EXHIBIT A: E-mail from Mr. Joe Dichoso Outlining the Criteria for Professional Installation

From: Joe Dichoso[SMTP:JDICHOSO@fcc.gov] Sent: Thursday, September 17, 1998 4:51 PM To: Wismer, Sam Subject: RE: Proffesional Installation -Reply -Reply >From: Joe Dichoso[SMTP:JDICHOSO@fcc.gov] >Sent: Friday, September 11, 1998 9:33 AM >To: Wismer, Sam Proffesional Installation -Reply >Subject: >Sam, In order to use a standard connector, you >must justify professional installation. >The applicant should confirm the following when >justifying Professional installation: >Professional installation >To qualify for professional installation, you must >explain why the hardware cannot simply be >purchased and installed by the average >(technically inclined) person >1) Marketing >\* The device cannot be sold retail, to the general >public or by mail order. It must be sold to dealers. >2) Requires professional installation; -installation must be controlled. -installed by licensed professionals ( EUT sold to >dealer who hire installers) -installation requires special training (special >programming, access to keypad, field strength >measurements made) What is unique. >sophisticated, complex, or specialized about your >equipment which REQUIRES it to be installed by >professional installer? >3) Application > -The intended use is not for the general public. >For industry/commercial use. >\*\*\*If the above conditions are met, then you may >use a standard connector and the authorization will >be subject to the above conditions. >>>> "Wismer, Sam" <wismer\_r@lxe.com>

>09/11/98 09:03am >>>

>radiator, that utilizes a

>>We currently have a product, an intentional

>>Joe.

>>standard antenna connector(Type N). It is >currently undergoing testing a >>test facility, however the Engineer is taking issue >with the use of this >>connector. He cites 15.203 that states the >antenna must employ a unique >>coupling device. I contend that the section of >15.203 that pertains to >>professional installation applies to our >equipment. I believe we can use >>this type of connector because these units are >professional installed by our >>service group only. Further to this, they are >installed such that they are >>not accessible by unauthorized personell(Either >installed in a ceiling >>enclosure or a Nema type enclosure). If >something happens to the unit or >>antenna, our technical service group is called in >for the repair. We do not >>provide instruction for the customer to repair the >equipment themselves. Can >>you please confirm that this is an acceptable >of the N connector for an >>intentional radiator? >> >>Your attention to this matter is appreciated >> >>Kind Regards >> >> >>Sam Wismer >>RF Approvals Engineer >>LXE, Engineering >>Ext. 3654 >>Check out our Website at: >>http://www.lxe.com >> > >

# EXHIBIT B: LXE Field Service Engineers Training Course Syllabus

# **6200 Advance Training Syllabus** Date: 9/29/97

**Total Hours: 81** 

Total Hours. of	
I. Introduction to LAN Cable Building an A. Termination of 10Base5 LAN (Lab/Instr	
1. Backbone and AUI	(3.0  hr)
B. Termination of 10Base2 LAN (Lab/Instr	r) (1.0 hr)
C. Termination of 10BaseT LAN (Lab/Inst	
D. Termination of Token Ring Type 1 Cable	
E. Termination of Radio to Antenna Cable	
	(1.0 m)
II. Facility Analysis	
A. System Overview (Instr)	(1.5 hr)
1. Message Flow	(1.12 1.12)
B. Equipment Familiarization (Instr)	(.25 hr)
1. IFR	,
2. Auto-Transmitter	
3. Cabling	
C. FA Folder (Instr)	(0.5 hr)
D. IFR Familiarization (Instr)	(.25 hr)
E. Site Familiarization (Instr)	(2.0 hr)
F. Facility Analysis Practice (Lab)	(9.0 hr)
1. FA Simulations	
2. Building FA	
G. FA Report (Instr)	(1.0 hr)
III. Preliminary System Installation	
A. Inventory (Lab)	(1.0 hr)
B. FA Verification (Review FA)	(0.5  hr)
C. Customer Supplied Information	(0.5 hr)
IV. System Installation	
•	(2.21.)
A. Installation of LAN (Lab)	(2.0 hr)
B. System Configuration using ENG Notice 1. LDS, 3270, 5250 and Ansi	(Lab) (38 hr)
C. Troubleshooting (Lab)	(6 O b)
1. Network	(6.0 hr)
2. 6200	
3. Terminals	
V. Peripherals	
A. Modems (Lab)	(2 0 h-)
B. Scanners (Lab)	(2.0 hr)
C. Battery Maintenance (Instr)	(1.5 hr)
c. Battery Waintenance (1118ti)	(1.0 hr)
VI. Finals	
	(4.01)
A. Subnetting B. Quiz	(4.0 hr)
C. Critique	(1.0 hr)
C. Chuque	(0.5 hr)
VII. Additions	
	(9.01)
A. SNAC Box (Lab)	(8.0 hr)
B. Modem Elim. (Lab)	(4.o hr)

