



T1 Remote Module Installation

Link Wireless Telephone System
Link 3000 MCU

Part Number: 72-0059-06
Issue E

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T1 Remote Module Installation

Link WTS

Link 3000 MCU

System Documentation

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|---|

Note concerning the Master Control Unit:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note concerning shielded cable:

SpectraLink recommends the use of shielded cable for all external signal connections in order to maintain FCC Part 15 emissions requirements.

Note concerning the Wireless Telephone and Base Stations:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING Changes or modifications to this equipment not approved by SpectraLink Corporation may cause this equipment to not comply with part 15 of the FCC rules and void the user's authority to operate this equipment.

WARNING SpectraLink products contain no user-serviceable parts inside. Refer servicing to qualified service personnel.

UL Information



This symbol on the nameplate means the product is listed by Underwriter's Laboratories, Inc. It is designed and manufactured to meet rigid U.L. safety standards against X-radiation, fire, casualty, and electrical hazards.

The following are statements required for UL certification, related to safety procedures that must be adhered to during installation.

Follow these general precautions while installing telephone equipment:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

When installing Base Stations outside or in buildings other than the one containing the System Controller, take the following precaution:

If wiring for a Base Station exits a building—whether to reach an outdoor Base Station location or to reach a Base Station in another building—the wiring must be protected at both ends by a Quick Clip Fuse from Illinois Tool Works, Linx Division, model number SCP-2X2. The Quick Clip Fuse replaces the bridging clips on the 66 blocks for all four connections to the non-internal Base Station.

FCC Information

The Master Control Unit Complies with Part 68, FCC Rules

FCC Registration Numbers:

Link 3000: IYGUSA-7385Q-PX-T

Ringer Equivalence:

Link 3000: 0.3B

SpectraLink Corporation

Link 3000

Made in the USA

This equipment complies with Part 68 of the FCC Rules. On the back of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, this information must be given to the telephone company.

This equipment uses RJ-21 connectors.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all, areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If your telephone equipment causes harm to the telephone network, the telephone service may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact SpectraLink Corporation for information on obtaining service or repairs.

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The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. There are no user serviceable parts in this equipment.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Industry Canada (IC) Notice

Notice:

The Industry Canada (IC) label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational, and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by a user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides as indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices.

REN 0.3B

Approval Numbers:

Link 3000: 2128-9508 A

Warranty and Repair Service Center:

SpectraLink Corporation
5755 Central Avenue
Boulder, CO 80301
303-440-5330

DOC Spread Spectrum certification

| | | |
|--------------------|-----------|------------|
| Base Station | Cert. No. | 2128-K1373 |
| Wireless Telephone | Cert. No. | 2128-K1374 |

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1. About This Document

This document explains installation of the SpectraLink Link Wireless Telephone System (Link WTS, MCS300) Remote T1 Module. The installation process connects the Link 3000 MCU Primary Shelf in one location with an Expansion Shelf in a remote location, via T1 facilities.

1.1 Contacting SpectraLink

SpectraLink wants every customer to have a successful installation. Please refer questions to our **Customer Support Hotline at (800) 775-5330**. The Hotline is open Monday through Friday, 7:00 AM to 6:00 PM Mountain Time.

1.2 Icons Used in this Document

This manual uses the following icons and conventions.



Caution! Follow these instructions carefully to avoid danger.



Note these instructions carefully.

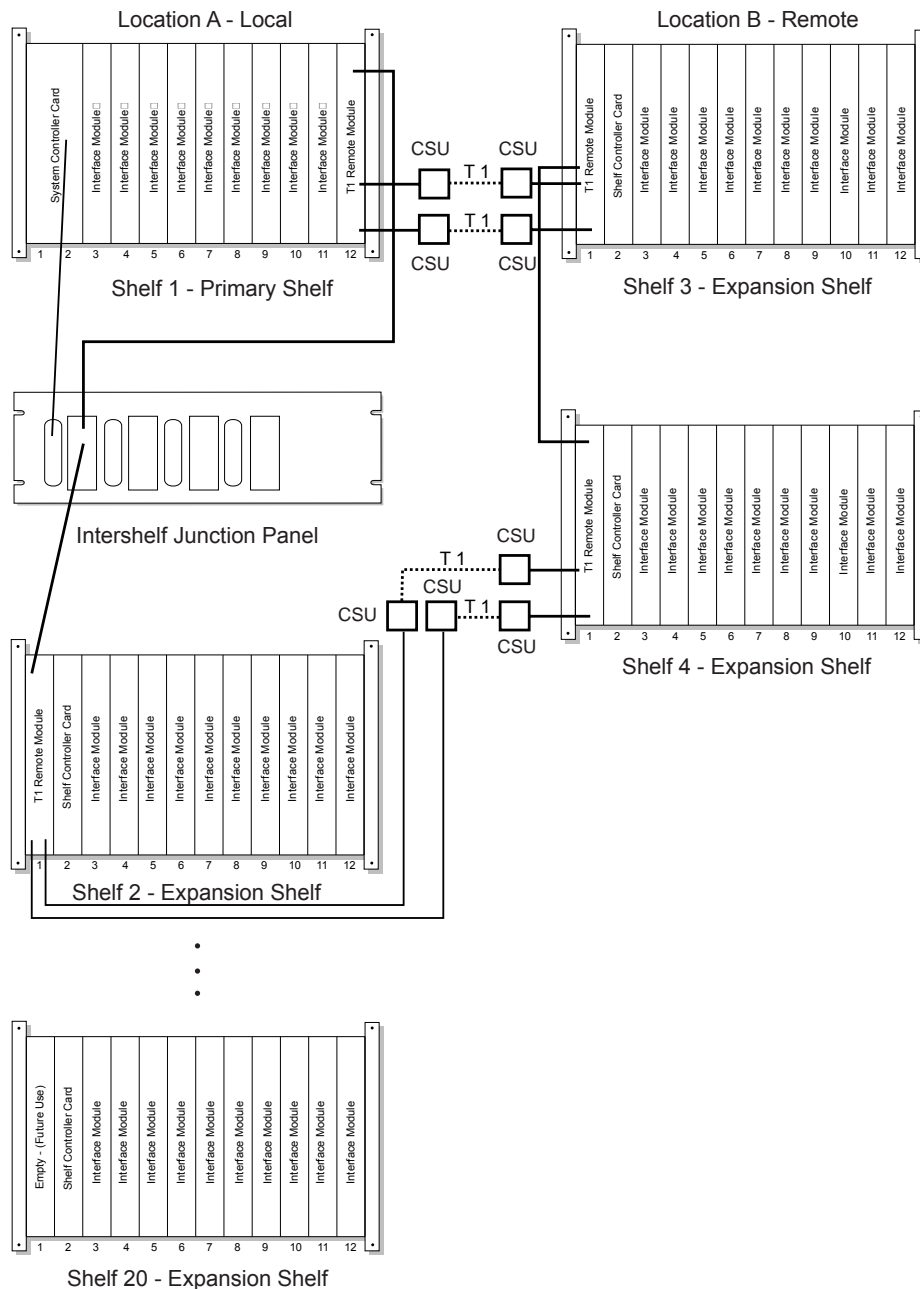
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This typeface indicates a key, label, or button.

