment we seek to install can all be remotely accessible and regulated. This is crucial, especially given the physical inaccessibility, or prohibited and otherwise impractical accessibility of the transmitter location. A full description for why remote access is not just a technical desire, but a legal requirement, follows below in our request for the "**CircuitWerkes Sicon-8**".

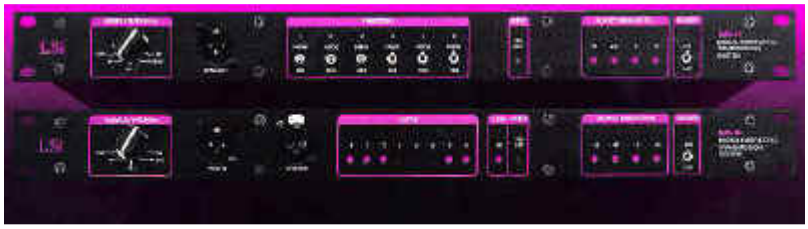
http://tns.its.psu.edu/services/IB/backbone.html
http://tns.its.psu.edu/admin/TNSPricing.html#ibs

2) Integrated Backbone/Local Area Network/Gigabit Ethernet Connection: - provided by PSU TNS: $1,000.00 (transmitter location)

The audio broadcast devices needed for our signal connectivity:

For Primary Fiber connection:

3) Sundance Systems digital FiBox IMS-Tx. (Most flexible fibox ever).
http://www.lightwavesys.com/products/audio/IMS-Tx_IMS-Rx.PDF
http://www.lightwavesys.com/products/audio/ims-tx.htm

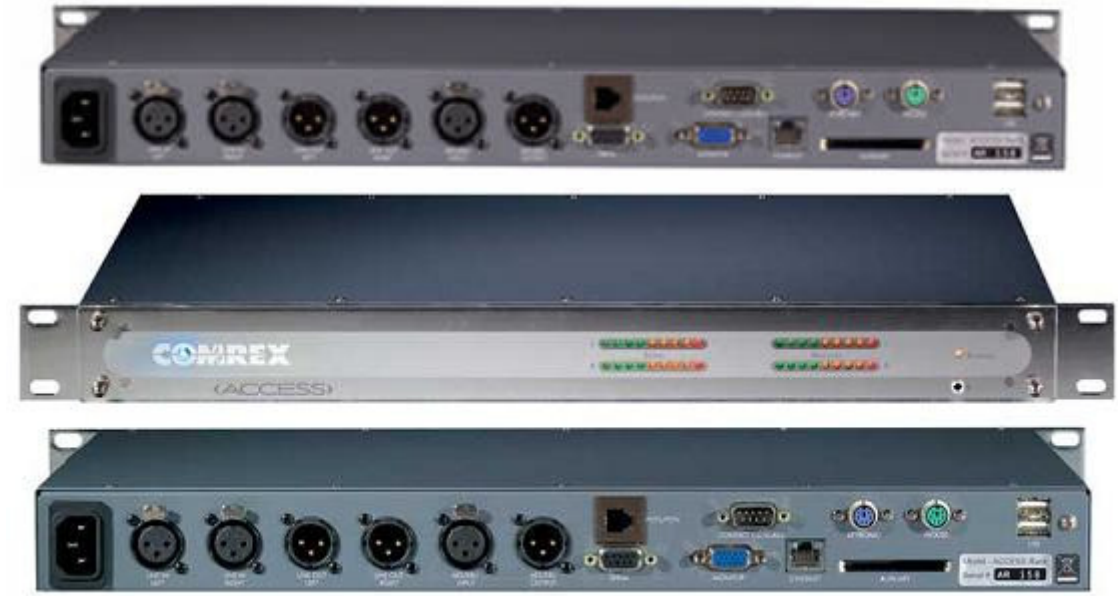


This is a pair of devices, one fitted in the transmitter cage, the other rack-mounted in our studio.
No price quotes available online.
LEI's quoted price: $3,250.00 for pair, + installation: $750.00

For Integrated Gigabit Ethernet connection:
4) "Comrex Access" rack mount stereo codec:
http://www.comrex.com/products/access.htm

Our engineer recommends a dedicated VLAN connection via network switches from the studio to the transmitter. And the data running through on each designated port of every switch for our connection can be kept exclusive so as to keep all other traffic off of our port connections. It's full linear audio over IP and converts into ethernet standard, needing only a minimum of 2 megabits p/s. This audio connection too requires a pair of identical rack-mounted devices, one at the transmitter location, and the other in our studio:

Bid #1: List Price: $3000.00/unit
http://www.proaudio.com/product_info.php?products_id=3829
Bid #2: Broadcast Supply World: $3000.00/unit
http://www.bswusa.com/proditem.asp?item=ACCESSRACK



Bid #3: **LEI's price: $2,650.00/unit, and we need 2: one on each end = $5,300.00 + installation: $750.00**

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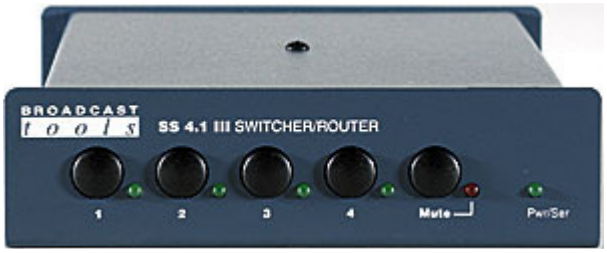
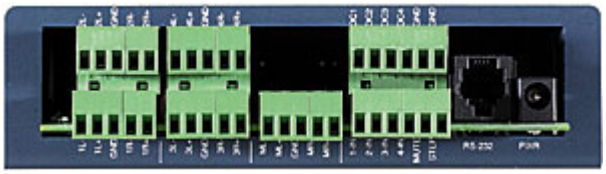
5) Broadcast Tools 4 Input Passive Audio Switcher SS4.1III:

The Omnia processor has the ability to revert to a different, or second source of audio feeding it, if it detects silence after a certain point. The Omnia by itself can switch between an analogue and digital connection (i.e. the signal reverts from a single digital connection such as fiber OR VLAN down to an analogue connection: copper wire as our fallback). HOWEVER, to have a two-tiered digital connection, plus the analogue, we need additional switching gear. This is necessary to be able to switch between the two digital connections (i.e. the signal switches from fiber to LAN, before falling back to analogue if need be). Installation of this is not a major task, and would be included for no extra charge in the $400 for the Omnia install.