# EXHIBIT C: LXE Field Service Engineers Training Manual

# LXE INC.

# INSTRUCTOR'S GUIDE FOR ACCELERATED INSTALL TRAINING

# **Course Objective**

This course is designed to accelerate the students ability to install the LXE's, Mercury Generation of wireless terminals. This will be accomplished through hands on experience in: Installation and testing of three types of Local Area Networks. The installation of radio to antenna cables (Heliax). Determine and program equipment parameters as per the customers requirements to interface with various host computers. Establish communications between an LXE terminal and the customers application, utilizing an LDS, 3270, 5250 or TCP/IP protocol. Troubleshoot installed equipment down to the faulty module and return the system to a normal operating condition.

### **Course Overview**

Module I

Introduction to Cable Building

Module II

Installation Prerequistets

Module III

Installation of Mercury Generation Equipment

and Host to End User Communications

Module IV

Trouble Analysis and Repair

### **Intermediate Objectives**

#### **Termination of 10Base5 Local Area Networks**

(1.5 hr)

Given an LXE Field service Tool Kit, students will be able to successfully install and test a 10BASE5 (Thicknet) network, including AUI attachments and transceivers.

#### **Termination of 10Base2 Local Area Networks**

(1.5 hr)

Given an Lxe Field service Tool Kit, students will be able to successfully install and test a 10BASE2 (Thinnet) network.

#### **Termination of 10BaseT Local Area Networks**

(2.0 hr)

Given an Lxe Field service Tool Kit, students will be able to successfully install and test a 10BASE T (Unshielded Twisted Pair) network.

#### Termination of Radio to Antenna Cable (Heliax) (1.0 hr)

Given an Lxe Field service Tool Kit, students will be able to successfully install and test Radio to Antenna cables (Heliax).

# Inventory Equipment, Verification of Mounting Locations and Customer Supplied Information (2.0 hr)

Given an LXE Installation folder and a Shipping Invoice, students will be able to inventory all necessary equipment required to perform an installation and verify designated mounting locations.

Given a list of application requirements, the students will be able to obtain all information essential for the installation from the customer.

#### Installation of Local Area Network and Antenna Cables (1.5 hr

Given an LXE Field Service Tool Kit and an Installation folder, students will be able to install Antenna Cables and Local Area Networks as per the Facility Analysis Report.

#### **Loading Software**

(10 hr)

Given an LXE Field Service Tool Kit and the appropriate Flash Code, students will be able to properly load and configure LXE's Mercury Generation of equipment to communicate with the following host emulations: LDS, 3270, 5250 and TCP/IP.

#### **Trouble Analysis**

(8 hr)

Given an LXE Field Service Tool Kit and an IFR, students will be able to diagnose failures in the Network Controller, RFU, Terminals and Local Area Networks. Once failures are diagnosed, students will be able to make the necessary repairs and bring the equipment to a normal operating condition.

### **Class Materials**

Class materials listed below were calculated for a student roster of four. It is also required that the Course be instructed in Class Room A or B because of accessible host connections. All students are required to have an LXE Issued Tool Kit and Laptop Computer.

