

Configuration Reference Guide

The information in this document is subject to change without notice and describes only the product defined in the introduction of this documentation. This document is not an official customer document and Nokia Siemens Networks does not take responsibility for any errors or omissions in this document. This document is intended for the use of Nokia Siemens Networks customers only for the purposes of the agreement under which the document is submitted. No part of this documentation may be used, reproduced, modified or transmitted in any form or means without the prior written permission of Nokia Siemens Networks. The documentation has been prepared to be used by professional and properly trained personnel, and the customer assumes full responsibility when using it. Nokia Siemens Networks welcomes customer comments as part of the process of continuous development and improvement of the documentation.

The information or statements given in this documentation concerning the suitability, capacity or performance of the mentioned hardware or software products are given "as is" and all liability arising in connection with such hardware or software products shall be defined conclusively and finally in a separate agreement between Nokia Siemens Networks and the customer.

IN NO EVENT WILL Nokia Siemens Networks BE LIABLE FOR ERRORS IN THIS DOCUMENTATION OR FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO SPECIAL, DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL OR ANY LOSSES SUCH AS BUT NOT LIMITED TO LOSS OF PROFIT, REVENUE, BUSINESS INTERRUPTION, BUSINESS OPPORTUNITY OR DATA, that might arise from the use of this document or the information in it.

THE CONTENTS OF THIS DOCUMENT ARE PROVIDED "AS IS". EXCEPT AS REQUIRED BY APPLICABLE MANDATORY LAW, NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT, ARE MADE IN RELATION TO THE ACCURACY, RELIABILITY OR CONTENTS OF THIS DOCUMENT. NOKIA SIEMENS NETWORKS RESERVES THE RIGHT TO REVISE THIS DOCUMENT OR WITHDRAW IT AT ANY TIME WITHOUT PRIOR NOTICE.

This document and the product it describes are considered protected by copyrights and other intellectual property rights according to the applicable laws.

The wave logo is a trademark of Nokia Siemens Networks Oy. Nokia is a registered trademark of Nokia Corporation. Siemens is a registered trademark of Siemens AG.

Other product names mentioned in this document may be trademarks of their respective owners, and they are mentioned for identification purposes only.

Copyright © Nokia Siemens Networks 2007. All rights reserved.

Contents

Contents	3
1	Overview 5
1.1	Overview of configurations 5
1.2	RF cabling configurations and rules 6
1.3	Recommended configurations 8
1.3.1	Recommended one-sector configurations 8
1.3.2	Recommended stack configurations 9
1.3.3	Recommended pole and wall configurations 11
1.3.4	Recommended FCOA and FCIA configurations 12
2	Creating 1+1+1/2+2+2 bypass 2UD configurations 15
2.1	Creating a 1+1+1/2+2+2 bypass 2UD in a stack 15
2.2	Creating a 1+1+1/2+2+2 2-way 2UD on a wall 26
2.3	Creating a 1+1+1/2+2+2 2-way 2UD on a pole 38
2.4	Creating a 1+1+1/2+2+2 bypass 2UD in FCIA 46
2.5	Creating a 1+1+1/2+2+2 bypass 2UD in FCOA 56
3	Creating 3+3+3/4+4+4 2-way 2UD configurations 67
3.1	Creating a 3+3+3/4+4+4 2-way 2UD in a stack (with EWxx) 67
3.2	Creating a 3+3+3/4+4+4 2-way 2UD on a wall (with EWxx) 75
3.3	Creating a 3+3+3/4+4+4 2-way 2UD on a pole (with EWxx) 85
3.4	Creating a 3+3+3/4+4+4 2-way 2UD in FCIA (with EWxx) 94
3.5	Creating a 3+3+3/4+4+4 2-way 2UD in FCOA (with EWxx) 105
4	Creating a 6+6 configuration 117
5	Dual band 2+2+2 and 2+2+2 configuration 121
6	Cost-optimised 3+3 configuration 125
7	Flexi EDGE/WCDMA BTS multimode configurations 129
8	Expanding to a 3+3+3/4+4+4 2-way 2UD (with EWxx) configuration 133
9	Optional power modules (FPDA and FPMA) in Flexi EDGE BTS configurations 143

1 Overview

1.1 Overview of configurations

This document shows how to create the following configurations:

- 1+1+1/2+2+2 bypass 2UD configuration (*stack, wall, pole, FCIA and FCOA installation*)
- 3+3+3/4+4+4 2-way 2UD configuration (*stack, wall, pole, FCIA and FCOA installation*)
- 6+6 configuration
- Dual band 2+2+2 and 2+2+2 configuration
- Cost-optimised 3+3 configuration
- Flexi EDGE/WCDMA multimode configurations

This document also shows the installation location of optional power modules, see *Power modules (FPDA and FPMA) in Flexi EDGE BTS configurations*.

See also *RF cabling configurations and rules* and *Recommended configurations*.

For detailed instructions on how to install and cable the modules, see the following documentation, depending on the installation type:

- *Creating Stack, Wall and Pole Configurations*
- *Installing Flexi Cabinet for Indoor (FCIA) and Creating FCIA Configurations*
- *Installing Flexi Cabinet for Outdoor (FCOA) and Creating FCOA Configurations*

Expansion configurations

You can expand from a 1+1+1/2+2+2 bypass 2UD to a 3+3+3 2-way 2UD configuration. For instructions, see *Expanding to a 3+3+3/4+4+4 2-way 2UD (with EWxx) configuration*.

1.2 RF cabling configurations and rules

1. The Dual TRX Module (EXxA) and Dual Duplexer Module (ERxA) split into two different sectors in a 1+1 bypass with no diversity is supported by RF cable autodetection or site configuration file (SCF) overruling.
2. Configurations not supported by RF cable autodetection may get supported by SCF overruling.
3. One Remote Tune Combiner Module (ECxA) cannot be split between two sectors. One Dual TRX or Dual Duplexer Module can only be split between sectors in a 1+1 bypass with no diversity or a cost-optimised configuration (3+3+3, 3+3, 5+5).
4. The Dual TRX Module's RxA must be connected to any of the Remote Tune Combiner Module's Rx1-3 connectors, and the RxB must be connected to any of the Remote Tune Combiner Module's Rx4-6 connectors. The Dual TRX Module's RxA must also be connected to any of the Dual Duplexer Module's RxA1-4, and the RxB must be connected to any of the Dual Duplexer Module's RxB1-4. In all configurations, the main and/or diversity RX cable(s) must be connected to the same Dual Duplexer or Remote Tune Combiner Module as the TX to enable runtime checking of the correct transmission power and TRX test.
5. RF cabling between the Dual TRX and Remote Tune Combiner Module is the same if there are one or two Remote Tune Combiner Modules in the sector. RX diversity antenna sharing is enabled by using optional RF cables (EUCA) between the Remote Tune Combiner Modules. Two cables are connected from RX_ext_In to RX_ext_Out.
6. In 2 and 4-way WBC configurations, all carriers must be fed through one or two Wideband Combiner Sub-modules WBC (EWxx) to get equal combining loss for all carriers (for example 3+3+3).
7. A Dual Duplexer Module of a sector module cannot be shared with another sector module in 1UD or 2UD configurations with RF cable autodetection unless the configuration is a 1+1 bypass with no Rx diversity.

8. Wideband Combiner Sub-module presence is determined by the combining method (the number of Dual TRX Module's Tx cables connected to one Dual Duplexer Module Tx port):
 - 1 = bypass
 - 2 = 2-way WBC
 - 3/4 = 4-way WBC
9. RF cabling can also be provided in an SCF. If an SCF is used, the configuration overrules the BTS validation of RF cabling even when the cabling violates rules 3 and 7.
10. In the Dual Duplexer Module, the pre-installed RF cable between the RxAI and RxAO cannot be auto-detected. Unless the configuration is co-siting or has three TRXs in a sector with borrowed Rx diversity, this cable must be installed to get the Rx signal from Antenna A to the RxA 1-4 ports.
11. All RF cabling combinations not specified in *Recommended configurations* are discouraged, and the BTS software may activate broken or degraded alarms.
12. A Dual Duplexer and Remote Tune Combiner Module cannot be used simultaneously in the same sector if RF cable autodetection is used. The SCF overrule may allow it, but there is no guarantee the BTS sector will function properly.
13. RxA Div and RxB Div connectors must be used in 4UD and cost-optimised configurations.
14. All Remote Tune Combiner Module power and bus cables must be connected to the System Module (ESMA) in Remote Tune Combiner Module configurations.
15. A maximum of two casings can be installed on one stack for pole or wall configurations.
16. For all Dual TRX Modules in the same Remote Tune Combiner Module configuration, the power and bus cables must be connected to the System Extension Module (ESEA), except the EXxA 7-EXxA9 to the System Module power ports 4-6. If the configuration includes Dual Duplexer Module(s) coexisting in different sectors, the Dual TRX Modules connected to Dual Duplexer Module(s) must be connected also to the System Extension Module.
17. In Split TRX (cost-optimised) configurations (3+3+3, 3+3, 5+5), the Rx RF switches of the split Dual TRX Module (even in 1UD or 2UD configurations) are turned to 'Open' position normally reserved only for 4UD configurations.