1.3 Remote Installation Overview

Networking the Link WTS allows installation of expansion shelves at remote locations. T1 circuits are used to provide the connection from the System Controller shelf to each Remote Expansion shelf. As many as 19 expansion shelves may be supported by the system, and up to 18 of these shelves may be installed in remote locations from the System Controller shelf. The Link WTS (local site and remote site shelves) is administered as a single system.

The following diagram shows an overview of a Link WTS with shelves at both a local and remote site.



1.4 Remote Installation Steps (Overview)

Follow these steps to install the T1 Remote Module. Detailed instructions for each of these steps are contained in this document and other relevant documents in the Link 3000 MCU System Documentation.

1. Prepare site and check components.
2. Install T1 Remote Module at the local site (location where the Primary Shelf is located.)
3. Connect T1 Remote Module at the local site to the Intershelf Junction Panel and T1 facilities.
4. Install Expansion Shelf at remote site.
5. Install T1 Remote Module, Shelf Controller, and Interface Modules at remote site. Note that GPS timing may be required when remote and main shelves are within 600-800 feet of one another.
6. Connect T1 Remote Module at the remote site to the Shelf Controller and T1 Facilities.
7. Install any additional Expansion Shelves at remote site, and connect Expansion Shelves at the site.
8. Connect RJ-21 cables for telephone lines and Base Stations to Interface Modules at remote site.
9. Configure remote system and register Wireless Telephones.

2. Site Preparation

The following steps must be completed before installing the system hardware. If the steps are not already completed refer to each individual section for details.

1. At the local site, install and test Primary Shelf and Expansion Shelves. Refer to *Link WTS – Link 3000 MCU: Installation (72-0059-01)* for information.
2. At the remote site:
 - 2.1 Install a two pair cable to each Base Station as designated on the building floorplans.
 - 2.2 Terminate the Base Station wiring with RJ-45 crimp-on plugs at the designated Base Station locations.
 - 2.3 Terminate the Base Station wire at the appropriate cross-connect demarc blocks.
 - 2.4 Terminate the analog or digital phone extensions from the phone system at the appropriate cross-connect demarc block, and label the block.

2.1 Required Materials Provided by Customer

- Rack** - the shelves are designed to fit into a 19 inch mounting rack. Each shelf measures 15” high by 19” wide by 9” deep, and weighs approximately 35 pounds fully loaded. See Prepare Location for Shelves, in the *Link WTS – Link 3000 MCU: Installation* document.
- Backboard space** – as an alternative to rack mounting, the shelves can be wall mounted to ¾” plywood securely screwed to a wall.
- Screws** – required to mount the shelves to the wall, or to secure it in the rack. For wall mount, six #10-5/8” panhead wood screws (or similar device) are required. For rack mount, screws required are determined by the rack requirements; typically 10-32 or 1/4-20.
- RJ-45 Cable** - for network clocked T1 facilities, an RJ-45 cable is required to connect the designated Master Clock T1 Module to the Intershelf Junction Panel.

2.2 T1 Configuration Requirements

T1 circuits will connect expansion shelves directly to the System Controller shelf via the SpectraLink provided Intershelf Junction Panel. The Intershelf Junction Panel is always co-located with the system controller shelf.

The following configuration requirements apply to the T1 lines connecting the Link 3000 MCU local and remote shelves.