#### **Parts Required**

Thicknet/AUI		
50 ft	6200L331	Thicknet PVC Cable
12	6200L306	Connector N Type M PVC Screw
5 1 1	6200L308	Connector N Type F Term
1	62001350	Boot, N Type Term
	6200L313	N Type Grounding Kit
20 ft	6200L335	Standard AUI Cable
8	6200L300	Connector AUI F
8 5	6200L301	Connector AUI M
5	6200L360	E'net Transceiver(Vamp Clamp)
Thinnet		
55 ft	6200L329	Thinnet, PVC Cable
19	6200L303	Connector, BNC M PVC Crimp
2	6200L340	Terminator, BNC M
2	6200L302	Connector, BNC T
Heliax		
5 ft	9887L04	Cable, RFU/ANT, 1/2" Heliax
5	9887L03	Connectors, RFU/ANT 1/2" Heliax
Twisted Pair		
40 ft	6200L32	Twisted Pair Cable
17	6200L312	Connector RJ45 Plug
3	6200L325	Twisted Pair Transceiver
Equipment		
4	6220 series	6220 Net. Cont. or Equivalent
4	6280RFU	6280 RFUs or Equivalent

### Module I

#### Introduction

Welcome Class

Introduce your self

Course TiTle

Building Layout (exit doors, bathrooms, break areas and telephones)

Class Introduction (If four or less students)

Ouestions Handouts

#### Termination of 10base5/AUI Local Area Network (1.5 hr)

Instructional Lab

AUI cable and Vamp Clamp/Transceiver

- 1) Handout Materials One ft. Cable, Two Connectors and One Vamp Clamp/x'ceiver per Stu.
- 2) Max cable lengths
- 3) Attachment points/Max attachments
- 4) Construct cable using cutting and crimping tool. (Inst. then Stu.)

(Handout) Max length. Pinout Cut Inst

Termination of 10base2 Local Area Network (1.5 hr)

Instructional Lab

"T" adapters, Terminators, Transceiver

1) Handout Materials-Six ft. Cable and Two connectors per Stu.

(Handout) Max length. Cut Inst.

- 2) Max cable lengths/Hubs & Concentrator
- 3) Construct cable using cutting and

LXE Accelerated Installation Training Instructor's Guide

crimping tool. (Inst. then Stu.)	
tructional Lab	
Types of cables, Connectors/Transceiver 1) Handout Materials-Three ft. cable and Two Connectors per Stu. 1) Max Cable lengths/Hubs & Concentrator 2) Construct cable using cutting and crimping tool. (Inst. then Stu.)	(Handout) Max length Pinout
Types of LXE External RF Cables  1) Handout Materials-One ft. Cable and One Connector per Stu.  2) Heliax (Installation Caution) 3) Construct cable using cutting tools. (Inst. then Stu.)	(Handout) Connector Instruction
COOLD. (INSC. CHOIL Sea.)	

### Module II

# Inventory of Equipment/Setup Information and Verification

of Mounting Locations

(2.0 hr)

Instructional Lecture

(Handout)

Inventory

- 1) Required RFUs, Network Controllers
- 2) Heliax, Host/Modem (DB 25)
- 3) AUI connectors/RJ45/BNC connectors
- 4) Terminals
- 5) Scanners/Holsters (If ordered)

#### Verification of Mounting

- 1) Network Controllers/AC Power
- 2) RFU Platform/AC Power
- 3) Ethernet Wiring/Heliax
- 4) Antennas

#### Equipment Setup Information

- 1) Host Information
  - A. TCP/IP (IP Address, Autologin, Gateway/Router, Host Name, Subnetmask Term. Type)
  - B. LDS Anych (Line Speed, Xon/Xoff, Retry DTE/DCE, IP Address/Gateway)
  - C. IBM 3270 (Line type, Sta. Add., XID, NRZ, LU Term, IP Address/Gateway)
  - D. IBM 5250 (Line Type, NRZ, Cnt. Type, Sta. Add., DTE/DCE, IP Address/Gateway)