Bid # 1: List Price: $239.00
http://www.broadcasttools.com/view_product.php?pid=36
http://broadcasttools.com.isomedia.net/pdf/listprice.pdf

Bid # 2: Pro Audio Price: $199.00
http://www.bswusa.com/proditem.asp?item=SS4.1III





Bid # 3: **LEI's price: $189.00**

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6) METERING/REMOTE UNIT: CircuitWerkes Sicon-8 (LEI recommended)

In order to remain FCC compliant, there has to be a remote access mechanism in place with which a studio board operator can remotely access the transmitter. The two main minimum functions required are the ability to check meter readings and to power a transmitter on and off. Should there be a live FCC inspection, a board operator would need to be able to power down the transmitter at the request of an inspector within 15 minutes of the request. We must also take several power readings per day which must be logged. This is done through a remote access unit that operates over a phone line that we have terminating in the transmitter cage location, and allows us presently to dial into the transmitter. The existing dial-up device is incredibly outmoded, outdated and has become quite unreliable. Moreover, this past summer TNS, unaware of who owned or used that phone line, converted all lines in that building to VOIP. This rendered our ability to dial into the transmitter inoperable, thereby leaving us non-compliant with the FCC.

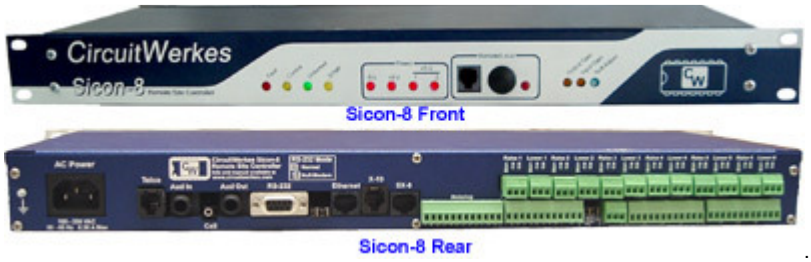
Fortunately we corrected the problem with TNS after discovering we could not dial in. Incidents like these further demonstrate the need for redundancy and greater accessibility in the form of both data connectivity in addition to phone connectivity. In upgrading the rack-mounted gear in the transmitter cage, we also need to ensure the ability to derive full use and accessibility of all the equipment we seek to install. Therefore we this is another reason we need to establish a LAN Ethernet data connection mentioned above to grant remote-in capability to both adjust and monitor everything from the processing to the transmitter output, to the power supply mentioned below.

The device that will allow for the interfacing with all of the hardware via this LAN connection is the CircuitWerkes Sicon-8. It has high quality "full" remote voice capability, and it will allow us to interface via both data connectivity and by dialing in over the phone device, and our engineer recommends it to allow for that redundancy. This device will allow remote access to not only transmitter over the internet and by phone, but also the Omnia processor so as perform everything described above.

For more info:
http://www.broadcastboxes.com/products/sicon8_lit.html

http://www.broadcastboxes.com/pdf/CircuitWerkes_Sicon-8_Detailed_DataSheet.pdf

Paraphrased from the website:
The Sicon-8 is a full-featured dial-up transmitter site remote controller with recordable voice response and computer access capability. Based on voice recording technology, the Sicon-8 can speak in your staff's language because you record your own messages. The Sicon-8 was designed to be a complete solution for facilities with basic to moderate control requirements.



Sicon-8 Front

Sicon-8 Rear

Bid # 1: List price: $1,299.00
Bid # 2: Pro Audio Price: $1,219.95
http://www.proaudio.com/product_info.php?manufacturers_id=226&products_id=4191

Bid # 3: **LEI's price: $1,000. + install: $350**

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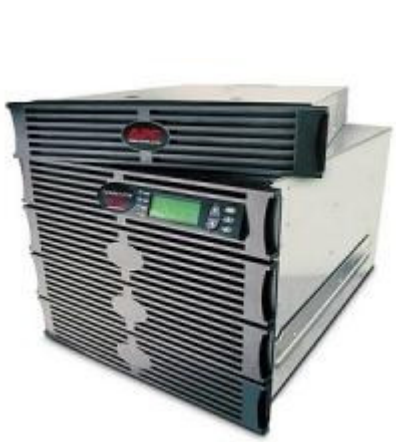
7) Rack-mounted power supply (UPS):

"2000VA SYMMETRA" made by American Power Conversion (APC), model: syh2k6rmt-p1

All of the equipment mentioned in this section needs to be protected with its own backed up power supply. The magnitude and caliber the all the gear requires a 1400 watt system and one that allows for different tiering of power levels for each of the individual devices. It also has a network management port for remote control so that the power going to each device can be regulated for most efficient use. This is all not just essential to safeguard the investment of all the equipment, but it is also necessary in the event of lightning and electrical storms, and/or whenever the PSU Office of Physical Plant runs scheduled power outage tests in the building. With the current arrangement, whenever a thunderstorm in the summer knocks the transmitter off air, it cannot automatically turn back on with the existing consumer grade power supply we have installed. This means that if there is no live DJ in the studio to dial in and turn the transmitter back on, we remain off air until a student officer or volunteer alumnus realizes it's off. The system here would allow it to automatically power back on in the event of outages, surges, storms – you name it. This unit was strongly recommended by our broadcast engineer LEI who installs all of the aforementioned broadcast equipment and stakes his reputation on installing and setting up reliable systems for commercial radio stations so they stay on the air. Because this is not a simple plug & play device, it requires much wiring and setting of levels as a power management system. It must be configured with all of the equipment as they are being installed. Prices vary on websites, the amount may be different depending when you log on.