- All T1 circuits for networking the Link WTS must be Extended Superframe Format (ESF).
- T1 circuits must be a full T1 (not fractional).
- T1 circuits must be 64Kbps (not 56Kbps) per channel.
- Line coding for the T1 circuits must be Bipolar 8-bit Zero Substitution (B8ZS).
- T1 circuits should be terminated as close to the Link 3000 MCU shelves as possible, at both the System Controller site and the Expansion Controller site(s).
- One or two T1 circuits are required per remote Link 3000 MCU Expansion Shelf.
 - One T1 circuit is required for the first five Interface Module cards in a Remote Expansion shelf.
 - Two T1 circuits are required for 6 or more Interface Module cards installed in the remote expansion shelf. Note that 1 - 10 Interface Module cards may be installed in any expansion shelf.
- The T1 circuit must be activated and verified to be in proper working order at least one week in advance of the networked Link WTS scheduled installation.

Channel Service Unit (CSU)

A Channel Service Unit (CSU) must be installed at each end of the T1 circuit.

- The ADC Kentrox T-SERV II or other comparable CSU models are satisfactory.
- From the CSU, the T1 circuit must be provided to the SpectraLink system on an RJ-48C modular connector.
- The CSU must have an independent power supply, per manufacturer specifications.

2.3 Check Components

The following items should be at the installation site.

- Link 3000 MCU Expansion Shelves** – (MCS300) – the number of shelves varies depending on the size of the system.
- Grounding Strap** – (in the Link WTS Administration Kit, MKA320) – to protect cards from electrostatic discharge.
- Expansion Shelf Controller Card** – (CSC300) - one card for each Expansion Shelf. This card is installed in Slot 2.
- T1 Remote Module**– (CRC301) - one card for the remote site and one card for the local site for EACH remote shelf.
- Cables** – two 12 foot RJ-45 cables with each Expansion Shelf Controller (CSC300). RJ-45 cable to connect multiple shelves (one for each shelf).
- Interface Modules** – the correct number and type of Interface Modules to connect the Wireless Telephones and the Base Stations to the telephone system. Interface Modules can support analog (CPA316), Universal digital (CPU316), Mitel (CPM316), Executone (CPB316), Panasonic (CPP316), and select four-wire (CPF316) interfaces.

3. Install T1 Remote Module at Local Site

Before installing the hardware at the remote site, the Primary shelf at the local site must have a T1 Remote Module (CRC301) installed. Install one Remote Module for each remote shelf to be installed.

Slide the Remote Module into **slot 1** or **slot 3-12** of any shelf, until the card clicks into place. Tighten the screws at the top and bottom of the card to secure it. The Remote Module can go in any slot, in any shelf of the system, except slot 2.

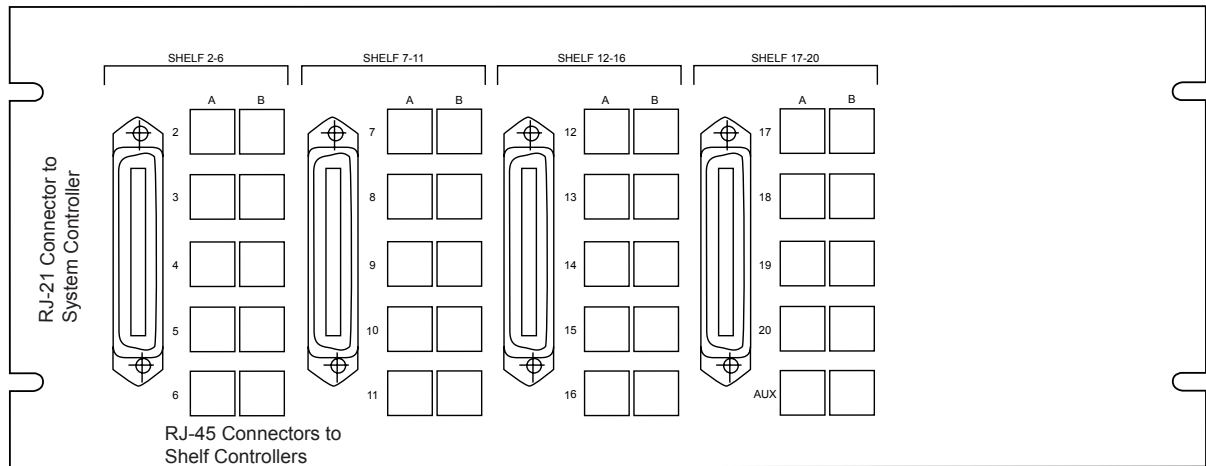


Cards contain components that may be damaged by electrostatic discharge. Before handling any of the cards, the installer must attach the grounding strap (included in the Administration Kit) to his or her wrist, and attach the other end of the strap to ground. Only handle the cards by their edges. Do not touch connector contact areas, do not lift cards by any of the components, and do not lay cards down on their component sides. When laying a card down, place it component side up on top of the anti-static bag in which it was shipped.

Connect Intershelf Junction Panel

Connect two RJ-45 cables from the System Controller ports in the T1 Remote Module to the corresponding shelf ports on the Intershelf Junction Panel (JPI300). Be sure the RJ-45 cable in Connector A on the Remote Module goes to the A connector on the JPI300, and that Connector B goes to the B Connector.

The following diagram outlines the ports on the JPI.