A. Barcode Types/RS232 B. All Terminal Emulations

2) Terminal Parameters

# **Module III**

### Installation of Local Area Network (1.0 hr) None Instructional Lab 1) Handout Materials Stu #1 12 ft. of RG-58 cable, 2 BNC connectors, 2 "T" adapters and 2 terminators Stu #2 12 ft. of RG-58 cable, 2 BNC connectors, 2 "T" adapters and 2 terminators Stu #3 32 ft. of Type CL2 cable, 2 N Type connectors, 1 Vamp Clamp/X'ceiver, 1 terminator, one Ground Terminator and one boot(Isolator) Stu #4 12 ft. of UTP cable, 2 RJ45 connectors, 2 UTP transceivers 2) Stu. #1 At Station #1 Build Thinnet Network 3) Stu. #2 At Station #2 Build Thinnet Network 4) Stu. #3 At Station #3 Build Thicknet Network 5) Stu. #4 At Station #4 Build UTP Network **Installation of Antenna Cable** (.5 hr)

LXE Accelerated Installation Training

Instructor's Guide

No Cables be built. will use Antennas
: Each Stu. ld be given /Flash disks.
}

# Loading Flash Software for various Emulations

None Instruct	ional I	_				
						(Handout)
					(LDS/NB)	Eng. Notice
					(3270/NB)	#249
					(5250/SS)	
					(TCP/IP/SS)	Note:Stu. uti-
					(3270/NB)	lizing Eng.
					(5250/SS)	Note. Install
					(TCP/IP)	Flash code.
					(LDS/NB)	After each
					(5250/SS)	Step- Stu.
					(TCP/IP/SS)	must proceed
					(LDS/NB)	thru Ini. Equi
					(3270/NB)	_
	4)Stu.	#1	Station	#4	(TCP/IP/SS)	
					(LDS/NB)	
	Stu.	#3	Station	#2	(3270/NB)	
	Stu.	#4	Station	#3	(5250/SS)	

Setup terminals to operate with Configured System (2.0 hr)  None Instructional Lab  1)Download Emulation to Terminals Eng. Notice 2)Configure Various Scanners 249 Scanner Handout Setup handout Setup handout should be at station  1)Instructional Lab  1)Check Systems for operation 2)Initialize Equipment-Instructor 3)Start Next session at Loading Flash  Initialize equipment- Instructor All students change stations Start instructions at LOADING FLASH  AFTER THIRD CHANGE DO NOT INITIALIZE EQUIPMENT	Configuration Files None Instructional Lab 1) Network 2) Host	(Handout) Eng. Notice 249. Setup instruction should be at station
None Instructional Lab  1) Download Emulation to Terminals 2) Configure Various Scanners 249 Scanner Handout Setup handout should be at station  Obtain Host Communications Instructional Lab 1) Check Systems for operation 2) Initialize Equipment-Instructor 3) Start Next session at Loading Flash  Initialize equipment- Instructor All students change stations Start instructions at LOADING FLASH		
Instructional Lab  1) Check Systems for operation 2) Initialize Equipment-Instructor 3) Start Next session at Loading Flash  Initialize equipment- Instructor All students change stations Start instructions at LOADING FLASH	None Instructional Lab  1) Download Emulation to Terminals	Eng. Notice 249 Scanner Handout
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Instructional Lab  1) Check Systems for operation 2) Initialize Equipment-Instructor 3) Start Next session at Loading Flash  Initialize equipment- Instructor All students change stations Start instructions at LOADING FLASH		
All students change stations Start instructions at LOADING FLASH	Instructional Lab  1) Check Systems for operation 2) Initialize Equipment-In	structor
	All students change stat Start instructions at LO	cions

# **Module IV**

None Instructional Lab

1) Stu. #1 station #1

A.Network bug in LAN

2) Stu. #2 Station #2

A.RF bug in RFU (disconnect cable from radio)

3) Stu. #3 Station #1

(8.0 hr)