Bid # 1: List: $3,125.00. Nu Gadgets price: $2,854.06
http://www.nugadgets.com/products/ProductDetails/SYH2K6RMT_P1.Symmetra_RM_2kVA_Scalable_to_6kVA_with_Step_Down_Transformer.1265808.1.html

Bid # 2: List: $3,075.00. Compsource price: $2,754.00
http://www.compsource.com/ttechnote.asp?part_no=SYH2K6RMTP1&vid=37&src=F

Bid # 3: MSRP: $3,052.99. PC Superstore price: $2,593.47 (Free Shipping)
http://www.pcsuperstore.com/products/M22277-APC-SYH2K6RMT-P1.html/froogle/

LEI install: $500.00

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8) Transmitter Amplifier/Exciter: Nautel brand; model: v1a, 1 kilowatt transmitter.

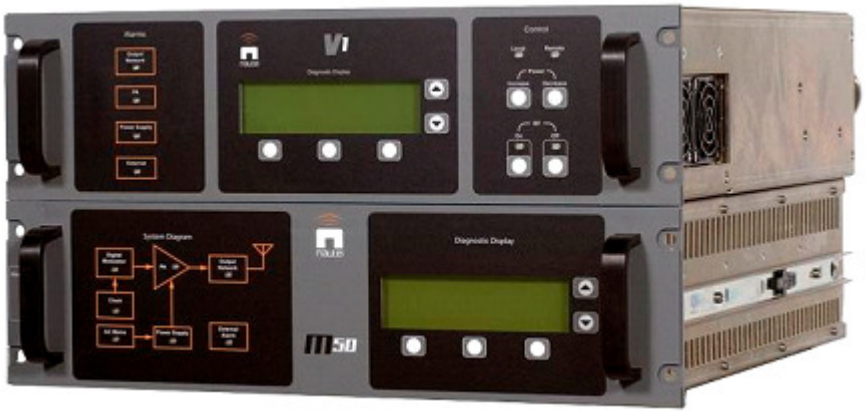
This is the final piece of this section. Our 200 watt transmitter is over 20 years old, and has been and still is running at full power. Replacing it now would be a smart move. Any transmitter consists of two parts: the "exciter", which takes audio coming out of the processor and converts it to your frequency, and the amplifier which boosts the signal to your wattage output. Separately the amplifier and exciter could exceed $10,000.

Nautel offers a package deal with this model with the amp and exciter built into one. Moreover, it also allows for the upgradability to a digital exciter in the future allowing you to keep the rest of the transmitter. Having a 1000-watt capacity, it would never come near its capacity running at less than half that, so leaving plenty of headroom increases the life of the unit. For our purposes this unit would probably last almost forever, certainly more than two decades. Again, we are lucky that the existing transmitter, after countless summers with thunderstorms, surges, power outages, etc., has held up this far. Moreover, this new device would allow greater remote access and control.

Since this is not a device one just logs on and buys online, you cannot buy it from third parties. Therefore, there are no separate bids, and it is something that must be installed by certified dealers, in our case LEI.

http://www.nautel.com/Analog.aspx
http://www.nautel.com/v1.aspx

LEI's price: $8,950.00 LEI install: $1,000.00



Studio Equipment and Service Labor:

Emergency Alert System:

1) EAS Software: EASAnywhere

To remain compliant with the FCC, we must continue to have a viably functional Emergency Alert System device in our airchain that receives and sends EAS tests (*"This is a test of the Emergency Alert System.…This is only a test"*); as well as rebroadcast actual alerts. This software will allow our engineer for example, to remotely monitor and control our Sage Endec Emergency Alert System device, update firmware, perform general maintenance, and thereby keep us FCC compliant by ensuring the device is running properly, executing the scheduled tests and alerts. This capability is vital considering that currently it is only ever inspected when our engineers arrive to work on other large projects, which is only once or twice a year. There is one manufacturer/developer from whom you can only purchase the software directly, hence no separate bids are available.

From the Site: http://www.knlr.com/EASAnywhere.htm
EASAnywhere *was designed to specifically control the Sage Endec. EASAnywhere emulates the front control panel of the Sage Endec so that you may remotely view the Sage Endec display and remotely access its menu. Connection to the Sage Endec may be through a simple serial port connection consisting of three wires: send, receive and ground. EasAnywhere can be used by a telephone connection using a modem connected to the computer and another modem connected to the Sage Endec.* ***Note: Since the Sage Endec is continuously transmitting data, a relay must be inserted between the modem and the Sage Endec so that the modem will answer and establish a connection with the remote computer before transmitting data from the Sage Endec****.*

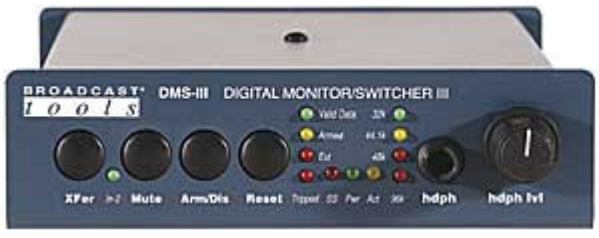
$100.00 (developer's price)

2) EAS Hardware: Broadcast Tools DMS-III

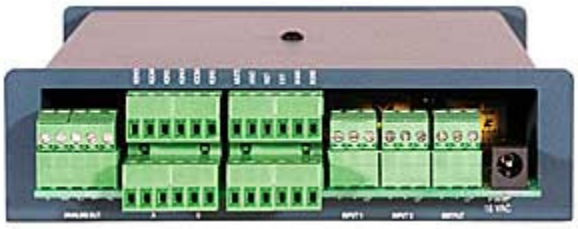
We need **Broadcast Tools DMS-III** (Digital Monitor & Switcher III) to work with our SAGE Endec Emergency Alert System device. As mentioned above, to remain FCC compliance, we must continue to have a viably functional Emergency Alert System device in our airchain. However it is an analogue system, and we are in the necessary process of completely converting to an all digital airchain. So in order for our EAS device to remain compatibly functional within our airchain, we must install this switcher as it will convert any alert feeds back and forth from analogue to digital. This device can also serve as the relay mentioned for the EASAnywhere software above.