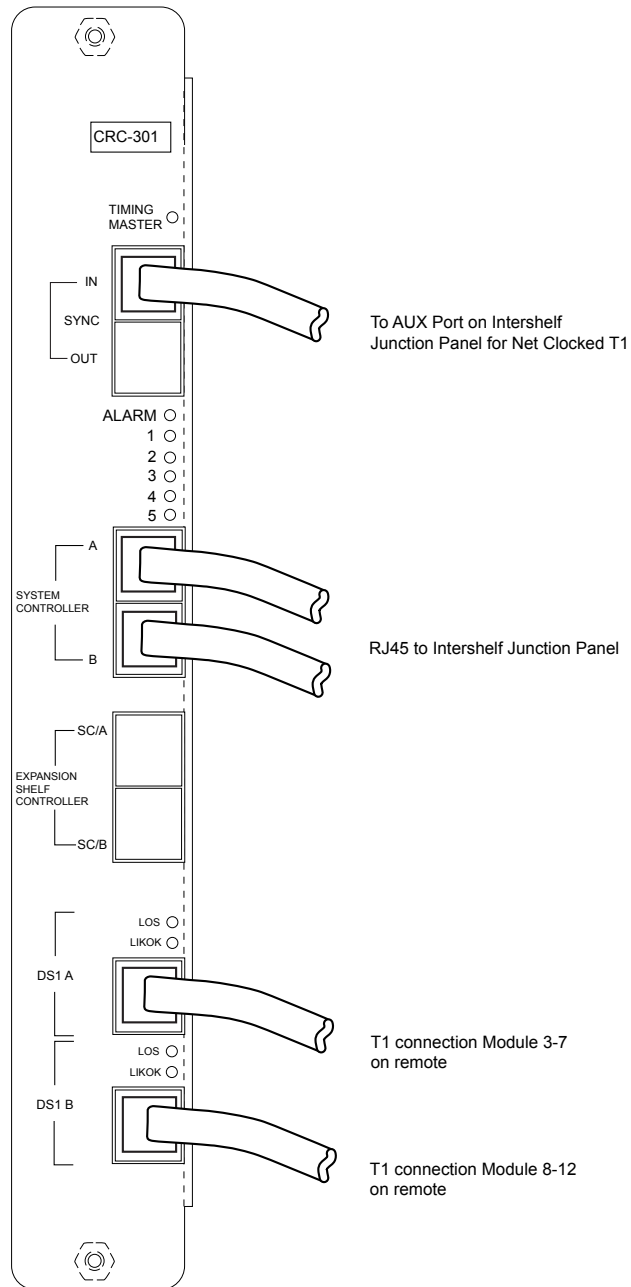
Network Clocked T1 Facilities

If the T1 facilities are Network Clocked, one T1 Remote Module must be designated as the Master Clock Source. Connect the **Sync IN** port on this T1 Remote Module to **AUX** port **A** on the Intershelf Junction Panel. Note, this shelf must also be designated as the Master Clock in the system configuration.

Connect T1 Facilities

Connect the RJ48C jack from the **CSU** port at the local end to the **DS1 A** and **DS1 B** ports on the T1 Remote Module. Port A controls slots 3-7 on the remote module at the far end. Port B controls slots 8-12.

The following diagram shows the T1 Remote Module connections at the LOCAL site.



4. Install System at Remote Site

4.1 Survey Site

Check the site to be sure pre-installation work has been completed correctly. This includes:

- Location chosen for the shelves is adequate.
- Rack (if rack mounted) is properly secured or backboard (if wall mounted) is properly prepared.
- Power is available.
- Wiring to Base Station locations has been pulled and correctly terminated.
- Phone lines for the Wireless Telephones are installed and properly terminated.
- Telephone system administrator is available to program the existing telephone system.

4.2 Install Shelves

Rack Mount

To install shelves in the rack, slide the shelves into the rack and secure them to the rack using eight screws, 1/4 inch minimum length.

Wall Mount

At this point in the installation process, there should be a backboard securely fastened to the wall and mounting screws partially inserted into the backboard. See *Link WTS – Link 3000 MCU: Installation* for more information.

To attach the shelves to the wall:

1. Remove all cards from the shelf. Do not mount the shelf with cards installed.



Cards contain components that may be damaged by electrostatic discharge. Before handling any of the cards, attach the grounding strap (included in the Administration Kit) to your wrist, and attach the other end of the strap to ground. Handle cards only by their edges. Do not touch connector contact areas. Do not lift cards by any of the components. Do not lay cards down on their component sides. When laying a card down, place it component side up, on top of the anti-static bag in which it was shipped.

2. Position the MCS300 so that the six mounting screws are aligned with the six keyhole openings in the back of the shelf.
3. Slide the shelf down onto the screws to lock the shelf into place. Check that all six screws are properly locked.
4. Tighten all six screws fully.



Do not install cards until power is connected.

4.3 Connect Power to Shelves

SpectraLink recommends that a licensed electrician install the –48V DC power supply and connect power to the shelves.

See *Link WTS – Link 3000 MCU: Installation*, Connect Power to Shelves, for more information.

4.4 Install Cards

The shelf diagram below shows a fully loaded Expansion Shelf. Any type of Interface Module can be installed in slots 3-12.



Cards contain components that may be damaged by electrostatic discharge. Before handling any of the cards, the installer must attach the grounding strap (included in the Administration Kit) to his or her wrist, and attach the other end of the strap to ground. Only handle the cards by their edges. Do not touch connector contact areas, do not lift cards by any of the components, and do not lay cards down on their component sides. When laying a card down, place it component side up on top of the anti-static bag in which it was shipped.