- 4) Stu. #4 Station #2
- 5)Stu. #1 Station #2
  6)Stu. #2 Station #1
- 7) Stu. #3 Station #2
- 8) Stu. #4 Station #1
- 9)Stu. #1 Station #1
  A.Software bug in Controller (Incorrect Cons)

**Trouble Analysis** 

# 10) Stu. #2 Station #2 A.RF bug in Terminal

<u>Quiz</u>		(.5 hr) z and answer sheets before (ers on transparency after tes	
Clas	ss Critique	(.5 hr)	(Handout)
<del></del>			

### **CLASS QUIZ**

What is the maximum length on one segment of ethernet 10base5 cable?

- A. 100 ft.
- B. 1600 ft.
- C. 1000 ft.
- D. 8200 ft.

What is the maximum length of AUI cable that can be used and still meet IEEE 802.3 standards?

- A. 100 ft.
- **B.** 64 ft.

- C. 1000 ft.
- **D.** 164 ft.

What is the approximately distance between termination points along a 10base5 network cable?

- A. 8 ft.
- **B.** 4 ft.
- C. 2 ft.
- D. None of the above

The hole that is drilled into the thicknet ethernet to attach the transceiver should be made before applying the vamp clamp.

- **A.** T
- **B.** F

The maximum length of 10base2 cable that can be used in one segment and still meet IEEE 802.3 standards is 324 ft.

- А. Т
- **B.** F

When terminating a thinnet cable the first cut should be aligned using point "A" on the stripping tool.

- А. Т
- B. F

After terminating a thinnet cable with a 50 ohm load and placing a test meter at the opposite end, you should read approximately

- **A.** 100 ohms
- **B.** 50 ohms
- **C.** 40 ohms
- **D.** 25 ohms

After terminating both ends of a thicknet cable and applying a vamp clamp, a test meter would read \_\_\_\_\_ ohms from the ground pin to the center pin.

- A. 10 ohms
- **B.** 100 ohms
- **C.** 50 ohms
- **D.** 25 ohms

What is the maximum length of UTP cable that can be used on one segment and still meet IEEE 802.3 standards?

- A. 100 ft.
- **B.** 300 ft.
- C. 400 ft.
- **D.** 500 ft.

When terminating a UTP cable a DB 15 connector should be attached to one end of the cable and a RJ45 connector should be attached to the other end.

- А. Т
- B. F

Heliax cable is connected between which to devices

- A. Network Controller and RFU
- B. Host computer and the RFU
- C. Host computer and the antenna
- **D.** None of the above

Heliax cable is terminated with a TNC crimp on connector.

- А. Т
- **B.** F

When should the inventory of the equipment to be installed be completed?

- A. After verifying mounting locations
- B. First arrival on site
- C. When a Connector or cable is found to be missing
- **D.** None of the above

Where should you be able to obtain the IP Addresses to be loaded into the system be found.

- A. Job Folder
- B. Use LXE defaults
- C. Customer's MIS Department
- D. None of the above

Barcode information is obtained from which source.

- A. Job Folder
- B. Use LXE defaults
- C. Customer's MIS Department
- **D.** None of the above

Given two lengths of thicknet cable measuring 1000 ft. apiece and they are to be installed on the same network, what is required to make this installation meet IEEE 802.3 standards

- A. Repeater
- B. Modems
- C. Thinnet hub
- **D.** None of the above

What is the maximum number of devices that can be attached to one segment of thicknet cable.