18. Dual Duplexer Module of one sector module (Dual TRX + Dual Duplexer Module) must be shared with other sector module and vice versa that belongs to the same sector in a 4UD configuration.
19. It is recommended to install RF cabling for all TX paths and at least one RX path to enable RF cable autodetection when cost-optimised configurations are used. This also reduces maintenance site visits in future expansions.

1.3 Recommended configurations

1.3.1 Recommended one-sector configurations

Table 1. Recommended one-sector configurations

# of carriers	TX combining	RX diversity	# of EXxA	# of ERxA	# of EWxx	# of ECxA	# of ESMA	# of ESEA	# of antennas	RF CAD ¹⁾	SCF ²⁾	EP1 ³⁾
1	By-pass	1UD	1	1	0	0	1	0	1	Yes	Yes	Yes
1	By-pass	2UD	1	1	0	0	1	0	2	Yes	Yes	Yes
2	By-pass	2UD	1	1	0	0	1	0	2	Yes	Yes	Yes
3	By-pass	2UD	2	2	0	0	1	0	3	Yes	Yes	Yes
4	By-pass	2UD	2	2	0	0	1	0	4	Yes	Yes	Yes
1	DP	2UD	1	1	1	0	1	0	2	No	Yes	No
2	DP	2UD	2	1	2	0	1	0	2	No	Yes	No
3	DP	2UD or 4UD	3	2	3	0	1	0	2UD=3, 4UD=4	No	Yes	No
4	DP	2UD or 4UD	4	2	4	0	1	0	4	No	Yes	No
1	IDD or DP	4UD	2	2	IDD=0, DP=1	0	1	0	4	No	Yes	No
1	IDD	2UD	1	1	0	0	1	0	2	No	Yes	No
2	IDD or DP	4UD	2	2	IDD=0, DP=2	0	1	0	4	No	Yes	No
2	IDD	2UD	2	2	0	0	1	0	4	No	Yes	No
2	2-way	1UD	1	1	1	0	1	0	1	No	Yes	Yes
3	2-way	2UD	2	1	2	0	1	0	2	Yes	Yes	Yes
4	2-way	2UD	2	1	2	0	1	0	2	Yes	Yes	Yes

Table 1. Recommended one-sector configurations (cont.)

# of carriers	TX combining	RX diversity	# of EXxA	# of ERxA	# of EWxx	# of ECxA	# of ESMA	# of ESEA	# of antennas	RF CAD ¹⁾	SCF ²⁾	EP1 ³⁾
3-4	4-way	1UD	2	1	3	0	1	0	1	No	Yes	Yes
5 to 8	4-way	2UD	3 to 4	1	5 to 6	0	1	0	2	Yes	Yes	Yes
Up to 6	RTC (6-way)	2UD	Up to 3	0	0	1	1	1	2	Yes	Yes	Yes
7 to 12	RTC (6-way)	2UD	4 to 6	0	0	2	1	1	2	No	Yes	Yes

¹⁾ RF Cable Autodetection supported (Yes/No)

²⁾ Nokia SCF template available (Yes/No)

³⁾ Supported in EP1 (Yes/No)

1.3.2 Recommended stack configurations

Table 2. Recommended stack configurations

Configuration	TX combining	RX diversity	# of EXxA	# of ERxA	# of EWxx	# of ESMA	# of FPDA ¹⁾	# of FPAA (FPMA) ¹⁾	# of antennas	SCF ²⁾	EP1 ³⁾
1+1	By-pass	No/1UD	1	1	0	1	1	1	2	No	Yes
1 to 2 Omni	By-pass	2UD	1	1	0	1	1	1	2	No	Yes
2	2-way	1UD	1	1	1	1	1	1	1	Yes	Yes
3 - 4	4-way	1UD	2	1	3	1	1	1	1	Yes	Yes
3 Omni	2-way	2UD	2	1	2	1	2	1	2	No	Yes
4 Omni	2-way	2UD	2	1	2	1	1	2	2	No	Yes
5 to 6 Omni	4-way	2UD	3	1	5	1	1	2	2	No	Yes
7 to 8 Omni	4-way	2UD	4	1	6	1	1	2	2	No	Yes

Table 2. Recommended stack configurations (cont.)

Config-uration	TX com-bining	RX diver-sity	# of EXxA	# of ERxA	# of EWxx	# of ESMA	# of FPDA ¹⁾	# of FPAA (FPMA) ¹⁾	# of anten-nas	SCF ²⁾	EP1 ³⁾
1+1	By-pass	2UD	2	2	0	1	1	1	4	No	Yes
2+2	By-pass	2UD	2	2	0	1	1	1	4	No	Yes
3+3	2-way	2UD	4	2	4	1	1	2	4	No	Yes
4+4	2-way	2UD	4	2	4	1	1	2	4	No	Yes
1+1+1/ 2+2+2	By-pass	2UD	3	3	0	1	1	1 to 2	6	No	Yes
3+3+3	2-way	2UD	6	3	6	1	2	3	6	No	Yes
4+4+4	2-way	2UD	6	3	6	1	2	4	6	No	Yes
3	DP	2UD or 4UD	3	2	3	1	1	2	3 or 4	No	No
4	DP	2UD or 4UD	4	2	4	1	1	2	4	No	No
1+1+1	DP	2UD	3	3	3	1	1	2	6	No	No
2+2+2	DP	2UD	6	3	6	1	1	2	6	No	No
1+1+1	IDD/DP	4UD	6	6	0 to 3	1	1	2	12	No	No
2+2+2	IDD/DP	4UD	6	6	0 to 6	1	2	3	12	No	No
2+2+2 & 2+2+2	By-pass	2UD	6	6	0	1	2	3	12	No	Yes

¹⁾ Optional depending on the external power source.

²⁾ Nokia SCF template available (Yes/No)

³⁾ Supported in EP1 (Yes/No)

1.3.3 Recommended pole and wall configurations

Table 3. Recommended pole and wall configurations

Config- uration	TX com- bining	RX diver- sity	# of EXxA	# of ERxA	# of EWxx	# of ESMA	# of FPDA ¹⁾	# of FPAA/ (FPMA) ¹⁾	# of stacks	# of anten- nas	SCF ²⁾	EP1 ³⁾
1+1	By-pass	No/1UD	1	1	0	1	1	1	2	2	No	Yes
1 to 2 Omni	By-pass	2UD	1	1	0	1	1	1	2	2	No	Yes
2	2-way	1UD	1	1	1	1	1	1	2	1	Yes	Yes
3 - 4	4-way	1UD	2	1	3	1	1	1	2	1	Yes	Yes
3 Omni	2-way	2UD	2	1	2	1	1	1	2	2	No	Yes
4 Omni	2-way	2UD	2	1	2	1	1	1	2	2	No	Yes
1+1	By-pass	2UD	2	2	0	1	1	1	2	4	No	Yes
2+2	By-pass	2UD	2	2	0	1	1	1	2	4	No	Yes
3+3	2-way	2UD	4	2	4	1	1	2	3	4	No	Yes
4+4	2-way	2UD	4	2	4	1	-	2	3	4	No	Yes
4+4	2-way	2UD	4	2	4	1	1	-	4	4	No	Yes
1+1+1/ 2+2+2	By-pass	2UD	3	3	0	1	1	1/2	3	6	No	Yes
3+3+3 AC	2-way	2UD	6	3	6	1	-	2	4	6	No	Yes
3+3+3 24DC	2-way	2UD	6	3	6	1	2	-	5	6	No	Yes
4+4+4 AC	2-way	2UD	6	3	6	1	-	3	4	6	No	Yes
4+4+4 24DC	2-way	2UD	6	3	6	1	2	-	5	6	No	Yes
3	DP	2UD or 4UD	3	2	3	1	1	2	3	2UD=3, 4UD=4	No	No
4	DP	2UD or 4UD	4	2	4	1	1	2	3	4	No	No
1+1+1	DP	2UD	3	3	3	1	1	2	3	6	No	No
2+2+2 AC	DP	2UD	6	3	6	1	-	3	4	6	No	No
2+2+2 24DC	DP	2UD	6	3	6	1	2	-	5	6	No	No
1+1+1	DP	4UD	6	6	3	1	1	2	4	12	No	No
2+2+2 AC	DP	4UD	6	6	6	1	-	3	4	12	No	No

Table 3. Recommended pole and wall configurations (cont.)

