Cisco Compact EGC Fiber Deep Node Type 90100 and 90300

Installation and Operation Guide

For Your Safety

Explanation of Warning and Caution Icons

Avoid personal injury and product damage! Do not proceed beyond any symbol until you fully understand the indicated conditions.

The following warning and caution icons alert you to important information about the safe operation of this product:

You may find this symbol in the document that accompanies this product. This symbol indicates important operating or maintenance instructions.

You may find this symbol affixed to the product. This symbol indicates a live terminal where a dangerous voltage may be present; the tip of the flash points to the terminal device.

You may find this symbol affixed to the product. This symbol indicates a protective ground terminal.

You may find this symbol affixed to the product. This symbol indicates a chassis terminal (normally used for equipotential bonding).

You may find this symbol affixed to the product. This symbol warns of a potentially hot surface.

You may find this symbol affixed to the product and in this document. This symbol indicates an infrared laser that transmits intensity-modulated light and emits invisible laser radiation or an LED that transmits intensity-modulated light.

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

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Important Rules for Safe Operation

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

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Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses ground(ing) for clarity, but it can be interpreted as having the same meaning as earth(ing).

Electric Shock Hazard

Because of the potential for higher humidity, the presence of moisture, the proximity to ground potential and the possibility that hazardous voltages may be present on network connected cables, there is a greater risk of electric shock when working with electronic equipment in the outdoor environment.

To minimize the likelihood and effect of electric shock, follow the instructions in this warning and the precautions below.

WARNING!

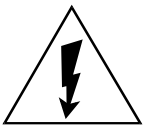
To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.

- Do not work in rain, fog or snow conditions
- Ensure equipment and cables are dry
- Wear shoes with soles made of insulated material e.g. rubber, vinyl, etc.
- When making electrical connections, work with one hand in your pocket and avoid accidental contact with grounded surfaces
- Use insulated tools to make electrical connections
- Make all other connections before connecting power to the equipment

Note to the Installer

Note to CATV System Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC (Section 54, Part I of the Canadian Electrical Code), that provides guidelines for proper grounding and, in particular, specifies that the CATV cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this product.

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

WARNING

TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

Equipment Placement

> **WARNING:**
>
> **Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.**

To protect against equipment damage or injury to personnel, comply with the following:

- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.

Outdoor Equipment Placement

Cisco equipment intended for outdoor installation is designed to be water-resistant, not water-proof. To protect against equipment damage or injury to personnel, install outdoor equipment so that it is:

- Protected from rain or accumulations of snow as much as possible
- Not subject to direct water jets from sprinkler systems or garden hoses
- Not subject to flooding
- Positioned with cable connectors on the underside to minimize water entry by gravity.

Outdoor Equipment Cabling

To protect outdoor equipment cables, comply with the following:

- Protect cables from chaffing and sharp edges when routing them through building walls or around corners
- Provide adequate support for cables to prevent strain or sagging
- Provide a low loop in the cable close to its connection point to the equipment to minimize water ingress and to provide strain relief for the connector
- Seal outdoor cable/connector joints against moisture ingress using silicone caulk or outdoor sealing tape.

Ventilation

> **WARNING:**
>
> **Avoid electric shock and fire hazard! Never push objects through the openings in this equipment. Foreign objects can touch dangerous voltage points or cause electrical shorts that can result in electric shock or fire.**

This equipment may have openings for ventilation that protect it from overheating. To ensure the reliability of this equipment, do not obstruct the openings

- Do not place other equipment, lamps, books, or other objects on top of this equipment.

- Do not place this equipment in any of the following locations.
  - On a bed, sofa, rug, or similar surface
  - Over a radiator or a heat register
  - In an enclosure, such as a bookcase or equipment rack, unless the installation provides proper ventilation

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:

WARNING: **Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.**

Cleaning the Equipment

Before cleaning this equipment, unplug it from the electrical outlet. Use a damp cloth to clean this equipment. Do not use a liquid cleaner or an aerosol cleaner. Do not use a magnetic/static cleaning device (dust remover) to clean this equipment.

Object and Liquid Entry

Never push objects of any kind into this equipment through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Do not expose this equipment to liquid or moisture. Do not place this equipment on a wet surface. Do not spill liquids on or near this equipment.