Install T1 Remote Module

1. Slide the T1 Remote Module into Slot 1 of the Expansion Shelf, until the card clicks into place. Tighten the screws at the top and bottom of the card to secure it.

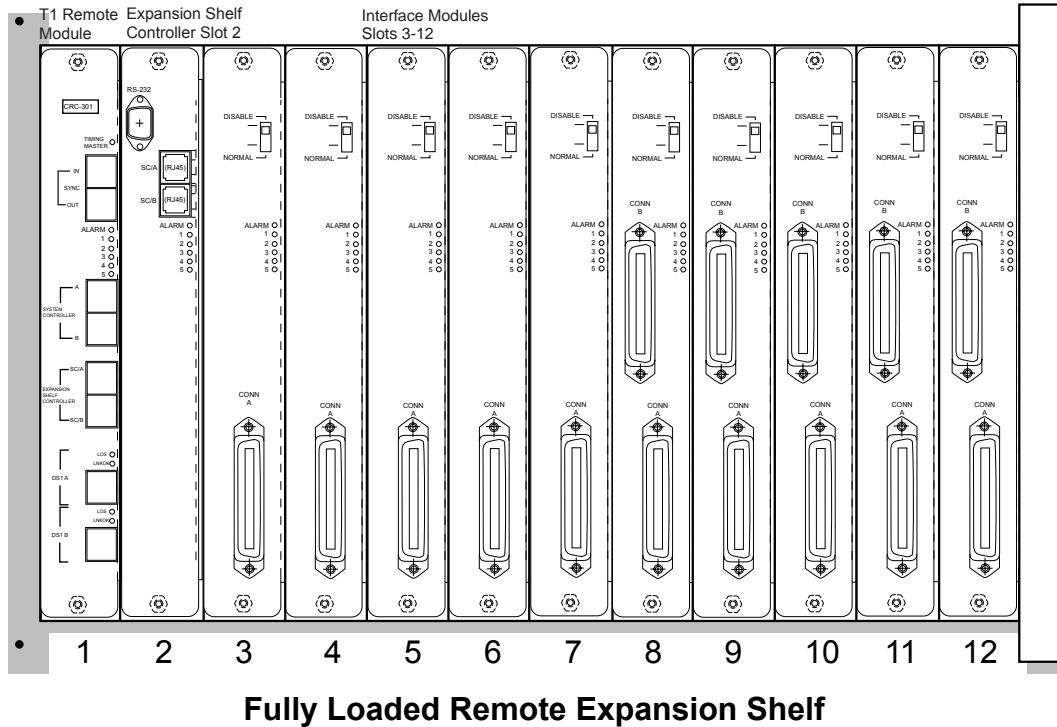
Install Expansion Shelf Controllers (CSC300)

2. Slide the Expansion Shelf Controller Card into Slot 2 of each shelf (2-20), until the card clicks into place. Tighten the screws at the top and bottom of the card to secure it.
3. Slide the Interface Modules into Slots 3-12 of each shelf (2-20) until the card clicks into place.

Install Interface Modules (CPx316)

4. Slide the first Interface Module into Slot 3 of the Primary Shelf, until the card clicks into place. Tighten the screws at the top and bottom of the card to secure it.
5. Slide additional Interface Modules into their slots. Slots can be left empty if desired.

The following diagram shows a sample fully loaded Remote Expansion Shelf.



Fully Loaded Remote Expansion Shelf

4.5 Connect Cables to T1 Remote Module

Connect T1 Remote Module to Expansion Shelf Controller

1. Using an RJ-45 cable, connect the Expansion Shelf Controller **Port SC/A** in the T1 Remote Module (slot 1) to the **SC/A** port on the Expansion Shelf Controller (slot 2).
2. Using an RJ-45 cable, connect **SC/B** in the T1 Remote Module to **SC/B** in the Expansion Shelf Controller.

Connect T1 Facilities

3. Connect the T1 (**CSU**) port to the **DS1 A** and **DS1 B** ports on the T1 Remote Module. Port A controls slots 3-7. Port B controls slots 8-12.

