

New York AES 2007

**Expanding and
improving your small
intercom system**

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**My intercom channels are too
chaotic!**

**How do I expand?
Where do I start?**

Pete Erskine

WET intercom

- RTS and Clear-com – 30vdc power on Pin 2
- Standard Clear-com is 1 channel on pin 3
- RTS has 2 channels #1 - pin 2 and #2 - Pin 3
- Other intercom companies are ASL, production intercom and Telex audiocom to name a few.

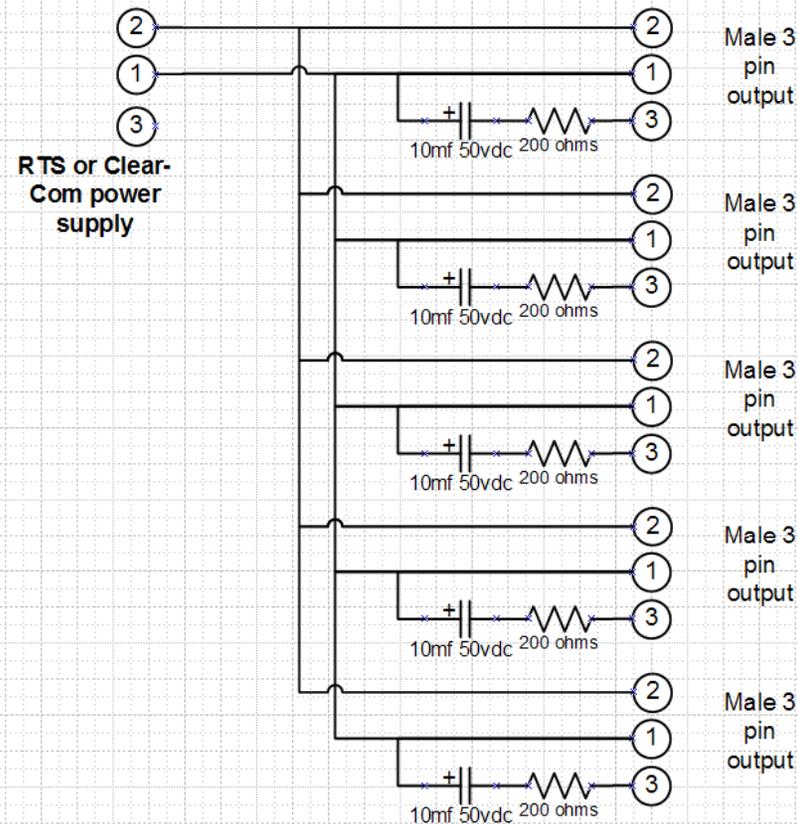
What can you do to expand?

■ Add more channels

Jig to supply many comm channels in either RTS or Clearcom using only 1 power supply – only limited by the power consumption of the attached beltpacks and the power supply size.

A Clear-com system will have each channel totally isolated.

An RTS system will have a common channel 1 and independent channel 2 private isolated channels.



Revisions		 best audio 320 Seventh Avenue, #264 Brooklyn, NY 11215 917-750-1134	Multiple comm channels	
Designer: Pete Erskine		SCALE: None	Drawn by: Pete Erskine	Drawing Number 1
		DATE: Oct 6, 2007		