Config- uration	TX com- bining	RX diver- sity	# of EXxA	# of ERxA	# of EWxx	# of ESMA	# of FPDA ¹⁾	# of FPAA/ (FPMA) ¹⁾	# of stacks	# of anten- nas	SCF ²⁾	EP1 ³⁾
2+2+2 24DC	DP	4UD	6	6	6	1	2	-	5	12	No	No
1+1+1	IDD	4UD	6	6	0	1	1	2	4	12	No	No
2+2+2 AC	IDD	4UD	6	6	0	1	-	3	4	12	No	No
2+2+2 24DC	IDD	4UD	6	6	0	1	1	-	5	12	No	No
2+2+2 & 2+2+2 AC	By-pass	2UD	6	6	0	1	-	3	4	12	No	Yes

¹⁾ Optional depending on the external power source.

²⁾ Nokia SCF template available (Yes/No)

³⁾ Supported in EP1 (Yes/No)

1.3.4 Recommended FCOA and FCIA configurations

Table 4. Recommended FCOA and FCIA configurations

Config- uration	TX com- bining	RX diver- sity	# of EXxA	# of ERx A	# of EWxx	# of ECx A	# of ESM A	# of ESE A	# of FPD A ¹⁾	# of FPAA/ (FPM A) ¹⁾	# of anten- nas	SCF ²⁾	EP1 ³⁾
1+1	By-pass	No/ 1UD	1	1	0	0	1	0	1	1	2	No	Yes
1 to 2 Omni	By-pass	2UD	1	1	0	0	1	0	1	1	2	No	Yes
2	2-way	1UD	1	1	1	0	1	0	1	1	1	Yes	Yes
3-4	4-way	1UD	2	1	3	0	1	0	1	1	1	Yes	Yes
3 Omni	2-way	2UD	2	1	2	0	1	0	1	1	2	No	Yes
4 Omni	2-way	2UD	2	1	2	0	1	0	1	1	2	No	Yes
5 Omni	4-way	2UD	3	1	5	0	1	0	1	1	2	No	Yes

Table 4. Recommended FCOA and FCIA configurations (cont.)

Config-uration	TX com-bining	RX diver-sity	# of EXxA	# of ERx A	# of EWxx	# of ECx A	# of ESM A	# of ESE A	# of FPD A ¹⁾	# of FPAA/ (FPM A) ¹⁾	# of anten-nas	SCF ²⁾	EP1 ³⁾
6 Omni	4-way	2UD	3	1	5	0	1	0	1	2	2	No	Yes
7 Omni	4-way	2UD	4	1	6	0	1	0	1	2	2	No	Yes
8 Omni	4-way	2UD	4	1	6	0	1	0	1	2	2	No	Yes
3 to 4 Omni	RTC	2UD	2	0	0	1	1	1	1	1	2	No	Yes
5 to 6 Omni	RTC	2UD	3	0	0	1	1	1	1	1 to 2	2	No	Yes
7 to 8 Omni	RTC	2UD	4	0	0	2	1	1	1	2	2	Yes	Yes
9 to 10 Omni	RTC	2UD	5	0	0	2	1	1	2	2	2	Yes	Yes
11 to 12 Omni	RTC	2UD	6	0	0	2	1	1	2	3	2	Yes	Yes
1+1	By-pass	2UD	2	2	0	0	1	0	1	1	4	No	Yes
2+2	By-pass	2UD	2	2	0	0	1	0	1	1	4	No	Yes
3+3	By-pass	2UD	4	4	0	0	1	0	1	2	6	No	Yes
4+4	By-pass	2UD	4	4	0	0	1	0	1	2	8	No	Yes
6+12	RTC	2UD	9	0	0	3	1	1	3	4	6	Yes	No
1+1+1/ 2+2+2	By-pass	2UD	3	3	0	0	1	0	1	1/2	6	No	Yes
3	DP	2UD or 4UD	3	2	3	0	1	0	1	2	3 or 4	No	No
4	DP	2UD or 4UD	4	2	4	0	1	0	1	2	4	No	No
1+1+1	DP	2UD	3	3	3	0	1	0	1	2	6	No	No
2+2+2	DP	2UD	6	3	6	0	1	0	2	3	6	No	No
1+1+1	IDD/DP	4UD	6	6	0 or 3	0	1	0	1	2	12	No	No
2+2+2	IDD/DP	4UD	6	6	0 or 6	0	1	0	2	3	12	No	No
3+3+3	2-way	2UD	6	3	6	0	1	0	2	2	6	No	Yes
4+4+4	2-way	2UD	6	3	6	0	1	0	2	3	6	No	Yes
5+5+5	4-way	2UD	9	3	15	0	1	1	2	3	6	No	No
6+6+6	4-way	2UD	9	3	15	0	1	1	3	4	6	No	No
7+7+7	4-way	2UD	12	3	18	0	1	1	3	5	6	No	No

Table 4. Recommended FCOA and FCIA configurations (cont.)

Config-uration	TX com-bining	RX diver-sity	# of EXxA	# of ERx A	# of EWxx	# of ECx A	# of ESM A	# of ESE A	# of FPD A ¹⁾	# of FPAA/ (FPM A) ¹⁾	# of anten-nas	SCF ²⁾	EP1 ³⁾
6+6+6	RTC	2UD	9	0	0	3	1	1	3	4	6	Yes	No
8+8+8	4-way	2UD	12	3	18	0	1	1	3	5	6	No	No
2+2+2 & 2+2+2	By-pass	2UD	6	6	0	0	1	0	2	3	12	No	Yes

¹⁾ Optional depending on the external power source.

²⁾ Nokia SCF template available (Yes/No)

³⁾ Supported in EP1 (Yes/No)

2

Creating 1+1+1/2+2+2 bypass 2UD configurations

2.1 Creating a 1+1+1/2+2+2 bypass 2UD in a stack

Before you start

To create a 1+1+1 or 2+2+2 stacked configuration, you need:

- three Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)



Steps

1. Install the modules.

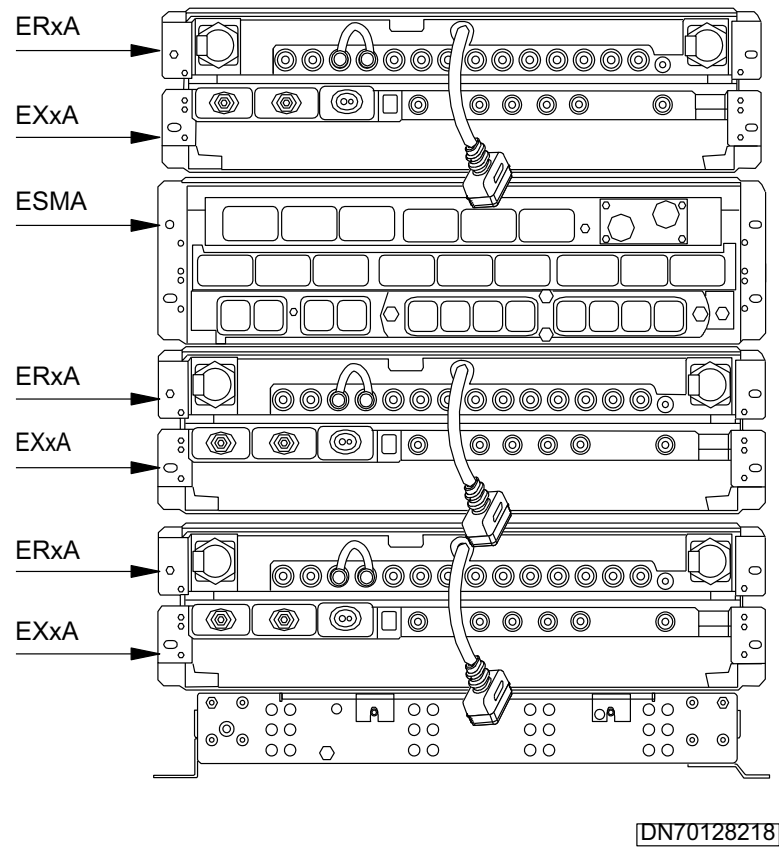


Figure 1. Modules in a 1+1+1/2+2+2 stack configuration

2. Connect the cables.

The order to connect the cable is as follows:

