Clear-Com®

YEAR IN REVIEW

2016

Clear-Com®

YEAR IN REVIEW

Contents

Clear-Com made major strides in 2016, releasing 13 new products which continue to push forward the state of the art in intercom. The focus was a mix of refresh modernization and additional features building on the momentum of products released in 2015 such as LQ, HelixNet, Eclipse-HX, and FreeSpeak II.

We have been working to resolve some big architectural questions for IP-based products, which led to the release of enhanced IP capabilities within our LQ intercom interfaces and IP linking to our matrix frames as well as a unified management system which brings many of our products under the same configuration umbrella for the first time.

Throughout 2016, we continued to improve on our industry-leading intercom solutions by upgrading our IFB router solution; introducing Power-over-Ethernet to our digital partyline system; and, introducing a new fiber connection option for our popular wireless system's base station and splitter.

Feature enhancements in our digital partyline solution now includes 24 channels; our matrix solution was upgraded with fast assign and outage free downloads; and most recently our IP link solution introduced GPIOs and matrix linking—all of which contributed to 2016 being a very positive year for solving communication challenges for our customers.

Additional innovations include a mid-level wireless product with high-definition audio, an app-based communication system for the Android platform which communicates directly with our matrix, and two new premium lightweight headsets. Of course, the acquisition of Trilogy products will open up some new horizons for us in areas where we did not have solutions.

2016 was also the year that Audio-over-IP finally settled conclusively on Dante with the AES67 element driving adoption. The Dante card for our matrix system, planned for an early 2017 release, is setting the pace for yet another exciting year with both Clear-Com and Trilogy products.

Can't wait to show you what we have coming up next.

Cheers!

Simon Browne
Director of Product Management
Clear-Com & Trilogy Communications

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Network TV:
Solving UHF Congestion

Moving intercom to the 1.9GHz frequency band with FreeSpeak II gave network TV customers flexibility for their wireless communications, which they thought wasn't accessible due to wireless microphone conflicts. Clear-Com's FreeSpeak II is the communication system of choice for major media productions, including: 'Hell's Kitchen', 'Henry Danger', 'The Late Show with Stephen Colbert', and Pope Francis's U.S. visit. For Hell's Kitchen specifically, the studio had almost 70 UHF wireless devices being used, so the UHF band was at a premium; the choice to move to FreeSpeak II 1.9GHz was an easy one.

Partner Endorsement

ON THE GLOBAL STAGE

Clear-Com: Everywhere at the 2016 Summer Games In Rio

Every four years, countries from around the globe watch to see if their country will bring home the gold during the Summer Games. During the 2016 Summer Games in Rio de Janeiro, Clear-Com was the top communication choice of many broadcasting stations that brought the games to the millions of viewers at home.

During the Games, Clear-Com's range of intercom and audio connectivity products was used by a number of broadcasters in a variety of applications, including:

1 At the **International Broadcast Centre**, the majority of broadcasters used Clear-Com as their intercom solution of choice.

2 **TV Globo** completed the build of its first 4K OB truck. Communication was based entirely on Clear-Com digital matrix and was used at the European football/soccer stadiums, as well as other sports venues throughout Brazil. TV Globo also provided FreeSpeak II used throughout Olympic City.

3 **SportTV**, a Globo Network channel, dedicated 16 live channels broadcasting multiple events over eight connected Clear-Com matrix frames.

4 **ESPN** relied on Clear-Com's digital matrix systems for communications, as well as Clear-Com's IP interface cards for high performance and low latency audio connection between the matrix systems and highly scalable IP-based intercom systems.

5 **Fox Sports Brazil, Rai Italy's Rio de Janeiro's studio**, and **Esporte Interativo** rented OB mobile units from the OB truck rental supplier, **Salvatore de Lucca**, for local broadcasting. Each truck was outfitted with Clear-Com's digital matrix intercom systems and additional comunication gear was supplied, firmly establishing on a world stage that the demand for Clear-Com in broadcast is rapidly growing.

Clear-Com's Brazilian distributor **Savana Comunicações,** located in Rio de Janeiro, was instrumental in facilitating the relationships and the equipment installations with the broadcasters listed above.