Bid # 1: List price from manufacturer: $499.00
http://www.broadcasttools.com/view_product.php?pid=106

Bid # 2: Pro Audio: $439.99
http://www.proaudio.com/product_info.php?manufacturers_id=80&products_id=3733



Front



Back

Bid # 3: **LEI: $384.00, To install: $50.00**

Logger/Skimmer Computer and Contact Closure Box

3) Logger/Skimmer Computer (rack-mounted)

The LION 90.7 uses a dedicated computer to continuously record our on-air broadcast. This serves many uses: future audio production, quality control, etc. The most important purpose is to serve as a physical and legal record of what aired in cases of possible contention, such as community complaints, inquiries of inappropriate material, FCC inspections, etc. Though we've never had any complaints leveled against us, there were instances when entities requested copies of what was aired, and the proof of a recording was necessary to dispel false accusations or clarify segments someone thought they heard but misunderstood. This requires a reliable, industrial caliber, commercial grade computer that must remain running at all times, and a solid contact closure box that regulates the audio feeding the device (explained below).

However, the old Pentium II caliber machine we are currently using is drastically out of date and needs to be constantly rebooted almost on a daily basis, leaving us with an incomplete archive of recordings. Not only does it need to be replaced, but the specialized program that performs the recording made by OMT's http://www.omt.net/, iMediaTouch http://www.imediatouch.com/ called "Logger/Skimmer" needs to be updated to newer versions that require greater hardware specs in terms of processing, ram, drive space (for archiving), etc. We need to upgrade the hardware first before we can also upgrade to newer, better, more reliable versions of the software.

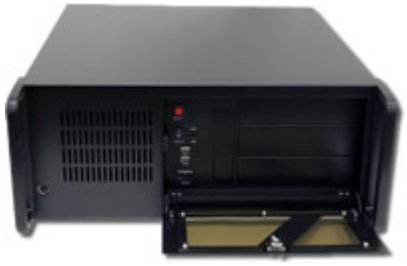
Why not just use any cheap software?
The program is a "module", or one of several in a suite of programs designed by OMT's iMediaTouch. It's professionally licensed software that allows one to record, organize and retrievably archive a continuous ongoing stream of audio (Logger) into regulated and dated file increments, at whatever bit rate we choose. It also has a second channel that can record specific segments only when microphones are turned on, thereby capturing on-air discussion and isolating these segments into individual files for easily retrievable future quality control and air-check. Additional hardware (contact closure box) is needed for that to work, explained below.

This is not a consumer grade desktop office PC, but a key piece of pro-grade broadcast hardware. We need a new, reliable, rack-mountable machine, with an industrial motherboard, redundant power supply, ideal for mission critical applications, to replace the existing rack-mounted unit we have in our studio airchain tower rack. We need something that will serve us well into the future and not need to be replaced in less than 4 years. Some possible variations include:

Bid # 1: SuperLogics SL-4U-SBC-DC-945G-HA: $1,595.00
http://www.superlogics.com/industrial-computers/rack-mount-pc-computer/SL-4U-SBC-DC-945G-HA/267-2281.htm#

Bid # 2: SuperLogics SL-4U-SBC-P4-945G-HA: $1,545.00
http://www.superlogics.com/industrial-computers/rack-mount-pc-computer/SL-4U-SBC-P4-945G-HA/269-2282.htm

Bid # 3: SuperLogics SL-R4U-3.0-1024-XP: $1,545.00
http://www.superlogics.com/industrial-computers/rack-mount-pc-computer/sl-r4u-30-1024-xp/269-1381.htm



4) Broadcast Tools Contact Closure Box, Model #: GPI-32

In our studio furniture our engineers have installed a relay box that opens a contact closure that interfaces with the existing Logger/Skimmer machine via the computer's parallel port. However, this old method has proven to be extremely unreliable and yields inconsistent performance in recording and archiving. In order to maintain 100% reliability, our engineer recommends we implement a serial port solution. The Broadcast Tools Contact Closure Box GPI-32 will guarantee uninterrupted recording with our existing computer or with any new machine. This is essential for all of our shows for quality control and air checks.

Bid # 1: List price from manufacturer: $339.00
http://www.broadcasttools.com/view_product.php?pid=126

Bid # 2: Broadcast Supply World: $297.14
http://www.bswusa.com/proditem.asp?item=GPI-32

Bid # 3: **LEI: $275.00, To install: $150.00**

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5) Integrated Backbone/Local Area Network/Gigabit Ethernet Connection:

See full explanation above in "**Studio to Transmitter Connection and Hardware**" of transmitter section. In order to make the signal connection we need TNS to provide us a LAN at both locations, in this case where the signal is sent from – the studio.

Provided by PSU TNS: $1,000.00 (studio location)

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6) Software Upgrade and Support: OMT Service Support Pack

OMT's http://www.omt.net/, iMediaTouch http://www.imediatouch.com/ is the manufacturer and provider of our audio-centric software programs. We need to purchase the support pack from OMT to be eligible to download the latest updates and upgrades for Version 2 of their package suite of programs that we are using. This is key so that we can eliminate the bugs and get all the latest fixes and patches for the software. This will also entitle us for the next 12 months to upgrade to the final versions and builds of their current version. Their support also includes technical service support over the phone.

According to their support page: http://www.imediatouch.com/support_plan_options.html
In addition to the free software upgrades for point releases within a version, we could be eligible for up to a 50% software credit towards any new version release. We contacted their Sales and Service Support to get price quotes. Their support rates are:

Pay As You Go - $150.00 per support call

FTP Access for version upgrades - $495.00

FTP Access for version upgrades and 3 support calls during business hours - $595.00

One year FTP Access and Unlimited Business hour support - $1,295.00

We are requesting $595.00 to be able to upgrade our software until its end-of-life and get basic tech support. We don't anticipate needing to make more than 3 support calls.