- Grounding cables
- External power cables
- Dual Duplexer Module cable
- Bus cables
- Internal power cables
- RF cables
- Antenna jumper cables
- Transmission cables

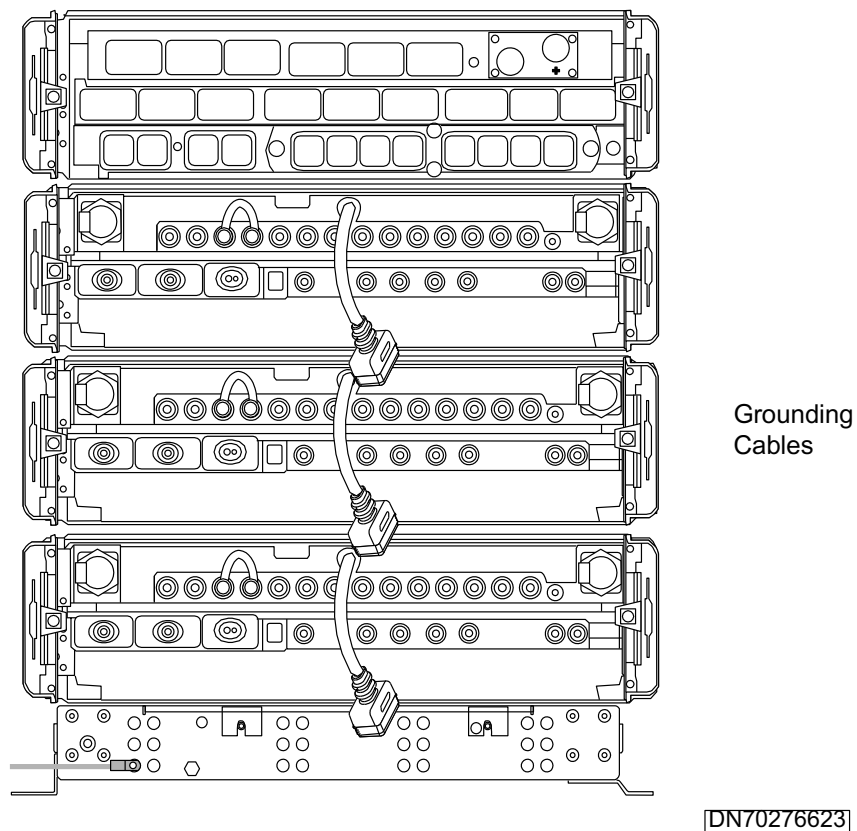


Figure 2. Grounding the plinth in a 1+1+1/2+2+2 stack configuration

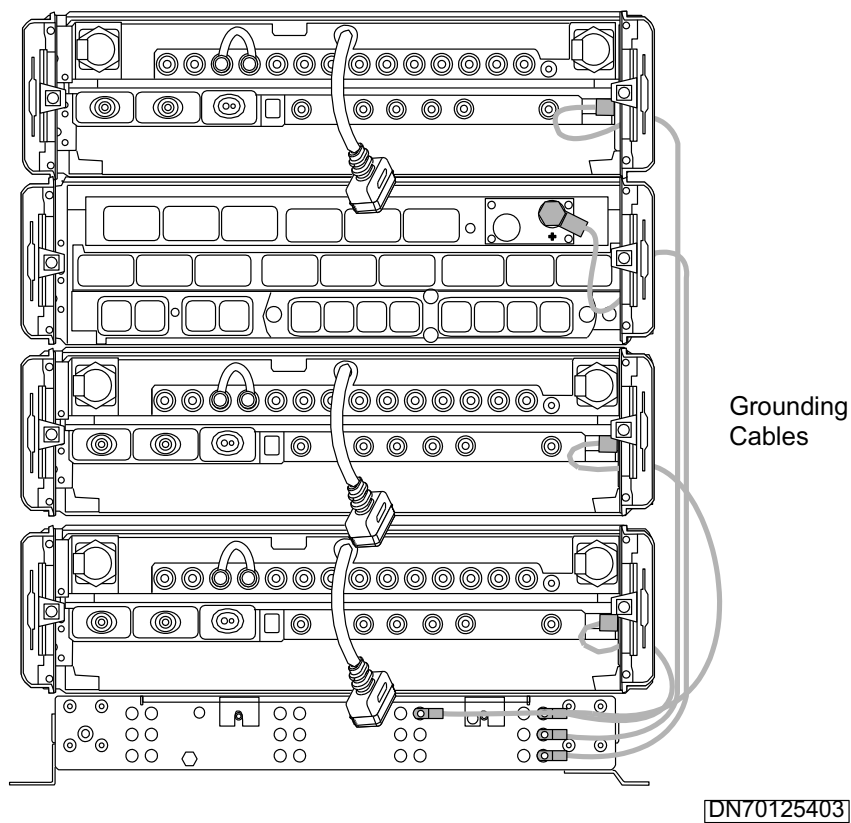


Figure 3. Grounding the modules in a 1+1+1/2+2+2 stack configuration