- **A.** 50
- **B.** 70
- **C.** 75
- **D.** 100

All Terminal firmware contains which two emulation softwares

- **A.** LDS and 5250
- **B.** 5250 and 3270
- C. TCP/IP and LDS
- **D.** TCP/IP and 3270

What information is typed into the Inet on Ethernet field after booting the unit and stopping it at the first countdown

- A. Flash revision
- B. The host IP address
- **C.** The hardware (MAC) address
- D. The IP address of the unit to be installed

Given a host IP Address of 192.152.6.6 and a Network Controller IP Address of 141. 186.6.7, what device is required in the network to make the Network controller capable of communicating to the host

C.	Transceiver  Modem Router
	code is loaded into a controller using a HD 3 1/2" floppy
	. T . F
	ends of a 10base5 (thicknet) network must be grounded.
	. T . F
The tr must b	ransmit frequency of the RFU in a 450 Narrow Band configuration be set to a higher of the two frequencies in the frequency pair
	. T . F
Name	Date:

A. Repeater

EXHIBIT D: LXE Parts List and Drawing for the Reverse-TNC to N Cable Assembly(155145-0001)

Report Date: 15-0CT-1998 16:40

Page:

Bills of Material Consolidated Cost Report (USD)

Cost Type: Revision Date: Alternate BOM: 15-OCT-98 12:00 Frozen

Level

Assembly: 6430A053TYPEN Op Item/ Seq Cost Element 10 155145-0001 Overhead CABLE ASSY RINC TO TYPE "
WIRER WIRING
PRODUCTION WIRING Description/ Sub-Elem CABLE, RINC TO TYPE N Department Rev Buy W Last Make Buy Include in Rollup Yes Based on Rollup Yes Yes Asset/Costed ö Phtm Basis Item Res value Yield/ USD EA HRS UOM Rate or Amount Basis Factor Rate or Amount Quantity/ 0.19 Shrink/ Extended Qty/ 1.00 0.00 Category: 0001 0.19 2.20 1.00 Item Unit Cost/ Res Unit Cost 18.82832 9.87000 Extended Cost UOM: 1.84569 4.06052 ΕA

	Material Ove	910034 0004
	Material Over HANDLG OHD	
	Buy	
	No	
	Yes. No	
	Item Ttl value USD	
	BX	
	8.30 0.07	
	0.00 1.00 8.30	
	1.00 8.30 0.07	
!	8.86025	
27.81667	8.30000 0.56025	

758438-2101

CONN, TYPE "N"

RG142 BULK

m

Buy

No

Yes

No

Item Ttl value

USD

6.25

1.00

1.00 6.25 0.07

6.67188

6.25000 0.42188

0.00

Material Over Material

HANDLG OHD

Material Over

HANDLG OHD

730120-0208 Material Over

NUT, N TYPE CONN

m

Buy

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Yes

No

Ttl value

0.07

0.00 0.00 0.12 0.00 1.00

0.07

1.00

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Tt1

value

Item

USD USD

0.12

1.00 0.12 0.07

HANDLG OHD

Material

HANDLG OHD

723565-8727

WASHER, N TYPE CONN CABLE, RINC TO TYPE N

W W

Buy

No Yes

Yes Yes

No No

Make

Material Material Over

6430A053TYPEN

Material Over Material

HANDLG OHD

422274-0175

CBL, COAX RG142 M17/60-RG B

Buy

No

Yes

No

FΤ

Ttl value Item

USD

1.07

EΑ

0.00 1.00 0.00 1.85

1.00

18.82832

0.12810

0.12000 0.00810

2.50 2.68 0.07

1.14223

2.67500 0.18058

758302-2101

CONN, RTNC PLUG RG-142

W

Buy

No

Yes

No

ΕA

Item Tt1

value

USD ΕA

3.18

0.00

0.07

1.00

3.39465

3.18000 0.21465

Total	Overhead	Outside Processing	Material Overhead	Cost Element
18.84			12.11	Report
18.84	4.06	1.85 0.00	12.11 0.82	Standard Cost
0.00	0.00	0.00	0.00	Difference
100.0	0.0	0.0	0.0	Percent

This cost may include this level material, material overhead or routing costs. This cost includes previous levels not displayed on the report.

Cost Type: Frozen
Revision Date: 15-OCT-98 12:00
Alternate BOM:

Report Date: 15-OCT-1998 16:40

Page:

2

Bills of Material Consolidated Cost Report (USD)

\*\*\*\*\* End of Report \*\*\*\*