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- Add Beltpacks

Clear-Com has a universal programmable
RS -603R TW

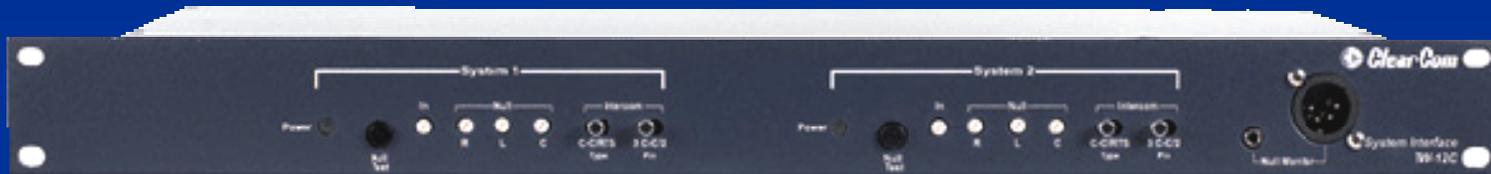


■ Master Stations – analog 2 channel to 12 channel



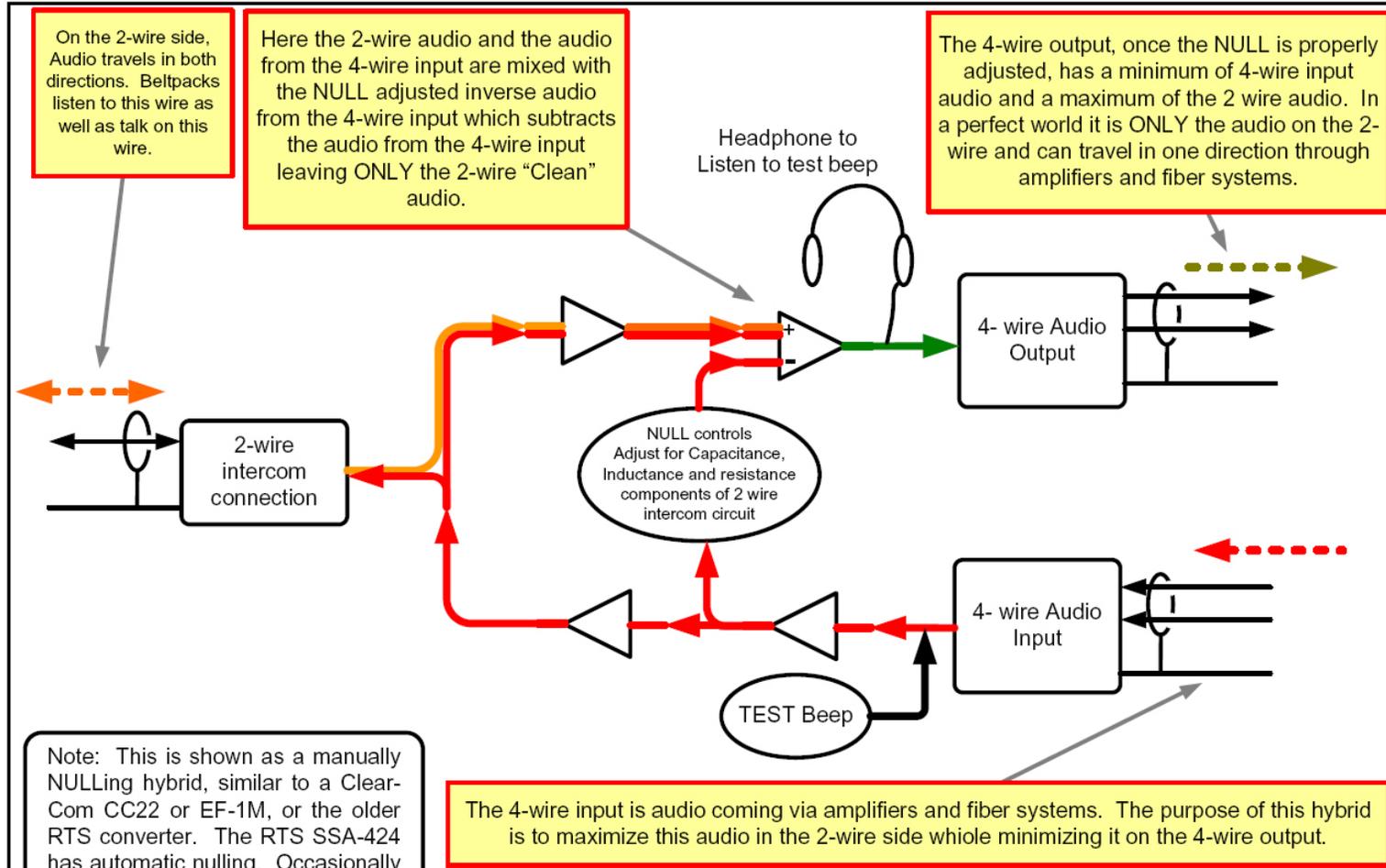
- Interface to other equipment with HYBRIDS