Overloading

Do not overload electrical outlets, extension cords, or integral convenience receptacles, as this can result in a risk of fire or electric shock. For equipment that requires battery power or other sources to operate, refer to the operating instructions for that equipment.

Lightning and Power Surges

To protect this equipment against damage from lightning storms and power-line surges, do the following:

- Disconnect the power cord from the grounded mains electrical outlet and disconnect the antenna or cable system under the following circumstances.
  - During lightning storms, or
  - When you are not using this equipment for an extended period
- Ground your antenna system to provide some protection against voltage surges and built-up static charge.

Power Sources

> ⚠ **WARNING:**
>
> **Avoid electric shock and fire hazard! Do not overload electrical outlet and extension cords. For equipment that requires battery power or other sources to operate, refer to the operating instructions for that equipment.**

- A label on this equipment indicates the correct power source for this equipment. Operate this equipment only from an electrical outlet with the voltage and frequency indicated on the equipment label.
- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- This equipment may have two power sources. Be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment if it will be unused for long periods of time.
- If you are uncertain of the type of power supply to your home or business, consult your local power company.

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

This equipment is equipped with either a 3-terminal (grounding-type) safety plug or a 2-terminal (polarized) safety plug. The wide blade or the third terminal is provided for safety. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Polarized Plug** - For a 2-terminal plug (a polarized plug with one wide blade and one narrow blade), insert the plug into a polarized mains, 2-terminal outlet in which one socket is wider than the other.

Note: If this plug cannot be fully inserted into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to replace the obsolete 2-terminal outlet.

Grounding Terminal

If this equipment is equipped with an external grounding terminal, attach one end of an 18-gauge wire (or larger) to the grounding terminal; then, attach the other end of the wire to a ground, such as a grounded equipment rack.

Safety Plugs (European Union)

- **Class II Mains Powered Equipment –** Provided with a 2-terminal AC inlet that may be connected by a 2-terminal power cord to the mains supply outlet. No connection to the protective ground is required as this class of equipment is provided with double or reinforced and/or supplementary insulation in addition to the basic insulation provided in Class I equipment.

Note: Class II equipment, which is subject to EN 50083-1, is provided with a chassis mounted equipotential bonding terminal. See the section titled **Equipotential Bonding** for connection instructions.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60471-5020 chassis icon (), the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

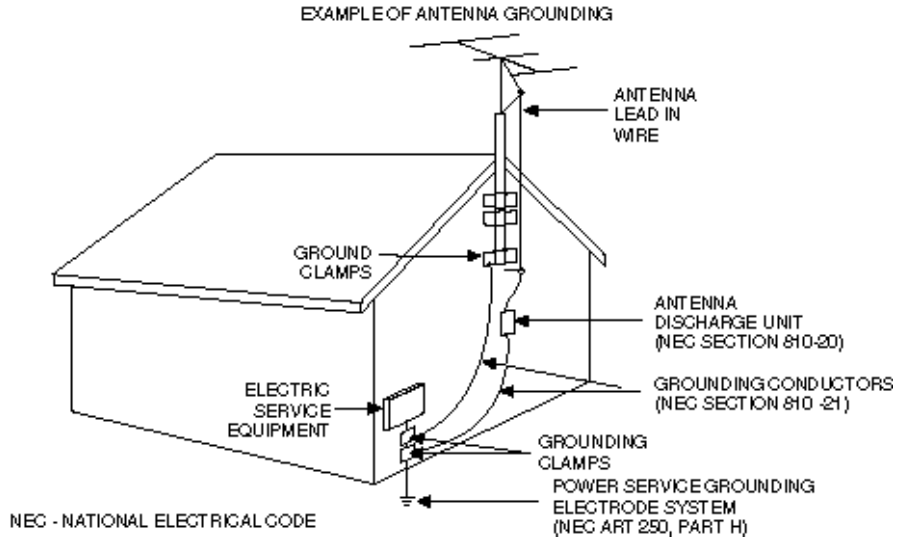
Outdoor Grounding System

If this equipment connects to an outdoor antenna or cable system, be sure the antenna or cable system is grounded. This provides some protection against voltage surges and built-up static charges.