"When sports fans from around the world tuned in to watch the Games from Rio this summer, it's the performance of broadcasters that ensured that the fans at home could see and cheer for their country's athletes," said Bob Boster, President at Clear-Com. "We're honored that a number of these broadcasters have placed their trust in Clear-Com to make sure that their communications perform as well as the athletes."

The Future of Modern Broadcasting

'The International 6', an eSports gaming event changing the way modern broadcasting is delivered, was hosted in Seattle's Key Arena and broadcast to more than 10 million viewers worldwide. Sixteen teams, composed of five players each, competed for a chance to win the first-place prize of $9.1 million in the "Defense of the Ancient 2 (DotA2)" game.

ATK, a Clear-Com partner based out of Los Angeles, CA, won the bid to outfit Seattle's Key Arena with Clear-Com equipment, including wireless, wired, and UHF solutions. An integral part of the event's success was clear intercom between production teams using Clear-Com.

The 'International 6' series of eSports gaming started small six years ago, with just $1 million in prize money, only VOIP and streaming available for viewers, and little to no press coverage from major broadcast stations. Now, in 2016, it was on the international network TV stage with a panel of five gaming analysts, coverage by ESPN, and the global expertise and technical support of Clear-Com playing a major role to make this event a success.
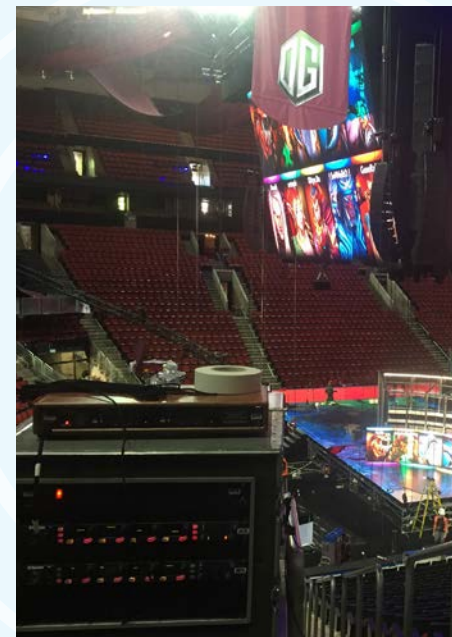
Long Distance Call: Simple App Solutions

A world-class event requires world-class communications. Spanning nearly 30 miles, China's 2016 Great Wall Marathon race would normally require simple intercom systems with limited functionality in order to cover communications over such long distances. However, with the help of the new Agent-IC—an IP-based app that turns an iOS device into a two-way duplex intercom—communications were provided to the broadcast team in a secure, reliable duplex intercom service normally only found inside a studio.

RENTAL REVOLUTION

Broaden your rental business with the Global Rental Group

Let us work for you! Customers are coming to Clear-Com in need of rental equipment and solutions because they often don't know where to go locally to rent their equipment. As a GRG Partner member, Clear-Com will reach out to you and send you rental request referrals generated from your local area. More lead generation equals more revenue! You will also receive a company profile listing on the Rental Support Directory on the Clear-Com website instructing the customer how to contact you directly.

It's fast, easy, and FREE to become a GRG Member:

1 Visit the Rental Support page on the Clear-Com website and click on the Become a Member link: (http://bit.ly/JoinGRG)

2 Fill out the application online. The information you provide in this application will be used to create your GRG directory listing. Once you have applied for membership, you will fall into one of two membership types, determined by your rental inventory.

Premier Membership

Rental Inventory:
FreeSpeak II Wireless;
HelixNet Digital Partyline;
Eclipse HX Digital Matrix;
LQ Series IP Solutions.

Benefits Include:

- GRG promotions
- Expedited repairs & discounts
- Quick turn-around on urgent orders
- Factory training
- Access to advanced Clear-Com technical information & phone support
- Listing in the Clear-Com Rental Directory online
- Market-specific product information on practical product deployment and new developments

Full Membership

Rental Inventory:
Encore Analog Partyline;
DX Series Wireless;
WBS Wireless.

Benefits Include:

- Factory training
- Listing in Clear-Com Rental Directory online
- Market-specific product information on practical product deployment and new developments

Wired or Wireless: How to Decide?

Making the decision to finally go wireless is a big step, but where do you start? Clear-Com has a variety of wireless options, as such we've created a simple chart to help narrow down your options. Start with the attributes that are the most important so that you can begin the conversation and get the best wireless solution to meet your needs.