OMT Service Support Pack: Essential Plus: $595.00

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7) Dual Deck CD player/recorder: DN-C550R

http://www.d-mpro.com/users/getdownload.asp?DownloadID=59
DJs and on-air staff have no way of digitally recording individual copies of their shows. This device allows for that with several options, yielding the greatest utility. The DN-C550R features both a CD Playback drive and a CD-R/RW play and record drive, housed in a single unit, to provide a variety of recording and playback options either independently or in combination. This can:
-play a CD
-record audio feed from console and burn to CD, and simultaneously cue/play CD in the player deck without interference.
-copy CDs, (though not suited for rapid mass production of burning CDs.)

This would be used by all shows, especially music shows; but also interviews as well, in which a CD copy can be furnished on demand to an interviewee or whomever if necessary, immediately at the end of the program. Installation will require rearranging channels on our existing audio console, as well as custom wiring to allow for all the functionality via remote-fire from our audio console.

Bid # 1: B&H: $699.00
http://www.bhphotovideo.com/c/product/229707-REG/Denon_DN_C550R_DN_C550R_Professional_CD_Recorder.html

Bid # 2: Interstore: $685.02
http://interstore.com/product/118-1740/DN-C550R/Denon_DN-C550R_Professional_CD_CD-R_RW_Recorder_Combo-Deck.html

Bid # 3: **LEI: $605.00, To install: $200.00**

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8) Cough-Mute Module: Wheatstone GP4s

This is a simple module with on/off and cough/mute buttons custom hand-made by Wheatstone. We have three mounted in place, and we need one more for our fourth guest microphone. Each one controls a corresponding guest microphone and panelists sitting around our studio announce table can use it to mute their respective mic when needing to cough, sneeze, etc. This sounds terribly unprofessional over the air, and the ability to temporarily mute one's mic when they know they need to, greatly helps polish up broadcasts. Nothing sounds worse than having someone's words overpowered by another's cough or sneeze, without the board operator being able to know ahead of time. This device is not on Wheatstone's website, and the three we have thus far were made for us at the behest of our engineer, and we simply need one more. Moreover, we need to have all four finally wired up to begin working. These devices would be most often used by our talk shows that feature regular panelists, as well as all shows featuring guests.

LEI: $191.00 (for fourth module), install/wire up all four: $350.00

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9) Rack Mounted Filter and Rack Mounted Fan.

Our studio audio console's main power supply is rack-mounted with other gear in our studio furniture. In order to assure long life and sustainability, it needs to have a fan and filtration unit within the same section of the furniture. This needs to be custom designed and installed by our engineers who wired and assembled

our studio set-up. This is not entirely a factory-made system, and therefore there is no single website provider nor any competitive bids. Our engineers, who designed our studio and with whom we have a long running relationship, are best suited to this work, and can give us the best rate in light of all the other projects we contract them for.

LEI: $150.00, includes installation/wiring and hardware.

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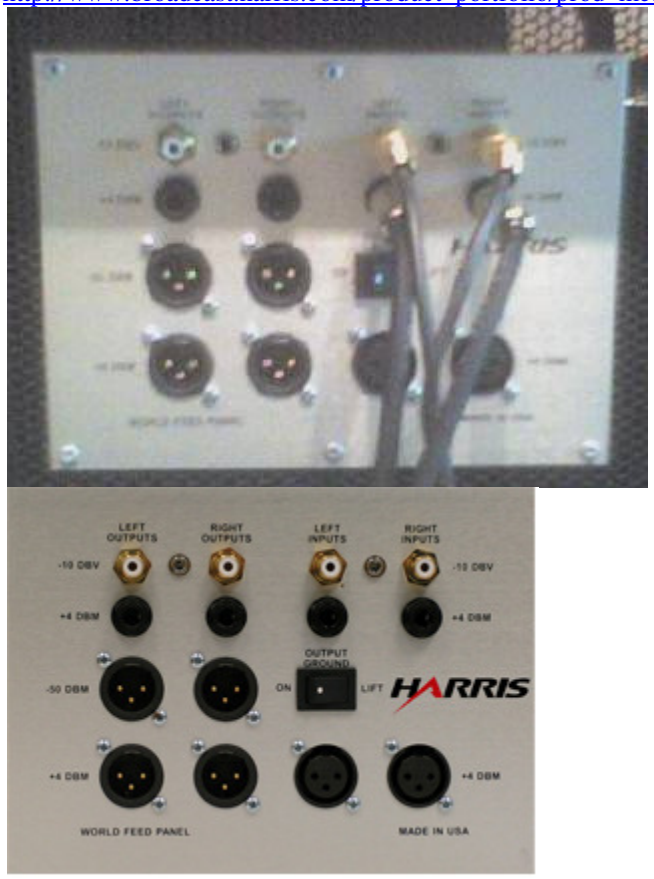
10) Harris World Feed Panel: # HRS-WFP-PS

This device needs to be installed into our studio furniture. Its many inputs will allow for running in external devices and sources of audio into our audio console for on-air broadcast and/or in-house recording. An example would be hooking up musical instruments or similar equipment for live in-studio appearances. Its many outputs will allow us to split our feed and send out and record our air feed and/or audio from our audition channels onto any other external device(s). This is most often relevant during special music shows and in-studio performances and live mix shows.
http://www.broadcast.harris.com/product_portfolio/product_details.asp?sku=WWWworldfeed
http://www.broadcast.harris.com/product_portfolio/prod_media/world%20feed%20panel.pdf



LEI will have to get metal shop work done to custom cut out a fitting metal rack mount plate.
This is a special product made by Harris and is not available new through third party suppliers or retailers. It must be purchased directly from the manufacturer. LEI can purchase it for us at their discounted price and install it for us.