Section 810 of the National Electric Code (NEC), ANSI/NFPA No. 70-1999, provides the following information:

- Grounding of the mast and supporting structure
- Grounding the lead-in wire to an antenna discharge unit
- Size of the grounding conductors
- Location of the antenna-discharge unit
- Connection to grounding electrodes
- Requirements for the grounding electrodes

For European Union countries, refer to CENELEC standard EN 50083-1 for grounding information.



Servicing

WARNING:

Avoid electric shock! Opening or removing the cover may expose you to dangerous voltages.

Do not open the cover of this equipment. Refer all servicing to qualified personnel only. Contact us for instructions.

Damage that Requires Service

For damage that requires service, unplug this equipment from the electrical outlet. Refer service to qualified service personnel when any of the following occurs:

- There is damage to the power cord or plug
- Liquid enters the equipment
- A heavy object falls on the equipment
- Operation is not normal (the instructions in this manual describe the proper operation)
- If you drop this equipment, or damage the cabinet of this equipment
- If this equipment exhibits a distinct change in performance

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

> **CAUTION:**
>
> **Avoid damage to this equipment! Adjust only what the operating instructions describe. Improper adjustment of controls may result in damage that may require extensive corrective work by qualified service personnel.**

Replacement Parts

When replacement parts are required, be sure the qualified service personnel has used parts specified by the Cisco or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that this equipment is in proper operating condition.

Electromagnetic Compatibility Regulatory Requirements

This equipment meets applicable electromagnetic compatibility (EMC) regulatory requirements. Refer to this equipment's data sheet for details about regulatory compliance approvals. EMC performance is dependent upon the use of correctly shielded cables of good quality for all external connections, except the power source, when installing this equipment.

- Ensure compliance with cable/connector specifications and associated installation instructions where given elsewhere in this manual.

Otherwise, comply with the following good practices:

- Multi-conductor cables should be of single-braided, shielded type and have conductive connector bodies and backshells with cable clamps that are conductively bonded to the backshell and capable of making 360° connection to the cable shielding. Exceptions from this general rule will be clearly stated in the connector description for the excepted connector in question.

- Ethernet cables should be of single-shielded or double-shielded type.
- Coaxial cables should be of the double-braided shielded type.

Modifications

This equipment has been designed and tested to comply with applicable safety, laser safety, and EMC regulations, codes, and standards to ensure safe operation in its intended environment. Refer to this equipment's data sheet for details about regulatory compliance approvals.

Do not make modifications to this equipment. Any changes or modifications could void the user's authority to operate this equipment.

Modifications have the potential to degrade the level of protection built into this equipment, putting people and property at risk of injury or damage. Those persons making any modifications expose themselves to the penalties arising from proven non-compliance with regulatory requirements and to civil litigation for compensation in respect of consequential damages or injury.

Accessories

Use only attachments or accessories specified by the manufacturer.

CAUTION:

Maintain electrical safety! Power-operated equipment or accessories that you connect to this equipment should bear the UL listing mark or CSA certification mark on the accessory itself, and should not be modified so as to defeat the safety features. This will help avoid any potential for electric shock or fire. If in doubt, contact qualified service personnel.

Mounting Accessories

CAUTION:

Use this equipment only with a cart, stand, bracket, table, or other mounting accessories that meet Cisco specifications. Carefully follow all instructions for proper mounting.

This product contains an infrared laser that transmits intensity-modulated light and emits invisible radiation.

Warning: Radiation

WARNING!

- **Avoid personal injury! Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.**
- **Avoid personal injury! The laser light source on this equipment emits invisible laser radiation. Avoid direct exposure to the laser light source.**
- **Avoid personal injury! Viewing the laser output with optical instruments (such as eye loupes, magnifiers, or microscopes) within a distance of 100 mm may pose an eye hazard.**

- Do not apply power to this equipment if the fiber is unmated or unterminated.

- Do not stare into an unmated fiber or at any mirror-like surface that could reflect light that is emitted from an unterminated fiber.
- Do not view an activated fiber with optical instruments (e.g., eye loupes, magnifiers, microscopes).
- Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.

Warning: Fiber Optic Cables

WARNING!

Avoid personal injury! Qualified service personnel may only perform the procedures in this manual. Wear safety glasses and use extreme caution when handling fiber optic cables, particularly during splicing or terminating operations. The thin glass fiber core at the center of the cable is fragile when exposed by the removal of cladding and buffer material. It easily fragments into glass splinters. Using tweezers, place splinters immediately in a sealed waste container and dispose of them safely in accordance with local regulations.