TW-12C between systems



Convert your wet comm to 4 wire to send comm long distances or interface to Matrix systems





Note: This is shown as a manually NULLing hybrid, similar to a Clear-Com CC22 or EF-1M, or the older RTS converter. The RTS SSA-424 has automatic nulling. Occasionally this auto nulling becomes a problem when the system gets "over-nulled" The Studio Technologies Model 46 has manually activated auto nulling which eliminates this problem.

Revisions	

best audio
 320 Seventh Avenue, #264
 Brooklyn, NY 11215
 917-750-1134

2 wire to 4 wire converter

Theory drawing

Designer: Pete Erskine	SCALE: None	Drawn by: Pete Erskine	Drawing Number	3
	DATE: Feb 13, 2007			

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- Radio interfaces

Clear-Com TW-47



- Dialup – switchboard
RTS 6 channel X 12 output



RTS 12-15 channel X 26 output



For Clear-Com use Telex Audiocom IC-6X

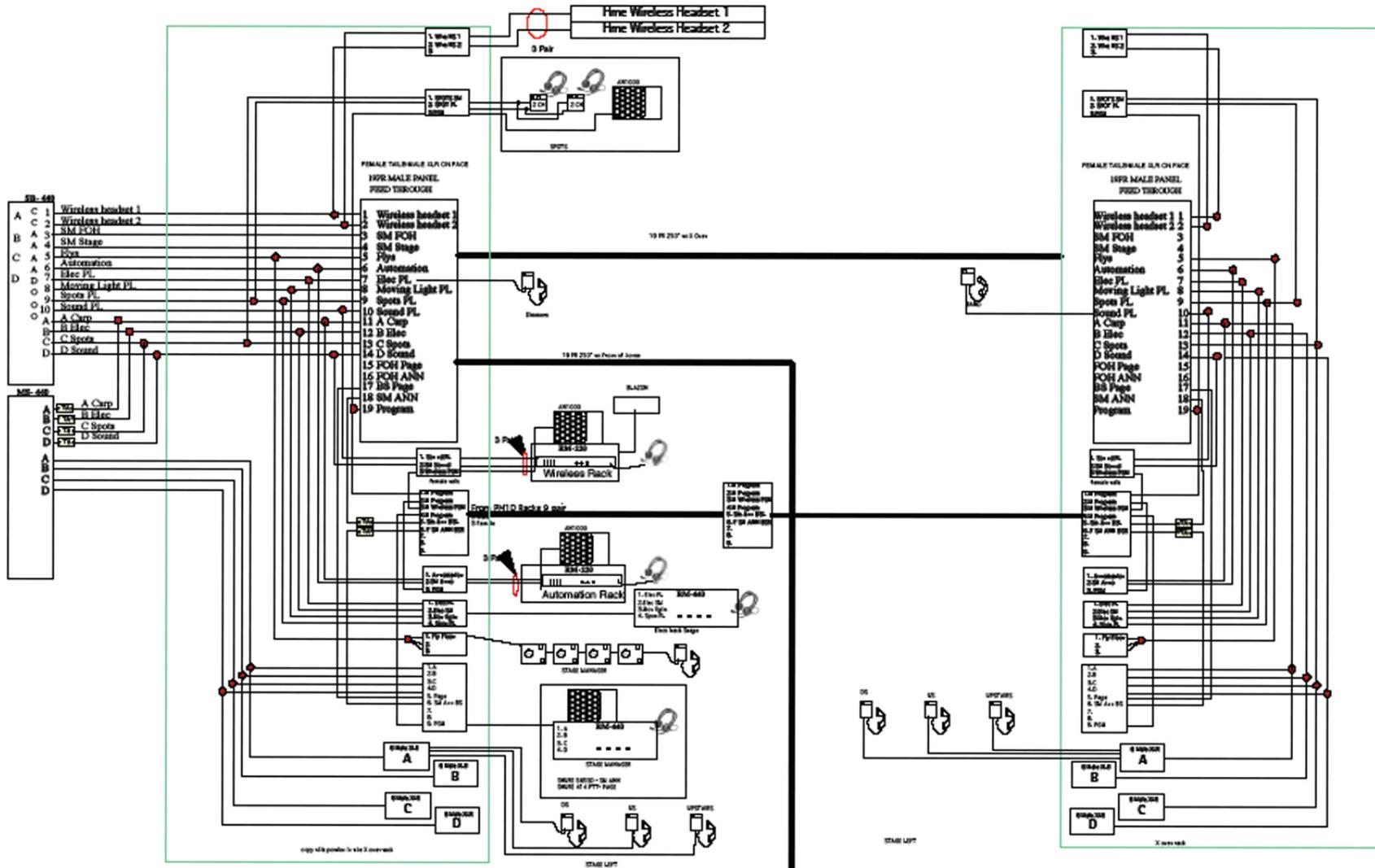


- Add channels
- Add more beltpacks
- Master stations
- System interfaces
- Walkie-talkie interfaces
- Dialup distribution

Intercom on the road

Mac Kerr

COMM FLO 1 OF 2



Integrated systems





Matrix intercom
and
master stations

Dave Brand

Matrix intercom systems

- Problems with 2-wire systems
 - Difficult to add master stations
 - Subject to inter-channel cross talk
 - Complex to interconnect several systems
 - Four wire system simplify these problems

Matrix intercom systems

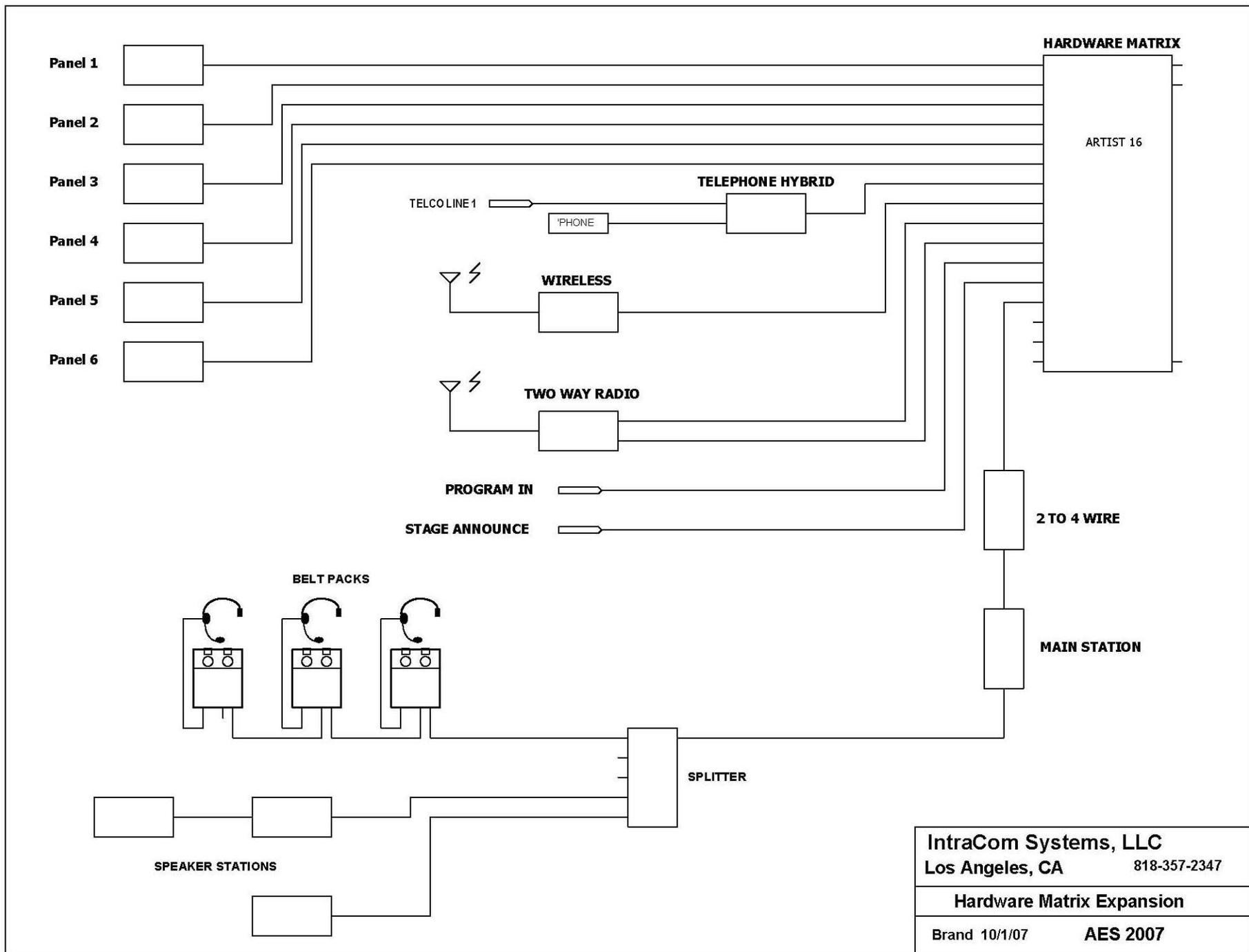
- Four wire matrix systems are based on central summing/routing engines.
- Early systems were analog
- Systems now in use are all digital