LEI: $230.00 (from Harris), + $50.00 for rack-mountability, install: $150.00

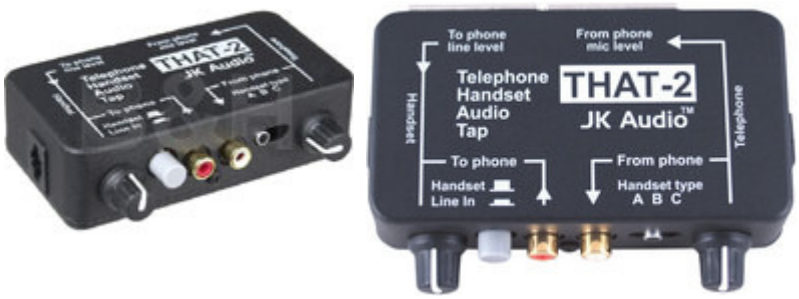
Audio Console additional phone caller broadcast capability:

Currently we have the ability to take callers from our studio line and put them on the air. The phone call is assigned to a channel on the audio console, which turns on and carries the signal so as to broadcast it over the air. The "mix-minus" feature on the console is key, because that allows the caller to be able to hear on-air personnel speaking into microphones. This is what allows a two-way conversation to be aired.

Since our new VOIP phones have been implemented, we could patch our additional lines through our board using additional gear. But even if we could, the callers on these lines would not be able to hear other callers or what is being said through our studio mics. So to increase our capability of taking more callers over the air we need our engineer to enable the mix-minus feature on an additional channel on our audio console by wiring it up so as to allow the channel to feed sound to the callers who are assigned to that respective channel.

This requires a Telephone Handset Audio Tap (THAT-2) device, and labor to do the mix-minus wiring. This device will allow for the ad-hoc addition of our VOIP handset and its lines into the mix of our channels on our audio console, and thereby add more callers to our conventional capability to air a phone call.

11) JK Audio Telephone Handset Audio Tap (THAT-2):



Bid # 1: JK Audio List price: $225.00
http://www.jkaudio.com/that-2.htm

Bid # 2: Sweetwater price: $209.97
http://www.sweetwater.com/store/detail/That2/

Bid # 3: B&H price: **$199.95**
http://www.bhphotovideo.com/c/product/264974-REG/JK_Audio_THAT2_THAT_2_Telephone_Interface.html

12) LEI: wire up mix-minus for studio console: $75.00

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13) General Maintenance and Miscellaneous Wiring:

With the totality of our set-up, service work is not limited to installation of equipment and implementation of systems. All of our equipment requires, over the course of time, preventative maintenance, routine diagnostics, recalibration, and trouble-shooting for a variety of issues. This includes but is not limited to:
- Professionally cleaning dirt and debris from out of the channels of our audio console,
- replacing burned out bulbs on the control switches so users know what is "on" vs. "off",
- cleaning laser lenses of CD decks,
- readjusting and recalibrating microphone processor settings,
- checking our in-studio battery back-ups,

- securing any loosened wiring on the console punch-block,
- replace any bad wiring,
- lubricating microphone arms and springs,
- and much more.

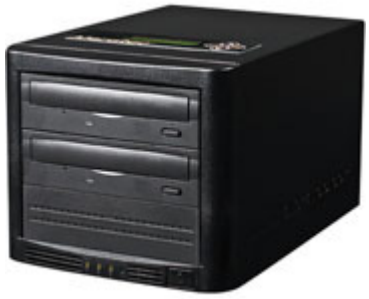
Currently we experience random but recurrent static-like distortion on our main microphone, and dropped phone calls on our on-air telephone handset unit. Cleaning and trouble-shooting is needed to pinpoint exact problems so as to determine ultimately if any equipment needs to be repaired or replaced. All of this is par for the course with normal everyday use and wear and tear. The figure below is based on an estimate of 10 hours of a certified LEI technician billed at $50/hour. This type of maintenance ideally ought to be several times a year in smaller increments, but we are requesting funds for a thorough general maintenance to catch up before any problems further compound.

LEI: General Maintenance and Diagnostics: $500.00

CD/DVD Disc Copier / Duplicator

Stand-alone disc copier: **Aleratec 1:1 DVD/CD Copy Cruiser Pro**

http://www.staples.com/webapp/wcs/stores/servlet/StaplesProductDisplay?&langI%20d=-1&storeId=10001&catalogId=10051&productId=183645&cmArea=SEARCH

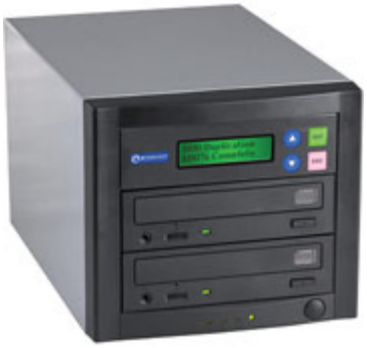


- This DVD/CD duplicator can copy as many DVDs and CDs as you need and add silkscreen quality labels with LightScribe Disc Labeling technology.
- DVD copies at up to 20x or CD copies at up to 48x
- Burn custom labels on each disc with LightScribe Disc Labeling technology
- High-speed stand alone DVD/CD duplicator and external USB 2.0 DVD-Recorder
- Back-lit LCD display shows copy status, % complete and other functions
- Aleratec Disc Publishing suite included
- Supports most industry standard DVD/CD formats (DVD-RAM, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, CD-R, and CD-RW)

14) Aleratec 1:1 DVD/CD Copy Cruiser Pro: $329.99

We need to have a disc copier, ideally one in our studio and one in either our production room or business office where our incoming parcel mail of services music is sent to us. This would allow staff to make clone copies of various discs for review without interfering or interrupting on-air broadcasts or production computer use. We've speced out two models here, and would like to set one up in the studio and one in upstairs offices. If for example someone records a program onto CD with the Denon dual deck mentioned above, copies can be furnishes to interviewees away from the Denon which be in use by a subsequent show. Please consider funding these two devices. The Aleratec has a label maker, the Microboards does not.