Product Specific Laser Information

This product incorporates one or more reverse optical transmitters that contain an infrared laser which transmits intensity-modulated light and emits invisible radiation. This laser label is placed on the optical transmitter, see below illustration.

Chapter 1 Preface

About This Guide

Introduction

This guide describes how to operate, install and configure the Compact EGC fiber deep node.

Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this equipment.

> **WARNING:**
>
> **Allow only qualified and skilled personnel to install, operate, maintain and service this equipment. Otherwise, personnel injury or equipment damage may occur.**

Who Should Read This Guide

This guide is intended for personnel who are responsible for installing, setting up, monitoring and maintaining this product.

In This Guide

This guide is divided into the following chapters.

- Chapter 1 – Introduction
- Chapter 2 – Installation
- Chapter 3 – Operation
- Chapter 4 – Customer Information

Chapter 2
Installation

Overview

Introduction

This chapter provides the instruction about how to install the Compact EGC fiber deep node.

Tools and Accessories

Before you start the installation, make sure you have the following tools and equipments to connect and configure the Compact EGC fiber deep node 90100 and 90300.

You need a…	**To…**
5 mm Allen Wrench	Tighten and loosen the lid of 90100
13 mm Wrench for screws	Tighten and loosen the lid of 90300
Flat tip screwdriver	Tighten and loosen the grounding bolt of 90100 and 90300
M5 Screws	Mount the Compact EGC fiber deep node

The following table list the required tools for IP test with referenced mounting requirements.

Required Tools	**Mounting requirement**
5 mm Allen screw in lid	Tighten from 10 Nm to 16 Nm (7.4 ft-lb to 11.8 ft-lb)
13 mm Housing closure bolts of 90300	Tighten from 6 Nm to 16 Nm (4.4 ft-lb to 11.8 ft-lb)
RF I/O Port blanking plugs	Tighten from 3 Nm to 5 Nm (26.5 in-lb to 44 in-lb)
RF Output port gland	Tighten from 4 Nm to 6 Nm (35.4 in-lb to 53 in-lb)
Fiber I/O gland	Tighten from 3 Nm to 4 Nm (26.5 in-lb to 35.4 in-lb)

Space Requirements

The operating temperature of the node is from -15 ℃ to +55 ℃ (+5℉ to +131℉). The temperature should be maintained with the proper values between the restricted ranges.

To Open and Tighten the Housing

Introduction

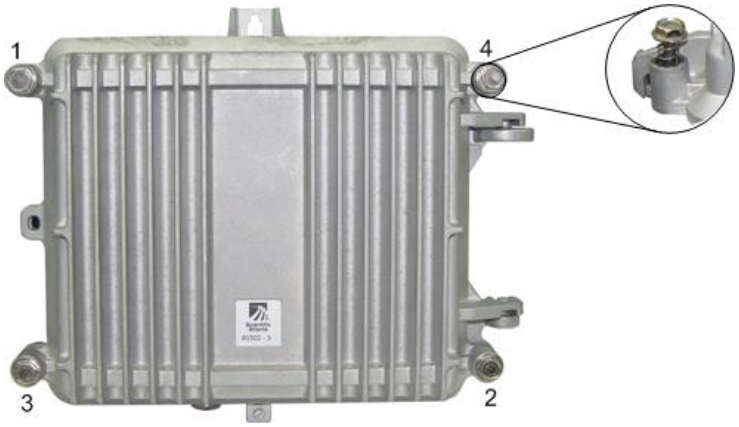
The Compact EGC Fiber Deep Node has two types of housing, an indoor housing (90100) for cabinet mounting and an outdoor housing (90300) for facade mounting. The following procedures detail the procedure about how to mount the EGC fiber deep node.

To Open and Tighten the Housing of 90100

The EGC fiber deep node should be *mounted vertically* with the cable input underneath, to secure best possible operating temperature conditions. The pin length of the PG 11 cable connector at input and output is shown on the cover plate of the node. If needed, trim the connector with wire cutters.