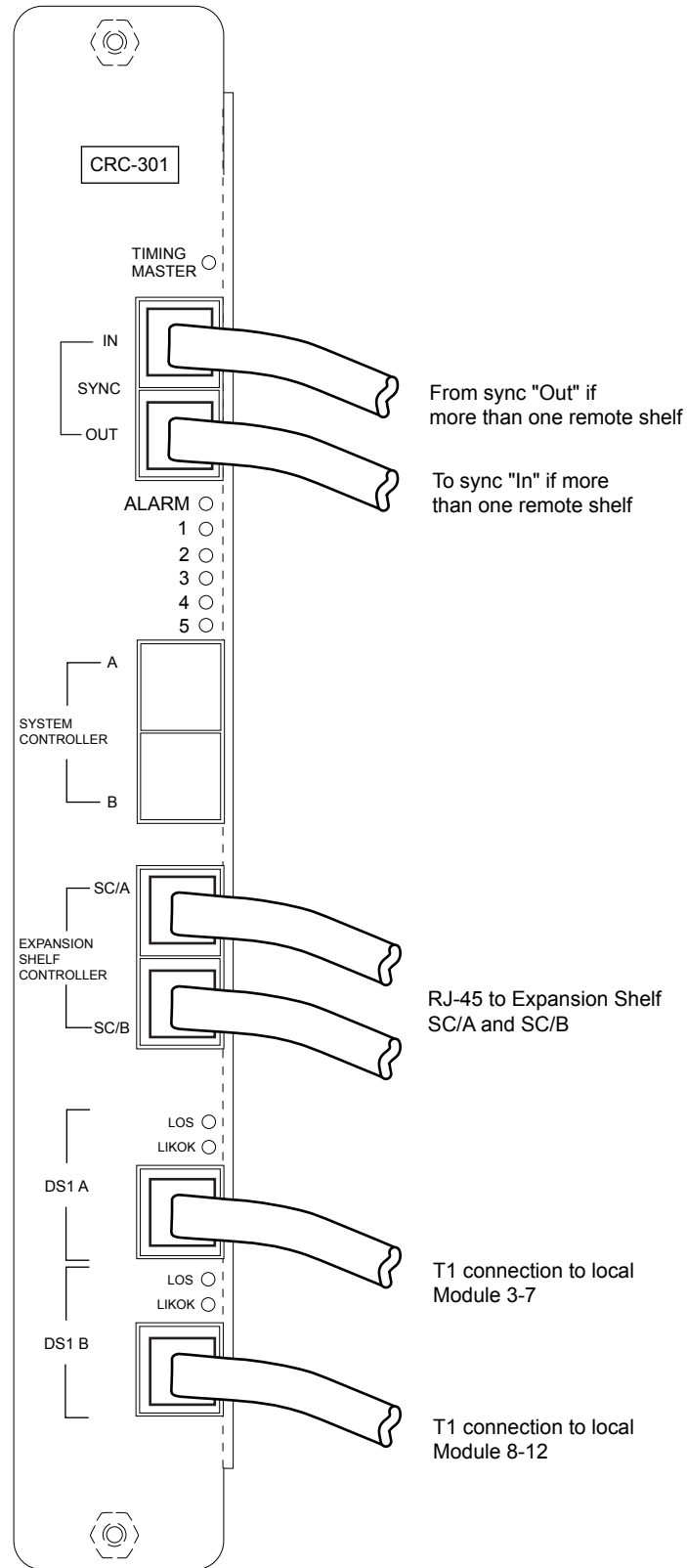
4.6 Connect Multiple Remote Shelves

If the remote site consists of more than one remote shelf, the shelves must be connected to each other.

Connect the IPC cable from the **Sync OUT** Port of the T1 Remote Module on the first shelf to the **Sync IN** Port of the T1 Remote Module on the next shelf. Repeat until all shelves are connected.

Note that the **IN** port of the first module is not used.

The following diagram shows the T1 Remote Module connections at the REMOTE site.



4.7 Connect Demarc Block RJ-21 Cables to Interface Modules

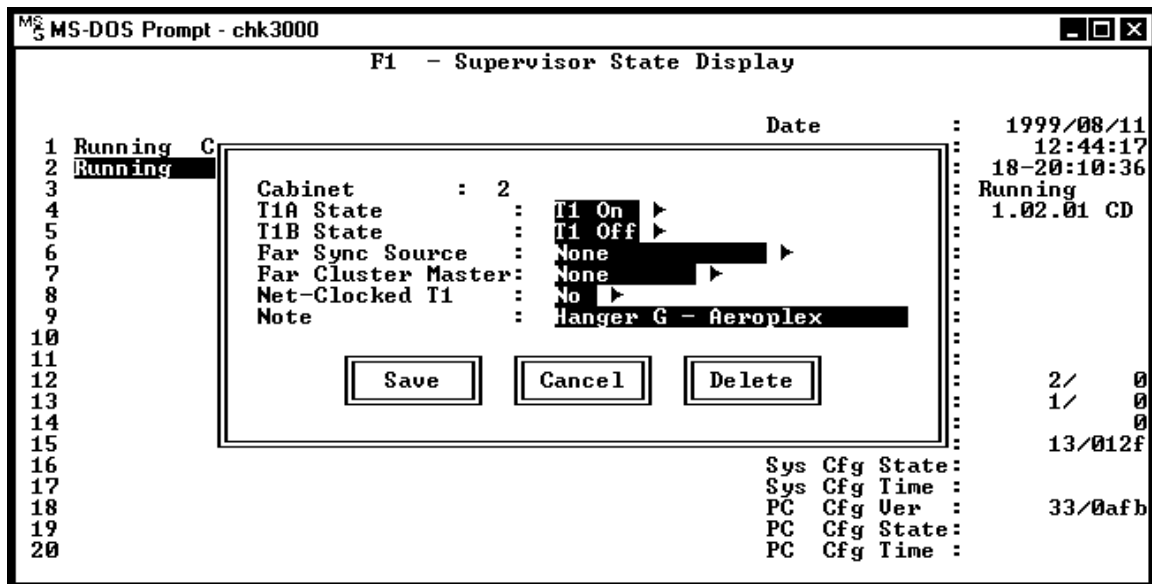
Connect the male RJ-21 connector from the appropriate demarcation block to the designated RJ-21 connector (**A** or **B**) on each Interface Module. Secure the cables using the keeper. Dress the cables by wire wrapping the cable at the rear of the shelf.

5. Configure Remote System

Use the Operator's Console to enter configuration information for the Remote Expansion Shelves.

5.1 Configure Remote Shelf

1. From the Operator's Console, select F1, **Supervisor State Display**.
2. Use the arrow keys to highlight the number of the Remote Shelf to be added (2-20), and press Enter.
3. Select **Remote Card Options**.
4. Select **Edit Remote Cabinet Configuration**. The following screen displays.