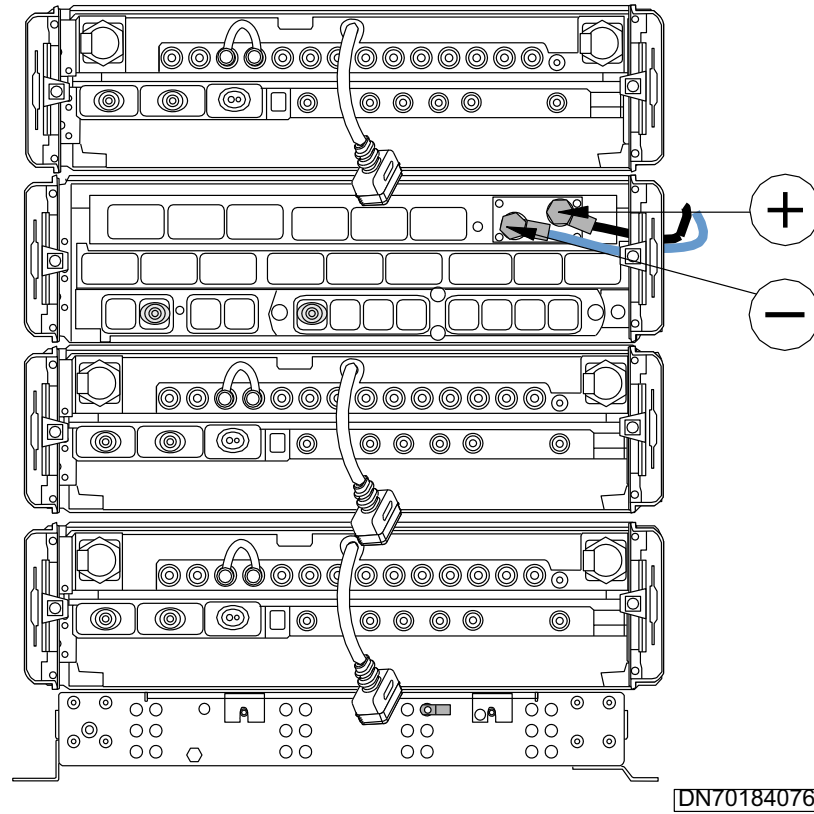


Figure 4. External power cables in a 1+1+1/2+2+2 stack configuration

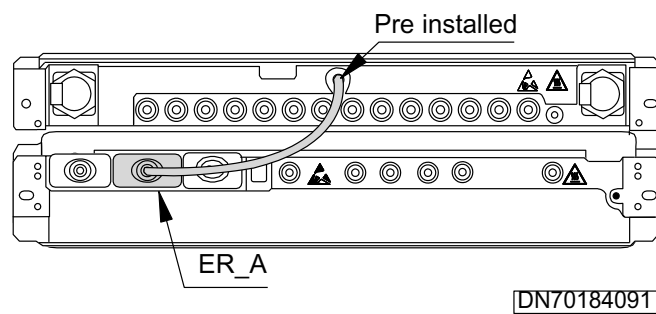


Figure 5. Dual Duplexer Module cable

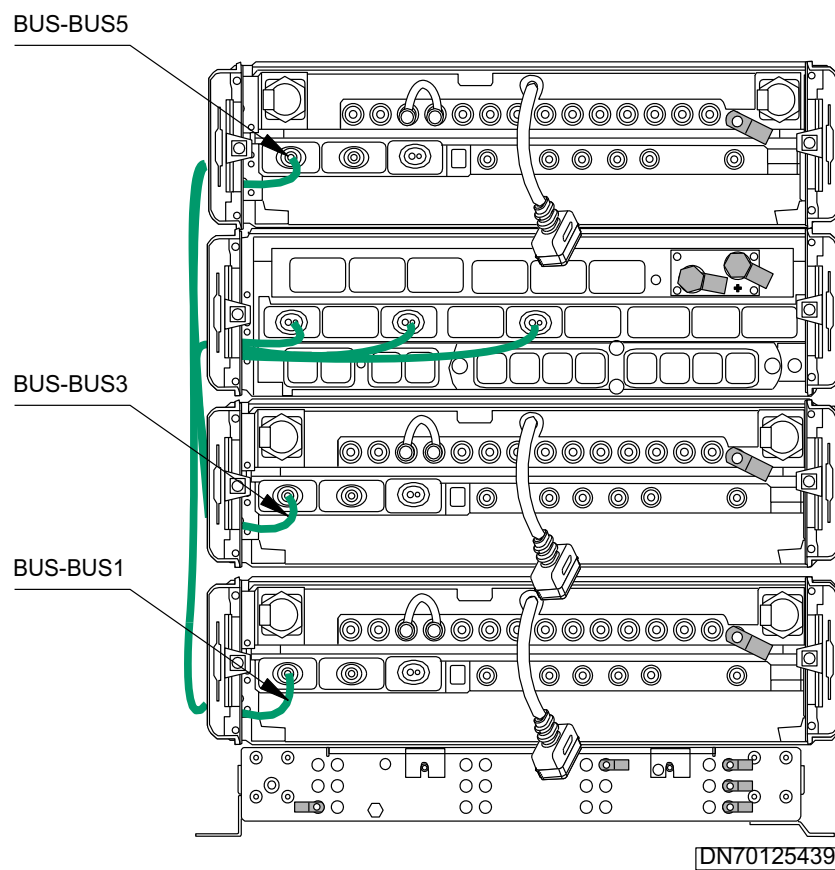


Figure 6. Bus cables in a 1+1+1/2+2+2 stack configuration

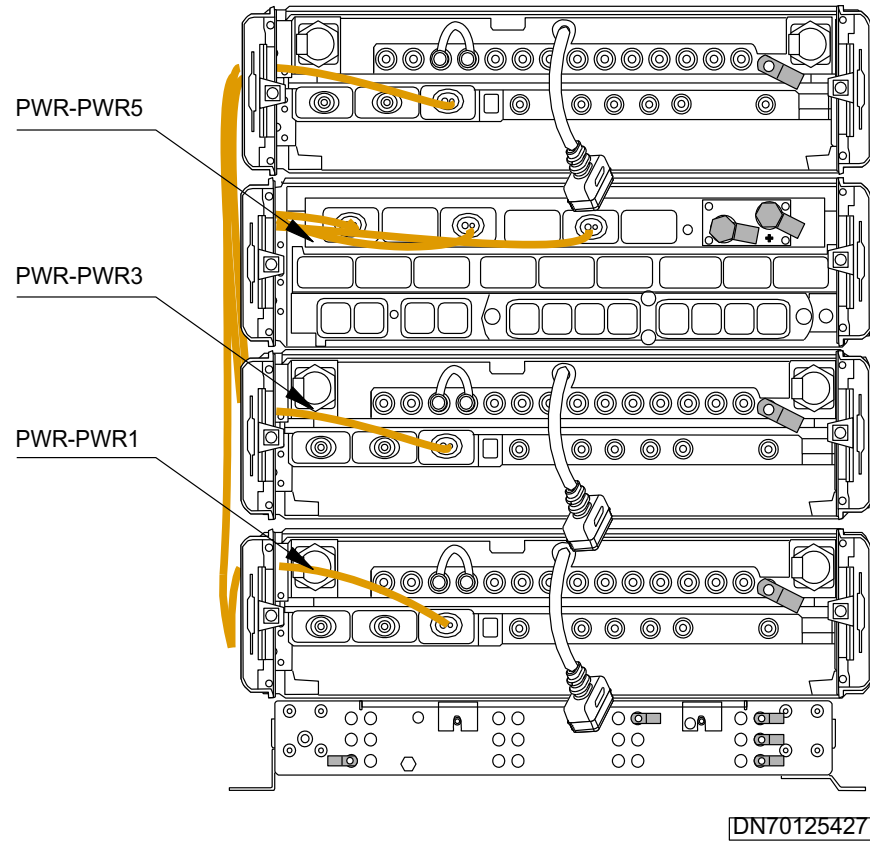