CHOOSING THE RIGHT WIRELESS INTERCOM SYSTEM

FreeSpeak II 2.4GHz · FreeSpeak II 1.9GHz · DX410 · DX300ES · DX210 · DX100

2-WIRE & 4-WIRE INTERFACING

NO	YES
DX100	FSII 2.4, FSII 1.9, DX410, DX300ES, DX210

5+ CHANNELS
FSII 2.4
FSII 1.9

2 CHANNEL
DX410
DX300ES
DX210

SINGLE CHANNEL
DX100

AUDIO QUALITY
3 KHz — DX300ES, DX210, DX100
7 KHz — FSII 2.4, FSII 1.9, DX410

NUMBER OF USERS: FULL-DUPLEX AND TOTAL

4 full-duplex users or less	4 full-duplex users or less	3 full-duplex users or less	5 full-duplex users or more
15 total users or less	15 total users or less	15 total users or less	25 total users (single system) / 65+ total users (multi-system)
DX100	DX210 · DX410	DX300ES	FSII 2.4 · FSII 1.9

REGIONAL APPROVALS

FSII 1.9
ONLY ALLOWED IN:
United States, Canada, European Union Countries (CE), Australia, New Zealand, Hong Kong, Singapore, Japan, Argentina, Brazil

FSII 2.4 · DX410 · DX300ES · DX210 · DX100
NO RESTRICTIONS

SYSTEM COVERAGE

MULTIPLE AREAS
FSII 2.4 · FSII 1.9

SINGLE AREA
DX410 · DX300ES DX210 · DX100

VENUE SIZE

DX100
DX410
DX300ES
DX210
FSII 2.4
FSII 1.9

ABILITY TO RENT ADDITIONAL UNITS

✓ YES
DX410   DX300ES
FSII 2.4 DX210
FSII 1.9 DX100

BUDGET

DX300ES
DX100

DX410
DX210

FSII 2.4
FSII 1.9

Clear-Com
AN HME COMPANY

www.clearcom.com

Performance in the International Spotlight

Providing unparalleled solutions for broadcasting: it's just what Clear-Com does. During last year's 2016 IBC Show, Clear-Com supplied and installed the communications systems for the IBC Auditorium, meeting the high standards IBC demanded to deliver quality broadcasting during the show. An array of equipment made productions the success it was including HelixNet digital partyline, Eclipse-HX digital matrix solution, FreeSpeak II wireless beltpacks, and the CC-110 lightweight headsets.

Partner Endorsement

"The Clear-Com brand speaks for reliability and stability—which we are proud to represent in the Middle East region. Their products are smart and sophisticated, and we see lots of potential."

Constantinos Drimakis, Operations Manager
NMK Electronics Ent
United Arab Emirates

Clear-Com®

Communications for Social Engagement

When the biggest social media event of the year needed a communication solution, Facebook's 'F8' Developers Conference turned to FNTECH, a full service production technology company providing Clear-Com live production services. Implementing a fully flexible and manageable Eclipse-HX digital matrix, HelixNet digital partyline, LQ IP devices, and FreeSpeak II wireless intercom solution, all connected over an IP backbone allowed FNTECH to provide 'F8' with an unparalleled solution able to scale on the fly quickly and easily.

Partner Endorsement

"We initially rented FreeSpeak II for the Disney Expo because we heard so many good things about its performance and reliability. Since purchasing the system, we have found it to be reliable, flexible, easy to expand and extremely popular with anyone who uses it."

Trace Goodman, President/Senior Audio Designer, Goodman Audio Services
USA

PRODUCT INNOVATIONS

Agent-IC for Android and iOS

A mobile app that enables remote users of Eclipse HX digital matrix intercom systems to securely connect and communicate with smart devices including wearables. Available on both iOS and Android platforms, Agent-IC gives users of select mobile devices remote access to their intercom systems. Agent-IC connects users from virtually anywhere in the world over IP network infrastructures, without compromising audio quality.

Eclipse HX: Scroll Assign

Eclipse HX matrix systems can connect directly to the LQ Series devices via the IVC-32-HX IP card, enabling routing of intercom audio and signals across large distances over an IP infrastructure or the Internet. Also enabled within the Eclipse HX system is the ability for scroll assignment for quick and easy key changes directly from a beltpack or user panel.