For the node type 90100, use a 5 mm Allen key to tighten or loosen the screw in the lid to 11 Nm. For the node type 90300, to ensure a proper seal, tighten or loosen the bolts in sequence 1, 2, 3, 4… as shown in the following Figure. Use a 13 mm wrench for screw in 90300 lid and torque to 7 Nm.

Bolt Tightening position of the node type 90100



Bolt Tightening Sequence of the node type 90300

Mounting the EGC FDN

Fiber management

On the cover, there is a simple fiber management solution for the products. The optical receiver, reverse optical transmitter module are 0.9mm fiber turn around in the fiber clips, and then go to the right side of cover and finally insert the fiber connecter holder. Customer uses 3 mm fiber pigtails get through the PG16 connector, and then turn clockwise in clips and connect to the holder. The fiber connector holder fits both SC/APC to SC/APC connector and SC/APC to E2000 connector.

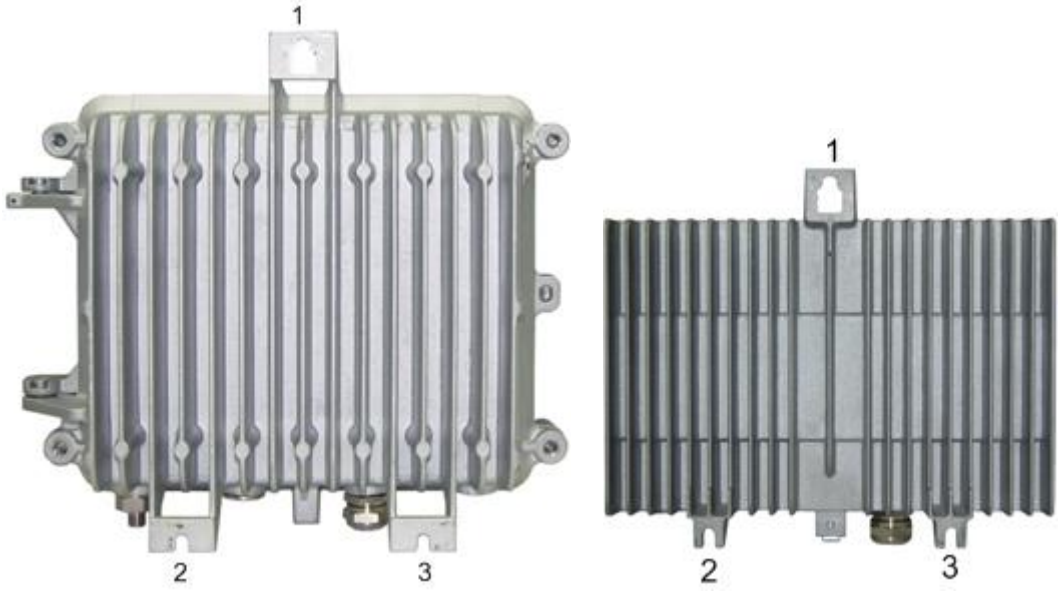
Important: Fibers should be mounted very carefully. Be careful not to break the fiber. The fiber curve should be greater than 25 mm. Please note that there may be only one fiber mounted for the node without reverse transmitter module.

To Mounting the Node

The Compact EGC fiber deep node is mounted perpendicularly with the cable inlet at the bottom in order to secure natural ventilation during operation. The node can be mounted on the wall of concrete, brick, wood, metal, etc., or in the cabinet, which will all require different type of screws and screwdrivers. You may use three screws (screw size is M5) to fix the node, see the following illustration.

CAUTION!

Be aware of the size and weight of the Node while mounting. Ensure that the mounting place has a stable flat surface, and can safety support the node's maximum weight. Please use an appropriate type of screws and screwdrivers depending on the way of mounting and material type.



Chapter 3
Operation

Overview

Introduction

This chapter describes the procedures for operating the Compact EGC fiber deep node.

Plug-in Units

The EGC fiber deep node is equipped with different plug-in locations for the reverse transmitter, transponder, links, diplex filters, and output splitters.

Note: For correct functioning of the node, modules should be inserted in all plug-in locations.

The following plug-in units are necessary.