Stand-alone disc copier: **Microboards Technology Quic-Disc 1:1 DVD/ CD Duplicator**
http://www.staples.com/webapp/wcs/stores/servlet/StaplesProductDisplay?&langId=-1&storeId=10001&catalogId=10051&productId=184246&cmArea=SEARCH



- The Quic Disc is a low-cost, high-performance oriented one to one DVD/CD Recordable duplication system.
- DVD copies at up to 18x or CD copies at up to 48x
- Back-lit two-line LCD interface shows status of the duplication process and allows access to advanced menu features
- Stand-alone duplicator
- Supported media: DVD-R/RW, DVD+R/W, Dual Layer (DL), CD-R/RW
- Supported formats: VD-ROM, DVD Video, CD-ROM Mode 1 & 2 CD-DA, CD-ROM/XA Video CD, Game CD Mix Mode, Multisession, HFS CD Bridge, Photo CD, CD Extra

15) Microboards Technology Quic-Disc 1:1 DVD/ CD Duplicator: $299.99

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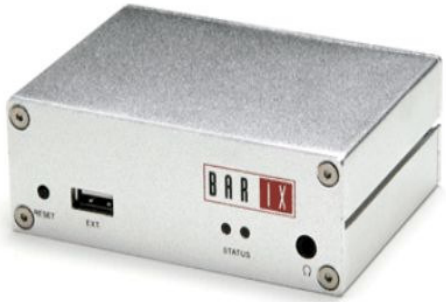
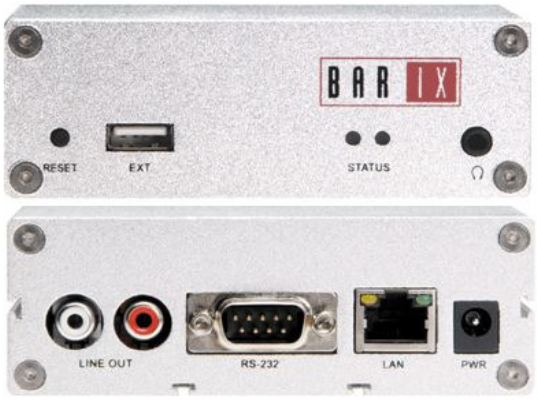
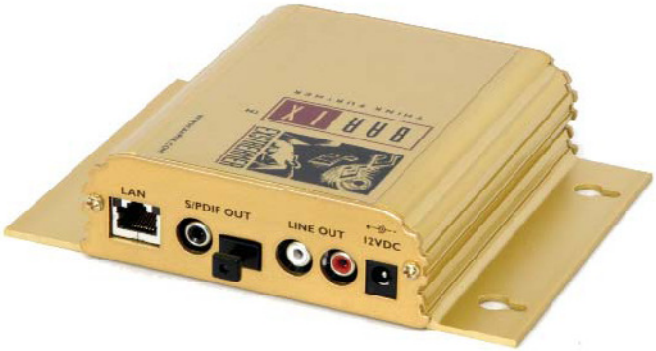
14) Barix Audio Streamer w/ Digital In/Out IP Streaming Device:
http://www.barix.com/content/view/11/33/

From this website:
http://www.avitech.co.za/detail.asp?parm=131
"An intelligent network based audio player, the new Exstreamer 100 communicates over a standard network connection and plays audio content from PC's, media servers, internet radio stations or other Barix products, like the Instreamer. The Exstreamer is easily controlled using a standard web browser, but its power and capabilities are really seen when integrating the unit into a customized solution. "





The digital "Gold" version:



A pair of these devices, the "Exstreamer" and the "Instreamer" allows you to stream audio via the internet, point to point. This is ideal for occasional temporary live remote broadcasts where no phone lines are available but Ethernet ports are. This is a network audio player for digital audio streaming. ("Digital" here does not mean hi fidelity, just that the signal is not analogue). This device will allow us to increase our presence promotionally at more locations and events. This device is also usable for connecting our audio feed from studio to our production room. No price quotes available.

LEI: $1,500.00 for pair. Gold model.

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15) OC White Microphone Arm Springs:
http://www.bhphotovideo.com/c/product/287537-REG/O_C_White_12402G_Heavy_Duty_Spring.html
These heavy duty mic springs are much quieter than the regular metal ones we have now, and thereby cut down on annoying squeaking that goes out over the air when panelists and guests adjust their mic arms, and would require less lubrication over time. They are $25.95 a pair. We would need 28 springs (4 per mic arm, for 7 arms).
Total: $363.30

Production Room Equipment and Service Labor:

1) Harris World Feed Panel: # HRS-WFP-PS

This is the same as in the main studio. It would be used for the same applications as well, but is especially useful for a production room since any device can be interfaced through our audio console and thereby any source material of audio can be recorded or transferred for mixing and production purposes. In other words any device can be externally connected to our board, and feed audio into our board, regardless of whatever form of media the audio is on. So if someone has audio or footage on a mini DV video tape for example, that tape can be played through its player device which could be connected to our board. Likewise if one wanted to film an interview in there, our mics can be used to record the audio and the feed could be sent back out via the World Panel into the camera.