Figure 7. Internal power cables in a 1+1+1/2+2+2 stack configuration

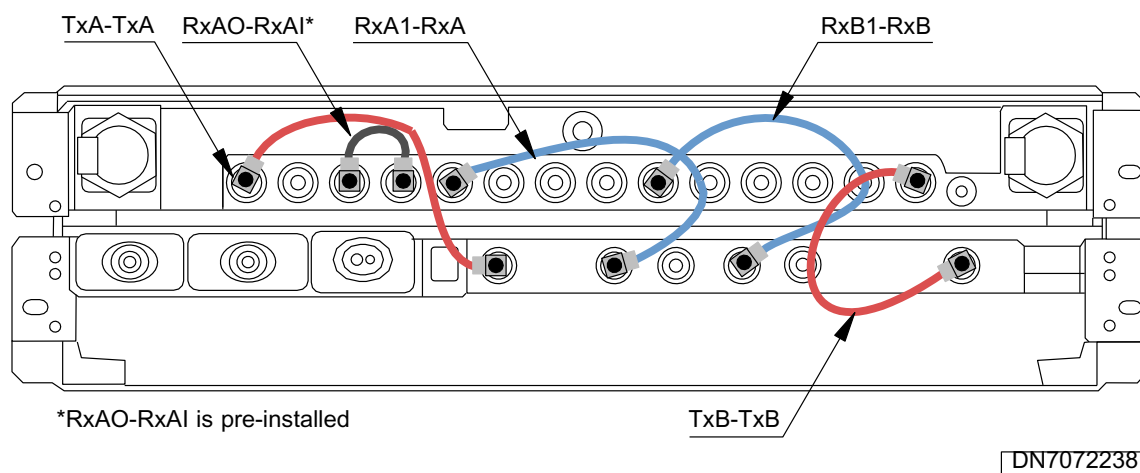


Figure 8. RF cables in a 1+1+1/2+2+2 stack configuration

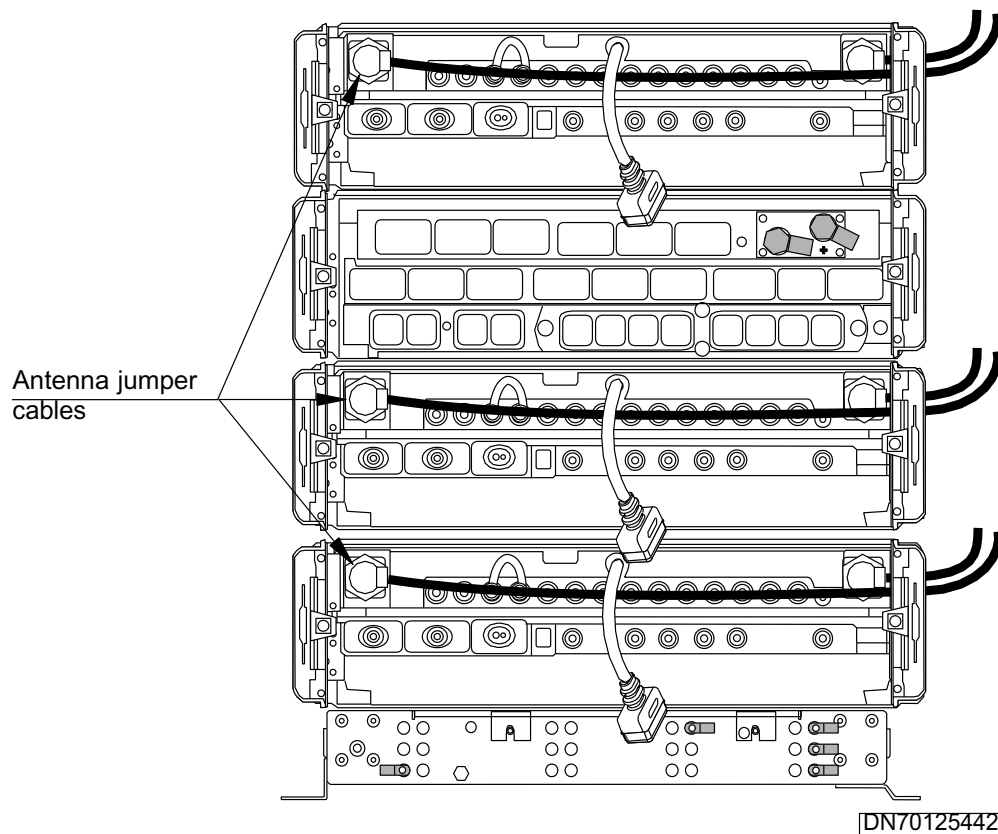


Figure 9. Antenna jumper cables in a 1+1+1/2+2+2 stack configuration

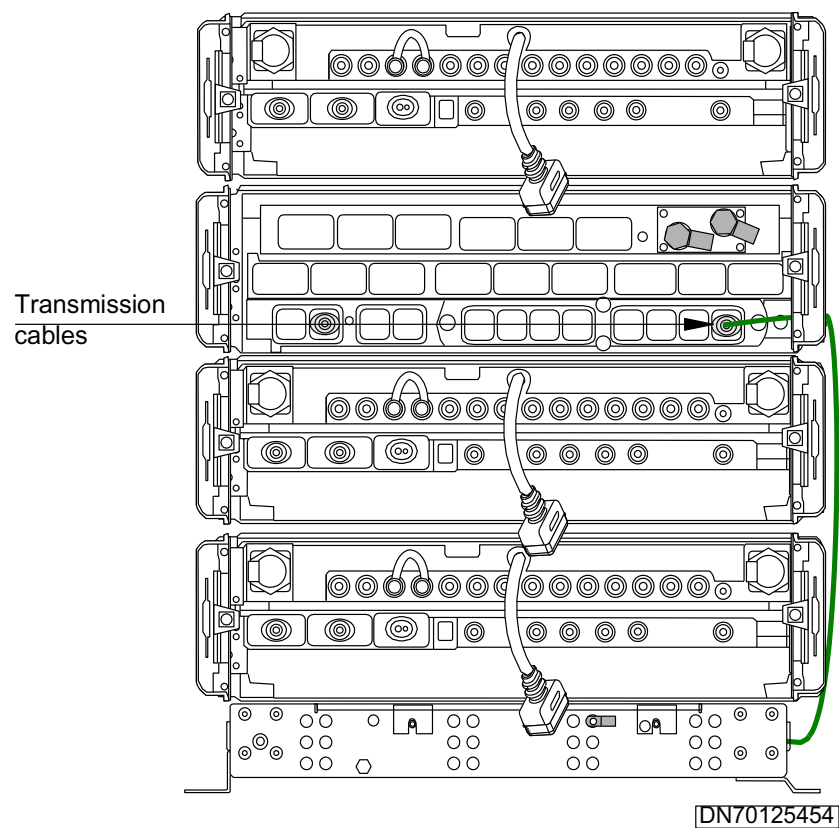
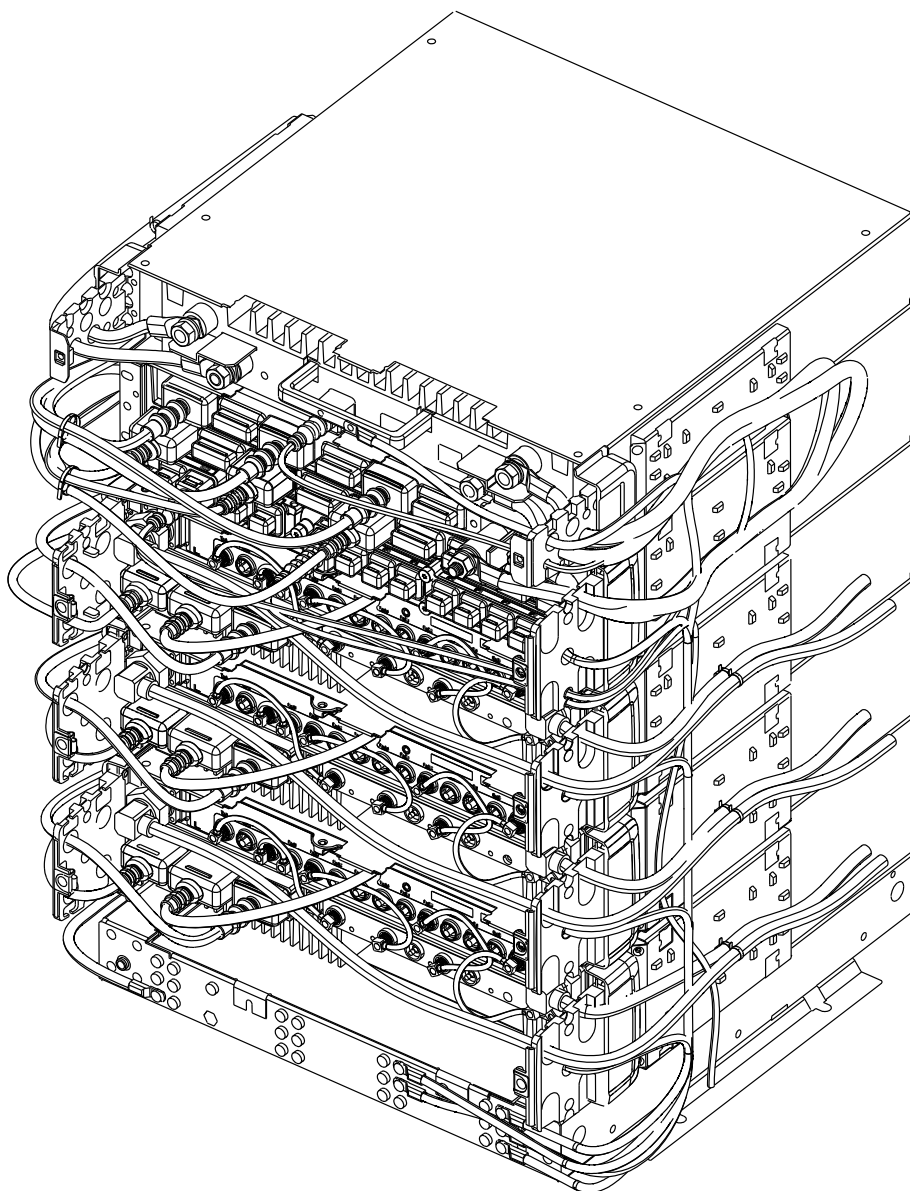