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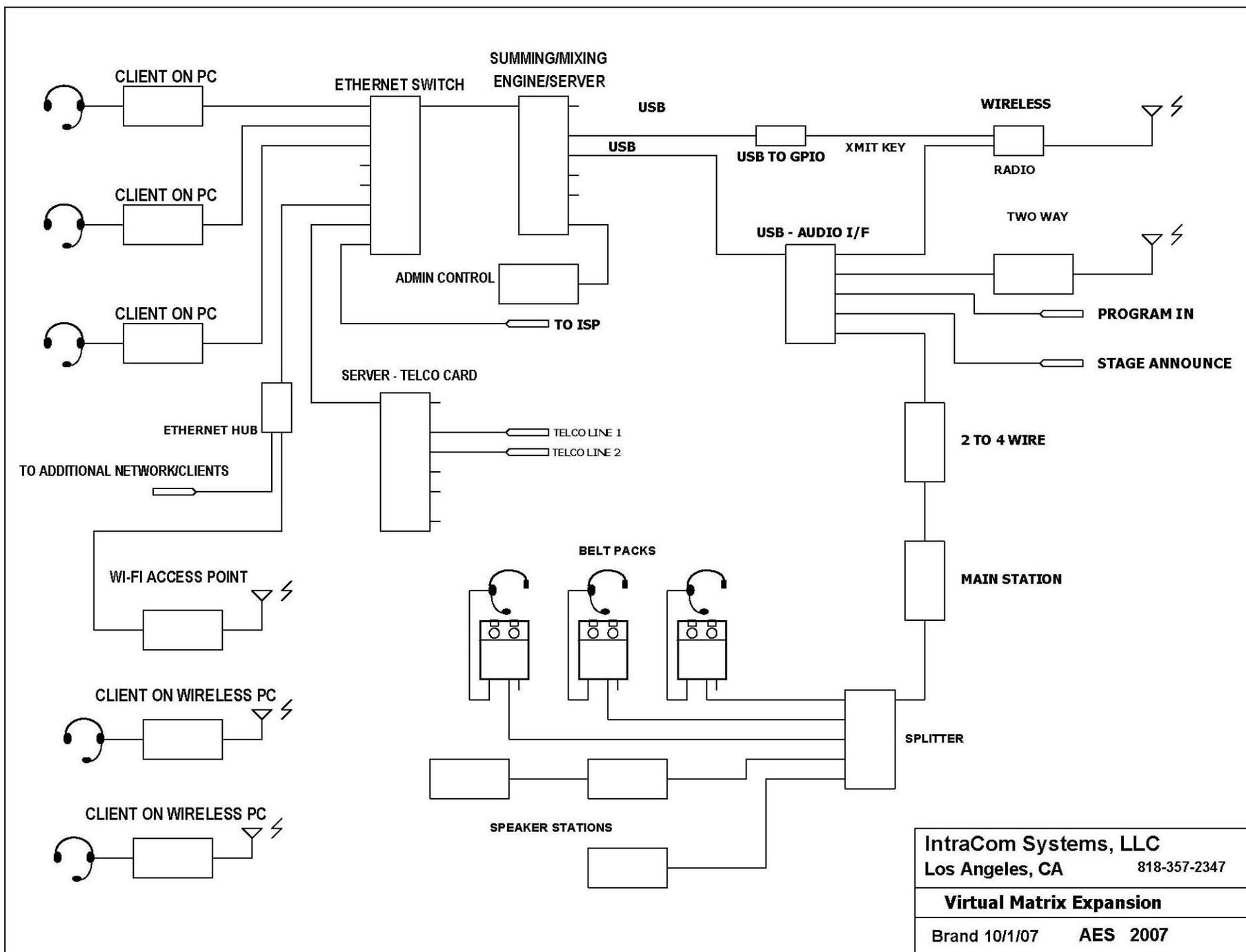
- Popular Existing Systems – Four Wire
 - Clear-Com Eclipse Series
 - RTS (Telex) ADAM (Advanced Digital Audio Matrix)
 - Riedel Artist
 - Several other European systems which are not in widespread use in the US but enjoy some popularity overseas.