- **Output splitter** type 77041 to 77044. If an asymmetric splitter (bridger) is used, the largest attenuation at the output 2 (OUT 2) is obtained. If only a signal at output 1 (OUT 1) is requested, link type 74069 is used.
- **Diplex filter**. Two diplex filters type 75130 with the required split frequency are used to select the split frequency. By exchanging these filters the reverse frequency range can be altered.
- **Reverse filter**. Three reverse filters type 75127 is available for Single Low Pass 65/87 MHz, Single High Pass 11/15 MHz, or Single Band Pass 15/65 MHz.

  The dual reverse filter 75128 can be inserted. The filter is available in three different versions:

  – Low pass – for suppressing unwanted signals from the forward path.

  – High pass – for suppressing unwanted signals from the reverse path.

  – Band pass – which is a combination of the above mentioned.

  Note: A filter with low pass function must be used at output levels above 100 dBµV.
- **Reverse transmitter**. The reverse transmitter type CMPT-RTX-x is used to set up a reverse path of the node.
- **Transponder**. SMC transponder type A91051 or HMS transponder type A91064 for remote control and monitor.

Configuration

Initiate Node

When the optical signal and the supply voltage are connected to the node, the optical level should be checked.

Reverse Path Set-up

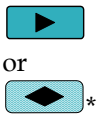
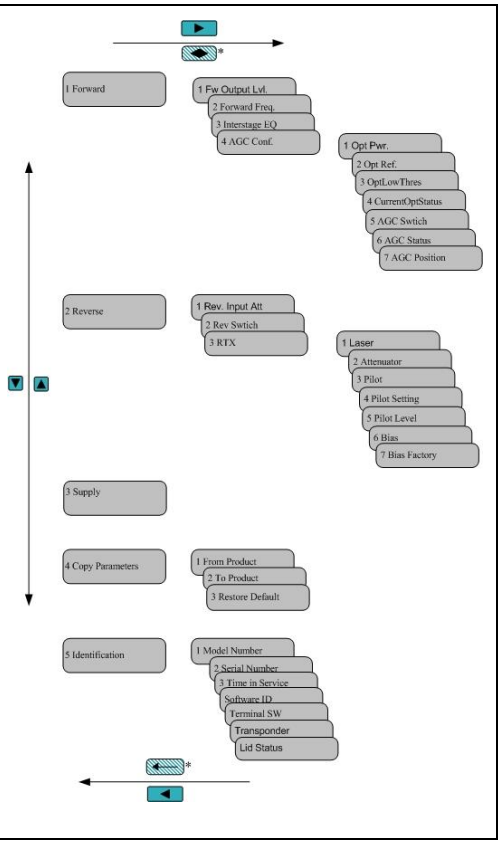
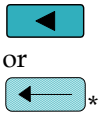
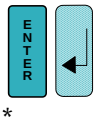
In order to connect the reverse transmitter type CMPT-RTX-x to the reverse path from the coax network, diplex filter type 75130 must be mounted. The diplex filter determines the reverse frequency range. Both reverse paths are aligned to the same level. The test points TP-R for the reverse path are used for adjustment of the reverse path.

Basically, both reverse paths from the coax network is combined and transmitted to the reverse transmitter. The reverse level can be measured on the reverse test point. The correct reverse level depends on the reverse transmitter.

The Tristate Switch is factory set to 0 dB. To change this set-up, the handheld terminal 91200 or the ROSA/TNCS monitoring system can be used.

Setting up the EGC Fiber Deep Node

This product can be setup with a handheld terminal **type A91200.11** or with a handheld terminal **type A91200.10 containing the necessary driver for the EGC fiber deep node.** New drivers can be installed by means of download kit A91210.10. Use the menu structure in the following table to navigate through the different menus.

	Is used to navigate to the submenus and to open a menu for editing. The value can then be changed. Additionally, the button can be used to reject a value entered by the keypad.	
	Is used to navigate to the root menus and to delete wrong digits when a menu is open for editing. Additionally, the button can be used to reject a value entered by the keypad.	
	All numbers, ”.” and ”-” are used to enter values. The numbers can also be used as short cuts.	
	Is used to navigate through menus at the same level and to select the settings in some menus. Additionally, these buttons can be used to fine-tune some values.	
	Is used to confirm a setting or a change.	

Shortcuts

Use the short cuts shown on the cover plate to do a fast selection of the required menu. The menu numbers can also be used as short cuts. Refer to the following menus structure to determine the number for the required menu.