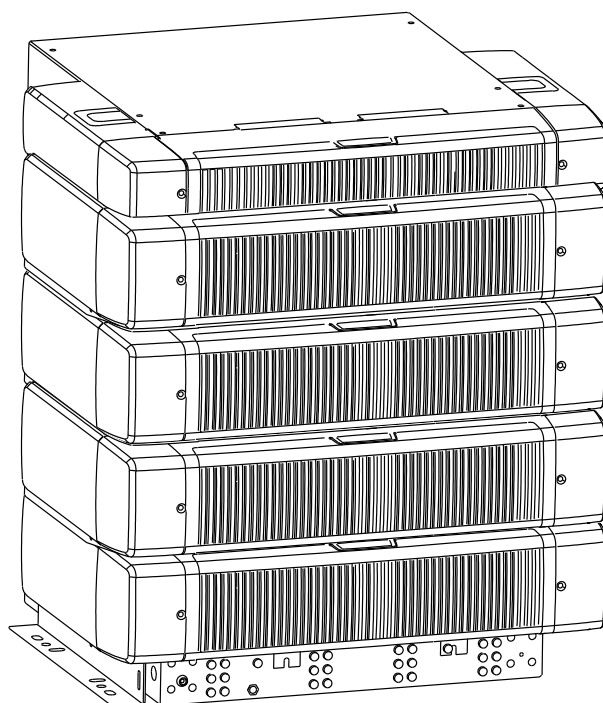
Figure 10. Transmission cables in a 1+1+1/2+2+2 stack configuration

Expected outcome



DN70125466

Figure 11. A 1+1+1/2+2+2 stack configuration (with optional FPDA): complete cabling



DN70125481

Figure 12. A 1+1+1/2+2+2 stack configuration (with optional FPDA): covers on

2.2 Creating a 1+1+1/2+2+2 2-way 2UD on a wall

Before you start

To create a 1+1+1 or 2+2+2 wall configuration, you need:

- three Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)



Steps

1. Install the modules.

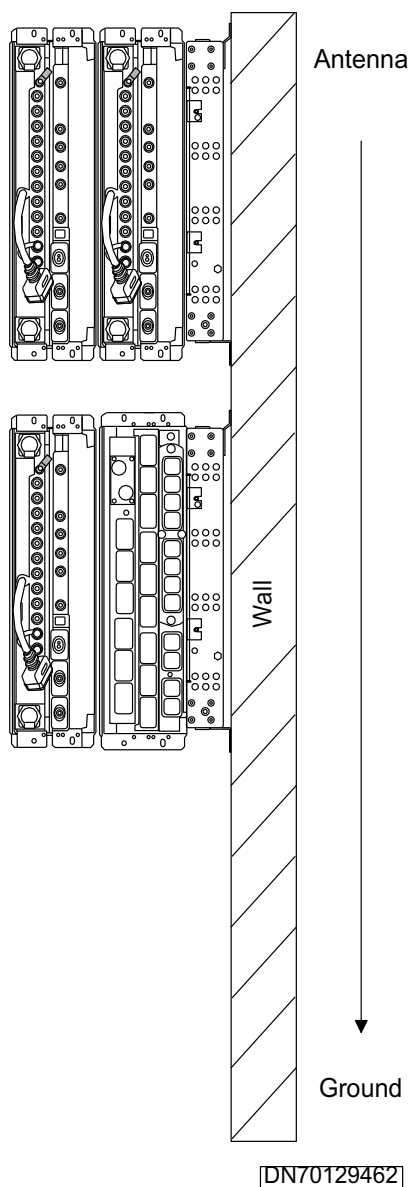


Figure 13. Modules in 1+1+1/2+2+2 wall configuration

2. Connect the cables.

The order to connect the cables is as follows:

- a. Grounding cables
- b. External power cables
- c. Dual Duplexer Module cable

- d. Bus cables
- e. Internal power cables
- f. RF cables
- g. Antenna jumper cables
- h. Transmission cables