LEI: $230.00 (from Harris), + $50 for rack-mountability, install: $150.00

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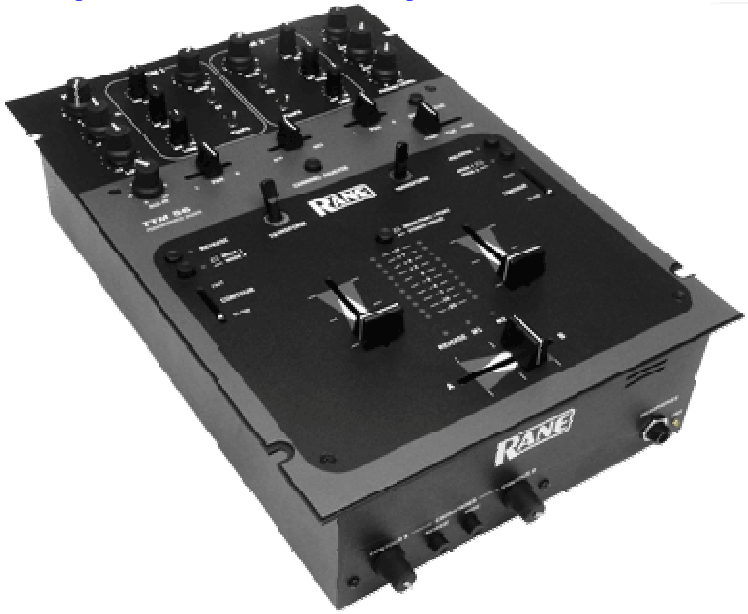
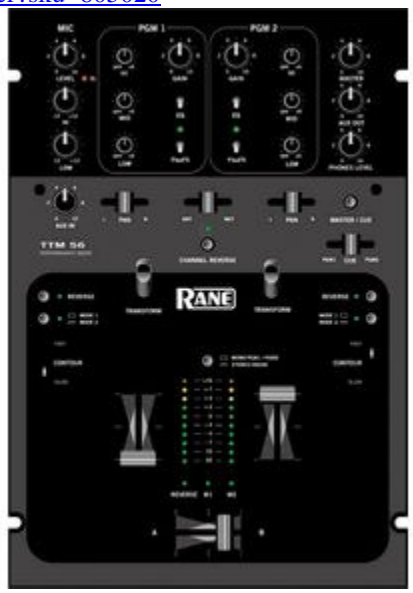
2) Turntable Mixer: RANE TTM56: http://www.rane.com/ttm56.html

Currently our production room turntables (vinyl record players) are useless because we don't have a functional mixer box with which to interface them into our audio console there. The mixer box requested here is the same model we use in our broadcast studio. There are several reasons we would need to enable the use of our production room turntables, particularly with this mixer. This would allow us to prerecord live in-house "mix" show performances, such as urban, house, and electronic music formats, both for production use as well as future broadcast. Another important and key use of this device would be train future DJs in our production room how to use the equipment for such purposes, so as to then be able to use it live in the main broadcast studio without interfering with live shows. It would also allow us to digitize in

our production room any rare vinyl we have in our library not found on CD. Lastly, should our RANE mixer in the main studio, which has had much mileage put on it since we bought it new in 2004, go down or need to be repaired or serviced, we could temporarily replace it with this one and not suffer any downtime for the use of the studio turntables. It should also b e noted that our studio mixer is used not just for the turntables when playing or mixing vinyl, but it also is used by DJs as the way by which to plug their laptops and ipods into the audio console. Having a back-up for all these functions, and the capability in both studio and production is key to maximizing the use of our facilities and all of out resources.
Bid # 1: List price: $999.00
Bid # 2: Musiciansfriend price: $749.00
http://www.musiciansfriend.com/product/Rane-TTM-56-Performance-Mixer?sku=805020





Bid # 3: Buy ERetail Price: **$629.99**
http://buyeretail.com/product.asp?i=RANTTM56

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3) Mix-Minus wiring

We simply need the same arrangement for the production room audio console as described above for the studio set-up. The difference is that in the production room we would use the ability in an off-air manner for pre-recorded interviews between callers and up to several interviewers all sitting with a different mic. These can't be edited and rebroadcast later. We won't need another THAT-2 since we already have one there.

LEI: wire up mix-minus for production console: $75

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4) On-Air Light wiring:

Outside of our production room we have mounted a small light that would turn on whenever microphones are turned on inside. We have a similar set-up outside of our main broadcast studio. This lets anyone waiting outside or passing by know that either a live broadcast and/or a recording of some kind is taking place and that live mics are picking up sound, and therefore to be quiet. Our engineers simply need to wire this light to our relay box in the production room to bring this functionality "to light".

LEI: 24 volt on-air light wire-up $200.00

Itemized Summary

Equipment Name	Equipment cost	Installation/Service/labor
Transmitter location		
OMNIA 6EXI-HD Processor	$8,771.00	$400.00
Broadcast Tools 4 Input Audio Switcher SS4.1III	$189.00	-
Comrex Access Rack (XMTR end)	$2,650.00	$750.00
Sundance FiBox Ims-Tx (XMTR end)	$1,625.00	$750.00
CircuitWerkes Sicon-8	$1,000.00	$350.00
UPS Power Supply 2000VA SYMMETRA	$2,575.00	$500.00
Transmitter Nautel V1a	$8,950.00	$1,000.00
Local Area Network (LAN by PSU TNS)	-	$1,000.00
Transmitter Totals:	**$25,760.00**	**$4,750.00**
Broadcast Studio		
Comrex Access Rack (Studio end)	$2,650.00	included above
Sundance FiBox Ims-Tx (Studio end)	$1,625.00	included above
Local Area Network (LAN by PSU TNS)	-	$1,000.00
OMT Service Support Pack	-	$595.00
EAS Anywhere Software	$100.00	-
Broadcast Tools Digital Switcher DMS III	$384.00	$50.00
Logger / Skimmer Computer	$1,595.00	-
Broadcast Tools Contact Closure GPI-32	$275.00	$150.00

Denon DN-C550R Dual CD Deck	$605.00	$200.00
Wheatstone GP4 cough-mtue	$191.00	$350.00 (4 modules total)
Rackmount Filter/Fan	Incl. in labor	$150.00 (includes Hardware)
Harris World Feed Panel	$280.00	$150.00
JKAudio THAT-2 / Mix-Minus Wire up	$199.95	$75.00
General Maintenance and Diagnostics	-	$500.00
Aleratec CD Copy Cruiser Pro	$329.99	-
Microboards DVD/CD Duplicator	$299.99	-
Barix Audio Streamer (pair)	$1,500.00	-
OC White Microphone Springs	$363.30	-
Studio Totals:	**$10,398.23**	**$3,220.00**
Production Studio		
Harris World Panel	$280.00	$150.00
RANE Turntable Mixer TTM56	$629.99	-
On-Air Light Wire up	-	$200.00
Mix-Minus Wire up	-	$75.00
Production Totals:	**$909.99**	**$425.00**
Grand Totals:	**$37,068.22**	**$8,395.00**