LQ: Intercom over IP

Now with the ability to link LQ Series devices to Eclipse HX systems, industry standard intercom systems, 4-wire devices, 2-way radios and audio consoles can communicate over an IP infrastructure over long distances. The new GPIO enabled LQ devices allow users to also move high-quality audio signals, such as program feeds from IFBs, providing full 20 Khz audio bandwidth between LQ devices.

FreeSpeak II-BASE-II and Splitter:

The new FSII-BASE-II and splitter enhance the entire wireless system with expanded functionality, improved interfacing and ease of use through real-time browser configuration and monitoring. FSII has rapidly become the wireless intercom solution of choice among the world's distinguished audio professionals and the most demanding production environments. With the inclusion of fiber, broadcasters can cover very large sites and sporting events with ease.

DX410: Wireless Flexibility

The new DX410 system features 7kHz wideband audio for exceptional audio clarity. It is the first DX Series wireless intercom system to offer this level of audio frequency range. Easy to set up and configure, the DX410 also features lightweight yet rugged beltpacks, and an all-in-one wireless headset option.

HelixNet: Digital Partyline

More channels and more users supported. The updated HelixNet now delivers up to 24 intercom channels on a single system. The new beltpack offers Power-over-Ethernet (PoE) on a single Main Station.
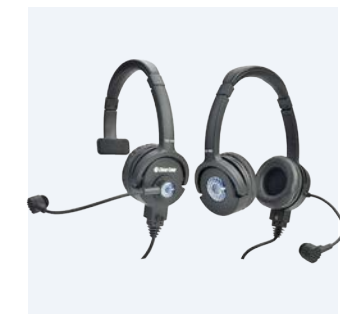
Premium Headsets

Fashioned after the popular CC-300 and CC-400 headsets, the CC-110 and CC-220 headsets are the premium, lightweight version designed for all-day wear. They have the same incredible, smooth audio with the flexibility of replaceable and serviceable parts. A soft leatherette ear pad and a comfortable foam cover is included with each headset for the best headset experience.

Colorful Solutions: BMG Feel the Love

The world-renowned Blue Man Group (BMG), the anarchic trio of silent bald and blue stage performers have recently adopted two sets of Clear-Com's FreeSpeak II and HelixNet systems for production communications: one for BMG's Las Vegas show at the Luxor Hotel, and the second for their concurrent world tour. Marcus Ross, BMG's Resident Audio Supervisor and Sound Designer noted, "with help from Clear-Com, it was simple for us to integrate the two FreeSpeak II systems into the productions!"

Clear-Com®

Case Study

The Magical World of 1.9GHz Comms

Proudly working with London-based Autograph Sound on their recent project for Disney's Aladdin, Clear-Com systems were supplied and installed at the famous Prince Edward Theatre. Andy Brown, Senior Production Sound Engineer of Autograph Sound said of the system, "FreeSpeak II runs on the 1.9GHz band, which is a major benefit because there is a lot of congestion on the 2.4GHz and 5GHz frequencies. For the show, 1.9GHz allows us to steer clear of it all, meaning we have one less thing to worry about during production!"

Partner Endorsement

It's not just FreeSpeak II's operating range of 1.9 GHz that attracted us; we also liked the ease of setup. Being able to add coverage areas by running a piece of CAT5 or CAT6 and adding a transceiver, made the set up very efficient.

Rod Allen, Senior Project Manager
Bexel Global
USA

PRODUCT AWARDS

DX410 - Best in Show

ProSound News awarded the DX410 "Best in Show" at NAB 2016.

TVTechnology PRODUCT INNOVATION Awards 2016

Agent-IC - Product Innovation

Agent-IC, the iOS and Android app solution, won TVTechnology's 2016 Product Innovation Award.

The READERS' CHOICE AWARDS 2016
ProSoundWeb & Live Sound International
WINNER

FSII - Best in Show

FreeSpeakII won ProSoundWeb Reader's Choice Award, confirming it's a sophisticated solution desired by end-users and integrators alike!

CREATIVITY WINNER BROADCAST BEAT

Creativity in Content

Clear-Com won "Creativity in Content Creation Award" for Agent-IC: mobile intercom leading the way.