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- “Virtual system” that runs on standard computer hardware. IntraCom VCOM is the only one I am aware of now.
- Market is small and cannot support many competitors.
- Drawing one shows a typical small hardware matrix.
- Drawing two shows a new way now available with a client/server software matrix.



IntraCom Systems, LLC	
Los Angeles, CA	818-357-2347
Hardware Matrix Expansion	
Brand 10/1/07	AES 2007



IntraCom Systems, LLC	
Los Angeles, CA	818-357-2347
Virtual Matrix Expansion	
Brand 10/1/07	AES 2007

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■ Conclusion

- The complexity of productions is increasing dramatically and new tools and techniques are required.
- Matrix systems are now more available for this market due to smaller versions and increased manufacturing efficiency.
- Systems based on standard and easily available computer components are becoming more well suited to the needs of the production community.
- Production and sound designers now have far greater flexibility in tailoring the intercom systems that are vital to success.

The Wireless solution

Larry Estrin

The Wireless Solution

- Use a wired device whenever possible
- Be aware of *critical* show wireless needs
- Frequency Coordination
- Antenna Placement
- Keep the number of simultaneous talkers to the absolute minimum

TELEX BTR 800



TELEX BTR 700



Clear-Com Tempest



Clear-Com Cell Com



Clear-Com PCR 202



Clear-Com WBS 200



HME PRO 850



HME DX 100



HME DX 200



HME DX 300



Rent it!
**How to expand
your system with help**

Michael Mason
CP Communications

Trouble shooting

- Wet comms cause signal problems in Clear-com and crackling in RTS.
- Keep all connections dry.



- Do not co-mingle audio and comms ground
- Try to keep your comms ground isolated from earth ground
- Do not use star quad cable in 2 channel systems
- Do not connect pins 4-5 in headsets when using BP325! Causes much distortion in the whole system
- Central home run connection point allows disconnecting lines to track down a buzz
- Set all talks to momentary only if you can

■ Headset type:

- Light weight CC26 / PH8 / Phonak
- Single ear DT108 / CC-85
- Double ear DT109
- Dave Clark single and double ear

High noise with noise canceling mic

Go to www.theboom.com for very good hi noise mics

Expanding your intercom

A pdf of these slides is available on the best Audio website along with many other intercom tips and tricks learned over the years

www.bestaudio.com in the downloads section