5. Enter the configuration information for the remote shelf (cabinet). Use the right arrow or mouse to display options. Use the arrow keys to highlight an option, and press Enter to select the highlighted option.

T1 A State: select T1 On to turn on T1 A.

T1 B State: select T1 On to turn on T1 B.

Far Sync Source: Leave the default (**None**) or select **External Port** if the far sync source is an external port.

Far Cluster Master: Leave the default (**None**) if there is only one Expansion Shelf at the remote location. If there is more than one Expansion Shelf at the remote location, select a Cabinet (**2-20**) as the master shelf for this location.

Net Clocked T1: Leave the default (**No**) if the T1 is not Net Clocked, select **Yes** if it is.

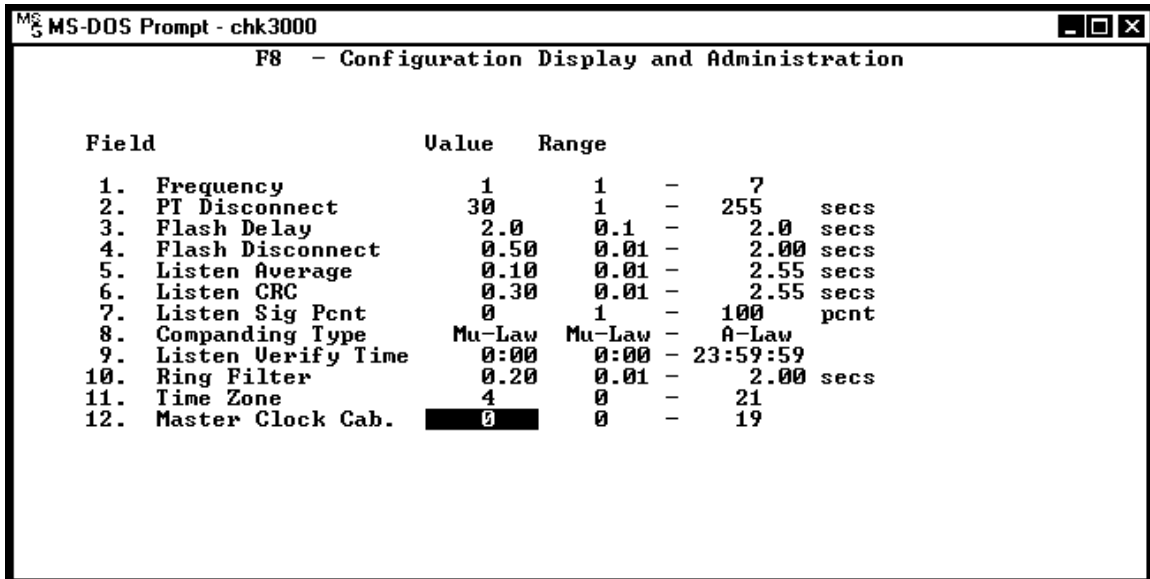
Note - enter the name or location of the remote T1 module.

6. Select **SAVE** to save the information.

5.2 Master Clock Configuration

If the T1 facilities are Network Clocked, one shelf must be designated as the Master Clock Source.

1. From the Operator's Console, select F8, **Configuration Display and Administration**. The following screen displays.



| Field | Value | Range |
|-----------------------|--------|------------------|
| 1. Frequency | 1 | 1 - 7 |
| 2. PT Disconnect | 30 | 1 - 255 secs |
| 3. Flash Delay | 2.0 | 0.1 - 2.0 secs |
| 4. Flash Disconnect | 0.50 | 0.01 - 2.00 secs |
| 5. Listen Average | 0.10 | 0.01 - 2.55 secs |
| 6. Listen CRC | 0.30 | 0.01 - 2.55 secs |
| 7. Listen Sig Pcnt | 0 | 1 - 100 pcnt |
| 8. Companding Type | Mu-Law | Mu-Law - A-Law |
| 9. Listen Verify Time | 0:00 | 0:00 - 23:59:59 |
| 10. Ring Filter | 0.20 | 0.01 - 2.00 secs |
| 11. Time Zone | 4 | 0 - 21 |
| 12. Master Clock Cab. | 0 | 0 - 19 |

2. Select Field **12. Master Clock Cabinet**.
3. Enter the shelf number of the Master Clock shelf.
4. Select **SAVE** to save the information.

5.3 Test System

The system should now be tested to ensure that it is functioning correctly. See Test System in the *Link WTS – Link 3000 MCU: Installation* manual for more information.

6. Site Certification

The installer should not leave the site before contacting SpectraLink to perform remote install verification.

Before leaving the location where the Primary Shelf is installed, the installer must complete the following items:

- From the Operator's Console, copy the PCS.CFG file to diskette. From the Operator's Console, select F1 (Supervisor State) then select Dump Config to PCS.CFG. See the *Operator's Console* document for more information.
- Give the system administrator a map of the system showing the final Base Station locations at local and remote sites.
- Perform end user and administrative training.
- Get a signature on the acceptance document. This document confirms that the installation has been correctly carried out, that the coverage area is correct, and that the client's personnel have been trained.

The installation is not complete until all certification steps have been performed. Wireless Telephones should not be handed out until the site has been certified.

7. Installation Forms

This section contains the following forms:

- Base Station Locations
- Extension Assignments
- Site Preparation Checklist
- Customer Acceptance Form

Copy these forms as needed. Be sure to maintain completed forms for future reference.