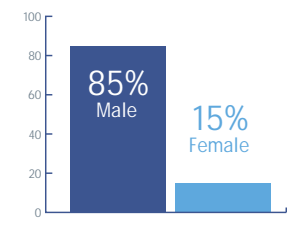## Social Engagement

FACEBOOK

Largest Social Sharing Site w🌐rldwide

1634 Followers

FSII Video **6.1** Thousand Views

FSII PR **5.9K** Views

LDI Promo **2.8** Thousand Views

85% Male | **15%** Female

BIGGEST USERS: Professionals interested in our products

GOAL: Strenghten Brand Awareness

TWITTER

Micro Blogging Social Site

1656 Followers

DX 410 **1760** Views | FSII Story **1319** Views | BV Expo **1310** Views

15% | **85%**
Females | Males
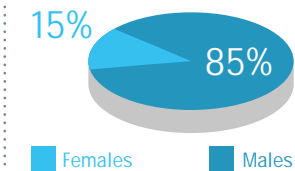
BIGGEST USERS:
EXPERT TECH PRO'S
High Earning Tech Experts

GOAL: Word-Of-Mouth Marketing

YOUTUBE

Social Video Sharing Site

334 Followers

FSII Video 4 **11** Thousand Views | DX 210 **3.3K** Views | FSII Video 3 **2.6** Thousand Views

93% | **7%**
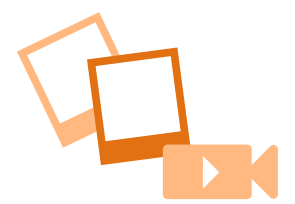■ MALE
■ FEMALE
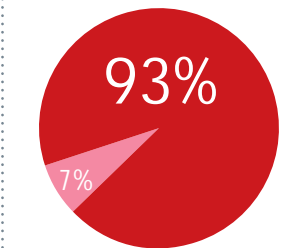
BIGGEST USERS: end-users wanting new products

GOAL: Brand Loyalty

INSTAGRAM

Picture + Video Social Sharing Site

258 Followers

FSII Beltpack Video **140** Views | AES Booth Overview **34** Likes | FSII Antenna Photo **140** Likes

15% Female | **85%** Male
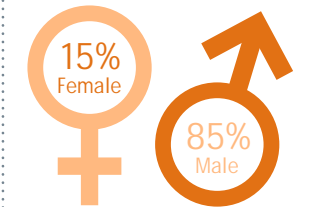
BIGGEST USERS: Tradeshow Professionals

GOAL: Visual Story Engagement

The World's Biggest Live Event

Wuhan Wanda Dragone Entertainment Co. Ltd., co-owned by China's Beijing Wanda Cultural Industry Group and The Dragone Group, selected Clear-Com wired and wireless intercom systems to control the live production of The Han Show, which took place in Wuhan's Red Lantern Theatre in China. The most important function of the Clear-Com intercom system was to coordinate and synchronize each participants performance for smooth transitions between 632 user positions within the entire theater!

Partner Endorsement

" The choice for Clear-Com is easy – it's all about possibilities and the people behind it. As a company, Clear-Com provides us great resources both in sales, support, and the gear is just fantastic. Our customers are happy, and so are we. "

Marcus Lundahl, Sales Manager
Danmon Svenska AB / Soundware Sverige
Sweden

BLOG WITH STYLE

A professional blog is often defined as a website resource where writers share their experiences, provide educational content, or is a platform to publish industry-specific information. Clear-Com's **Comm 'n Sense** blog focuses on a variety of industry-specific technology, mixed with product-specific examples and documentation to help our customers understand how Clear-Com can support their intercom needs. Throughout the year, we target several different technology topics with posts from experts, Road Reports from our field staff, system diagrams and more. Our latest topic focused on wireless technology and how it applies to intercom communication.

Wireless Technology

In the world of intercom communication, there are two basic options: wired or wireless. Wired communication technology is what intercom was founded on and the concept is very straightforward. There are two intercom communication devices and a cable to connect them together. When wireless technology was developed and applied to intercom, it eliminated the length of cables connecting the communication paths. The freedom of getting rid of wires is attractive, but there are many different things to consider before deciding to go wireless.

Education

Clear-Com's **Comm 'n Sense** blog features several articles that will help answer basic questions regarding what is wireless, what data security issues to be aware of, and common hurdles people face with wireless devices. Learn about how Clear-Com users use wireless systems with Road Reports and Application Notes.