When pressing a key for 1 sec. It is working as a shortcut. When pressing a key shortly, it is used for navigation the Nokia way. (Jumps to menu of the number pressed on keyboard, and if another key is pressed shortly after it jump to the sub menu if available).

Three shortcuts allow user directly to enter menus to set parameters:

- By pressing and holding "1" on keyboard, user may set forward interstage EQ directly.
- By pressing and holding "2" on keyboard, user may set output level directly.
- By pressing and holding "3" on keyboard, user may set reverse input attenuator directly.

Menu Structures

1 Forward	Submenu1	Submenu2	Notes
	Forward Freq. 11 862 MHz		862 MHz or 1 GHz
	Interstage EQ 12 0 dB		0 to 15 dB, 0.5 dB step
	Level Control 13 ▶	Level control 0 dB	Adjust the output level in the range of -8 dB to +8 dB. Just press the number key to set the output level.
	AGC Conf 14 ▶	Opt Pwr. 141 -16 dBm	Read only
		Opt Ref. 142 -7 dBm	Switch from -12 dBm to 0 dBm.
		OptLowThres 143 -3 dB	Switch from -10 dBm to 0 dBm
		CurrentOptStatus 144 optical low	Read only, optical low, normal, or high
		AGC Switch 145 on	Switch on or off
		AGC Status 146 AGC OK	Read only, AGC OK or AGC Error

2 Reverse	Submenu1	Submenu2	Notes
	Rev. Input Att 21 0 dB		0 to 20 dB
	Rev. Switch 22 on		on, -6 dB, off
	RTX 23 or not mounted	Laser 231 on	on or off
		Attenuator 232 0 dB	Switch from 0 dB to 10 dB
		Pilot 233 on	On or off
		Pilot setting 234 -10 dB	Switch from -15 dB to -5 dB
		Pilot Level 235 40 dBµV	Switch from 35 dBµV to 45 dBµV
		BIAS 236	Read only
		BIAS Factory 237	Read only
3 Supply	**Submenu1**	**Submenu2**	**Notes**
NotConnected			For 220 V AC power supply
xx Vp AC			AC peak value for remote power supply

4 Copy Parameters	Submenu1	Submenu2	Notes
	From Product 41	Setting 1 to 9 411 to 419 No data	You can store or abort the parameters from up to 9 nodes to handheld EEPROM.
	To Product 42	Setting 1 to 9 421 to 429 No data	You can copy the parameters from handheld EEPROM to 9 nodes.
	Restore Default 43	Node & RTX 431	You can restore the default settings for both the node and RTX module.
		Node 432	You can restore the default settings only for the node.
		RTX 433	You can restore the default settings only for the RTX module.
5 Identification	**Submenu1**		**Notes**
	Model number 51		Read only, to show the unit module type, 90100 or 90300
	Serial number 52		Read only, to show the unit's serial number
	Time in service 53		Read only, to record the servicing time of this unit
	Software ID 54		Read only, to show the software version of this unit
	Terminal SW 55		Read only, to show the handheld terminal software version
	Transponder 56		Read only, to show the transponder status
	Lid Status 56 Open		Read only, to show the lid status

Alarms and LED Signaling

The LED in the node is used for signaling different status:

- Green – no alarms.
- Yellow - low optical signal.
- Red - no optical signal. Pin ≦-16.0 dBm.
- Flashing – AGC is out of range.

ROSA Element Management System

Monitoring of the node requires the installation of the HMS or SMC transponder and in the node. This transponder will communicate back to the headend by means of the reverse path. The transponder signal is received at the test point at output. The level measured by the transponder will be attenuated by approximately 33 dB relative to the output signal at output. The transponder transmitter level is adjusted to the same level as the other reverse signals. The level from the transponder will be attenuated by approximately 20 dB at the reverse path since it is inserted with a 20 dB coupler.

With a transponder it is possible to monitor and control different parameters in the node. The built-in reverse path switch can be controlled in order to locate ingress noise in the reverse path. This can be useful in the search for errors in larger networks.

Programming of a Compact Transponder type 910xx is done by using the handheld terminal 91200.

Chapter 4
Customer Support Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

Access your company's extranet site to view or order additional technical publications. For accessing instructions, contact the representative who handles your account. Check your extranet site often as the information is updated frequently.

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