7.1 Base Station Location Form

Shelf Number: _____ Interface Module: _____

| Base Station # | Location (e.g.: building, floor #, detailed description) | Interface Module Circuit # |
|----------------|---|-------------------------------|
| Base Station 1 | | 1 |
| Base Station 2 | | 2 |
| Base Station 3 | | 3 |
| Base Station 4 | | 4 |
| Base Station 5 | | 5 |
| Base Station 6 | | 6 |

Shelf Number: _____ Interface Module: _____

| Base Station # | Location (e.g.: building, floor #, detailed description) | Interface Module Circuit # |
|----------------|---|-------------------------------|
| Base Station 1 | | 1 |
| Base Station 2 | | 2 |
| Base Station 3 | | 3 |
| Base Station 4 | | 4 |
| Base Station 5 | | 5 |
| Base Station 6 | | 6 |

Shelf Number: _____ Interface Module: _____

| Base Station # | Location (e.g.: building, floor #, detailed description) | Interface Module Circuit # |
|----------------|---|-------------------------------|
| Base Station 1 | | 1 |
| Base Station 2 | | 2 |
| Base Station 3 | | 3 |
| Base Station 4 | | 4 |
| Base Station 5 | | 5 |
| Base Station 6 | | 6 |

7.2 Extension Assignments Worksheet

Shelf: _____ Interface Module: _____

| Phone # | Ext. # | Name | Interface Module Circuit # | Comment | Wireless Telephone Serial # |
|----------|--------|------|----------------------------|---------|-----------------------------|
| Phone 1 | | | 1 | | |
| Phone 2 | | | 2 | | |
| Phone 3 | | | 3 | | |
| Phone 4 | | | 4 | | |
| Phone 5 | | | 5 | | |
| Phone 6 | | | 6 | | |
| Phone 7 | | | 7 | | |
| Phone 8 | | | 8 | | |
| Phone 9 | | | 9 | | |
| Phone 10 | | | 10 | | |
| Phone 11 | | | 11 | | |
| Phone 12 | | | 12 | | |
| Phone 13 | | | 13 | | |
| Phone 14 | | | 14 | | |
| Phone 15 | | | 15 | | |
| Phone 16 | | | 16 | | |

7.3 Site Preparation Checklist

If upon arrival the SpectraLink installer determines that the pre-installation work has not been completed correctly, the installer has two options: 1) the installer can leave the site and reschedule the installation when the action items have been completed or corrected, or 2) the installer can assist in preparing the site, and thus spend additional time installing the system. Because of the additional cost incurred by SpectraLink in executing either option, the customer will be billed for the additional time at our standard hourly rate plus expenses.

Please be sure the following items are completed.

- MCU location prepared. Typically the MCU is installed in the telephone equipment room. This location must have sufficient rack or backboard space and power available.
- Two-pair wires are run to each of the Base Station locations as designated on the building floor plans. Use Level 3 cable for lengths up to 3,500'; Level 4 for lengths up to 6,000'.
- The Base Station cables are terminated with RJ-45 crimp-on plugs at the designated locations.
- One (or two) cross-connect block(s) are installed for every Interface Module and connected with a 25-pair Telco cable terminated with an RJ-21 male connector at the MCU location.
- The Base Station cables are terminated at the appropriate cross-connect blocks.
- Analog or digital ports, one per Wireless Telephone, from the switch are terminated at the appropriate cross-connect block and the block is labeled with the extensions.
- A dedicated dial line (MB) is available with an RJ-11 jack for the diagnostic modem.
- An IBM-compatible PC is available to serve as the Operator's Console for system administration.
- A system administrator is designated for the SpectraLink system. This person should be present for the installation. The SpectraLink installer will provide system training to the system administrator on the day following the installation.

When this checklist is completed please sign, date, and fax to:

(Install Coordination 303-449-7016)

Signature: _____ Date: _____

If you have any questions regarding the installation procedure, please call:

SpectraLink Customer Support Hotline 1-800-775-5330

(Monday through Friday, 7 AM to 6 PM MT).

7.4 Customer Acceptance Form

Customer Name: _____

Lease number (if applicable): _____ Schedule number (if applicable): _____

This document certifies that _____, acting as the representative of _____, accepts the installation of the SpectraLink Wireless Telephone System as set forth on schedule number _____ completed on _____, 200_.

A complete installation includes but is not limited to the following items.

1. The Master Control Unit (MCU) was installed.
2. All the Base Stations were installed.
3. Conversation was verified on all Base Stations.
4. Conversation was verified on all Wireless Telephones.
5. Hand-off was verified on all Base Stations.
6. Coverage was confirmed for the areas specified at time of facilities analysis.
7. Software was installed on customer's PC.
8. A facilities map of the areas of coverage was given to the customer.
9. Training class was given on use of Wireless Telephones.
10. Administrative training was given to at least one user.

The following additional parts that were not part of the original order were installed:

| Item | Part # | Description & Serial Number | Qty |
|----------|--------|-----------------------------|-----|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

The terms and conditions of original Quotation and Sales Agreement apply to all equipment listed above.

_____ I accept the installation of the SpectraLink system as complete.

_____ I decline to installation of the SpectraLink system because:

Customer Signature: _____ Date: _____

Customer Name (Printed): _____

Installer's Signature: _____ Date: _____

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