Wi-Fi Technology Blog Series:

PART 1
Wi-Fi: What Does the Name Mean and How Does it Work?

PART 2
The History of Wireless Technology: Wireless or Radio?

PART 3
Wi-Fi Radios and Modulation Techniques

PART 4
Wi-Fi RF and Data Security Issues

PART 5
Wi-Fi Data Systems: What to Watch Out For

Captivating Video Creation

Visit our YouTube Channel to view all of our Videos!

NEW TO CLEAR-COM

trilogy▲

A CLEAR-COM COMPANY

"

We are pleased to announce Clear-Com has acquired Trilogy. Both companies have been serving the professional intercom business for decades and bring a wealth of industry knowledge to the marketplace. The efforts of our combined teams will deliver tremendous added value to customers all over the world and will create new business opportunities for both companies.

"

- Mitzi Dominguez, CEO of Clear-Com
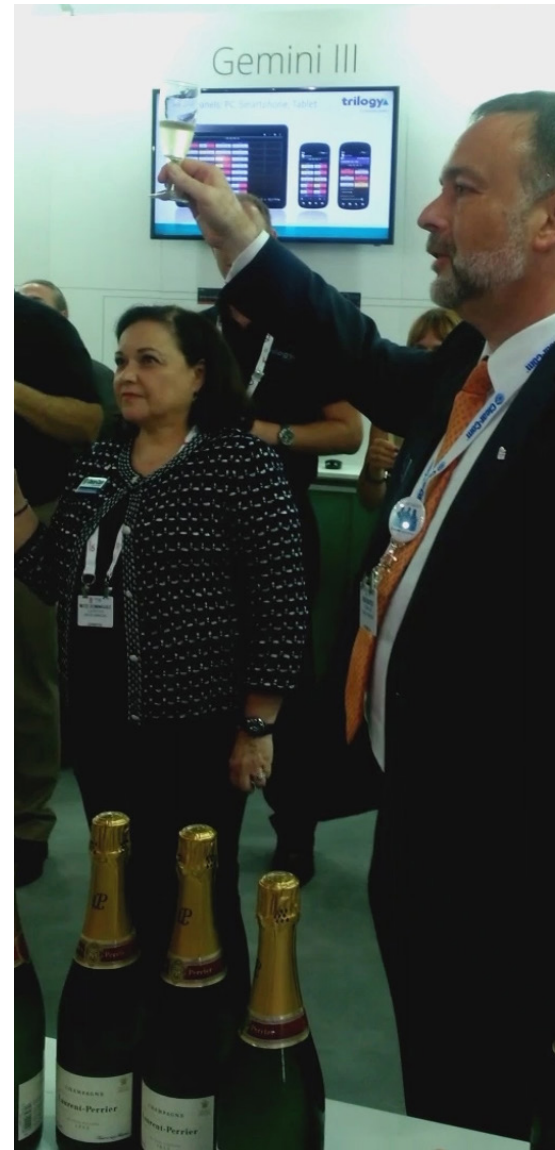
Trilogy Accolades

Driven by the VRT Sandbox incubator program and the European Broadcasting Union (EBU), and powered by a long list of partners, including Trilogy, the LiveIP project developed a fully functional IP production studio. Using existing open standards SMPTE 2022-6, AES67/RAVENNA, PTP and OpenFlow, this venture demonstrated a high level of interoperability and leverages the unique benefits of IP to create efficiencies, such as remote production and automation.

Trilogy - TVB Award

Trilogy - IBC Award

"Trilogy provided the intercom backbone and IP panels for this IP studio, and we are very proud of the achievements that have been made by the team in proving that a Live IP studio is not a concept, it is a viable option. We look forward to the next stage of involvement as a Clear-Com company, and to more successes in the future." - John Sparrow, Product Sales Manager, Trilogy.

Clear-Com®

Before you go...

By now you've discovered a lot of amazing things that Clear-Com was part of in 2016, from new product introductions to unique solutions for our customers. Hopefully you learned a few things, and also saw something that reflects your Clear-Com experience.

It's a big world of Clear-Com users out there who put our solutions to work to accomplish incredible things. Best wishes for us all in 2017, and I know we will link people together to do even more! Thanks for being a part of it with us.

Yours in full duplex,

Bob

Bob Boster
President
Clear-Com & Trilogy Communications