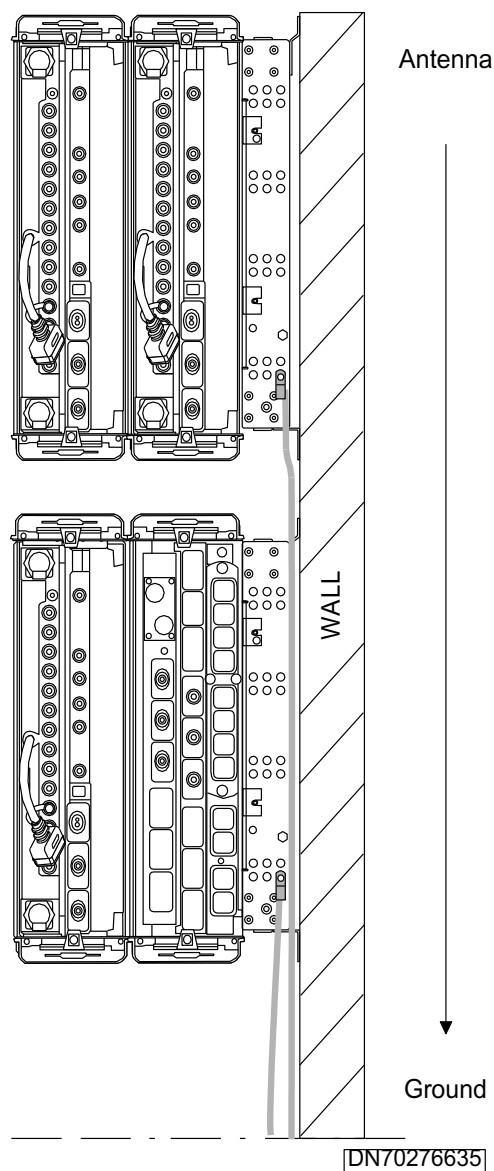


Figure 14. Grounding the plinth in a 1+1+1/2+2+2 wall configuration

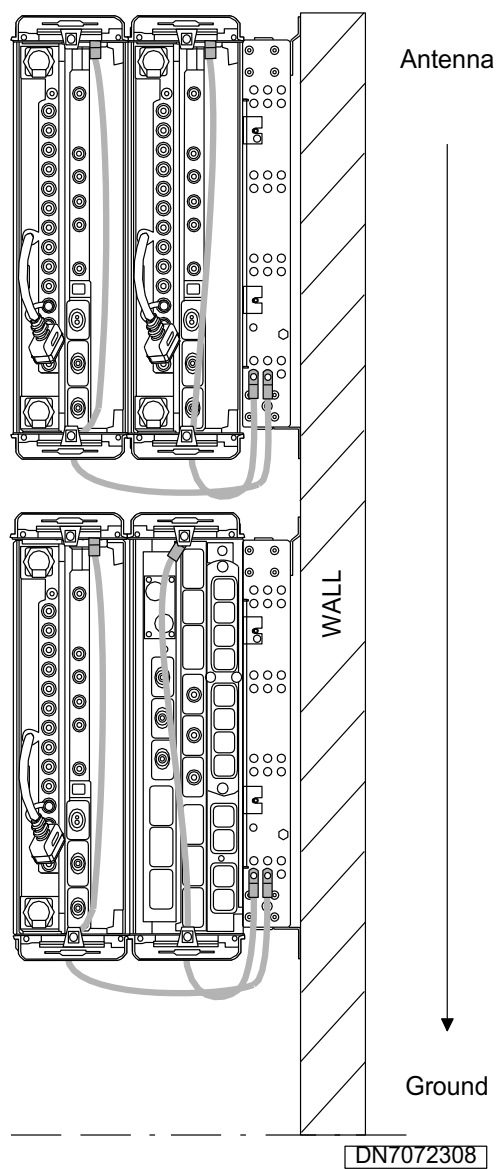


Figure 15. Grounding the modules in a 1+1+1/2+2+2 wall configuration

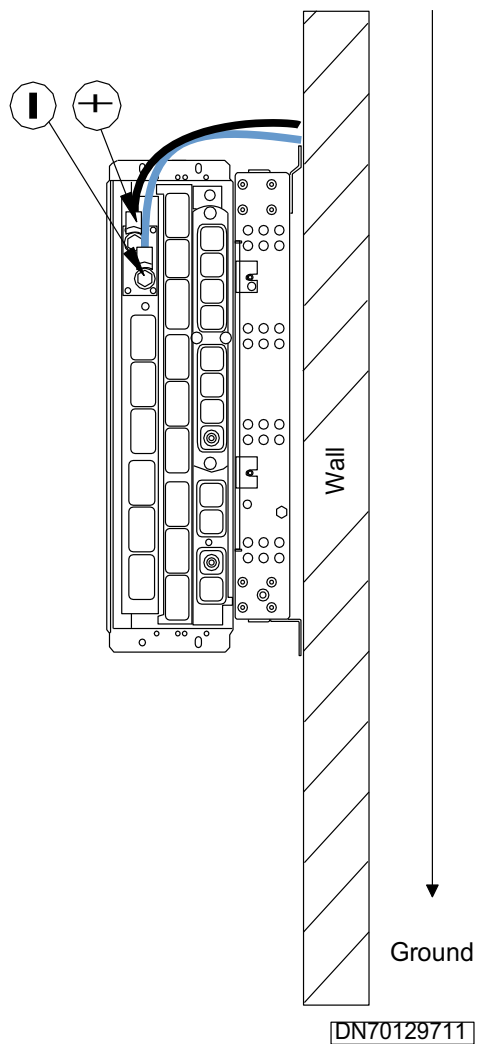


Figure 16. External power cables in a 1+1+1/2+2+2 wall configuration

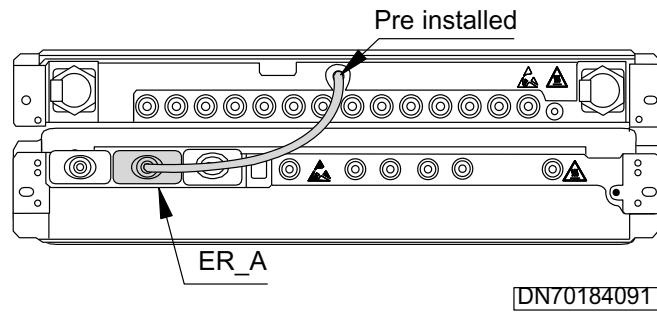


Figure 17. Dual Duplexer Module cable

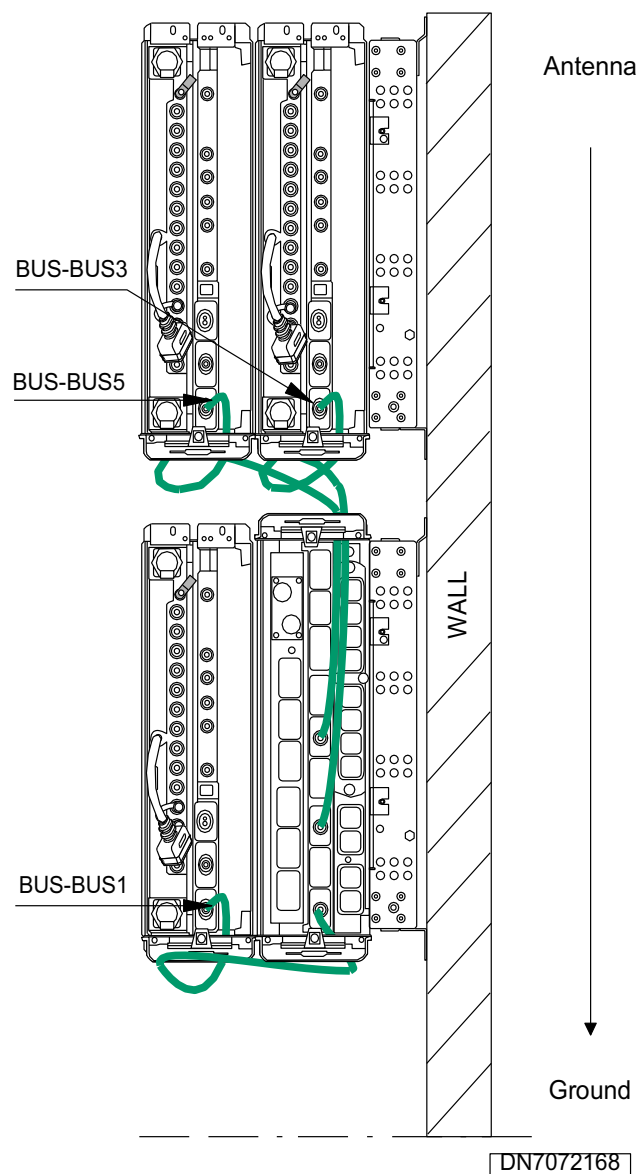


Figure 18. Bus cables in a 1+1+1/2+2+2 wall configuration

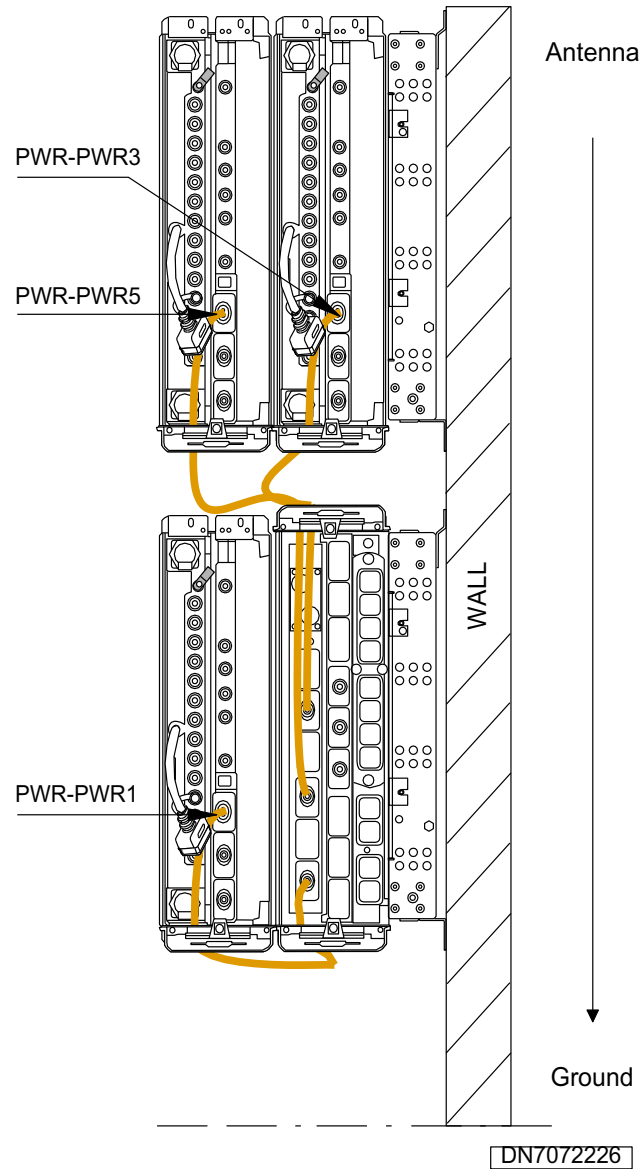


Figure 19. Internal power cables in a 1+1+1/2+2+2 wall configuration

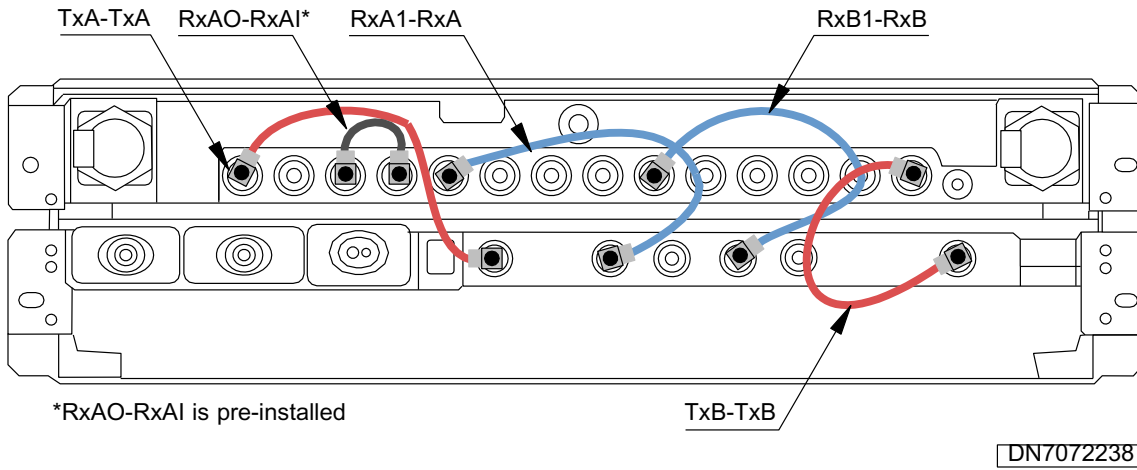


Figure 20. RF cables in 1+1+1/2+2+2 wall configuration

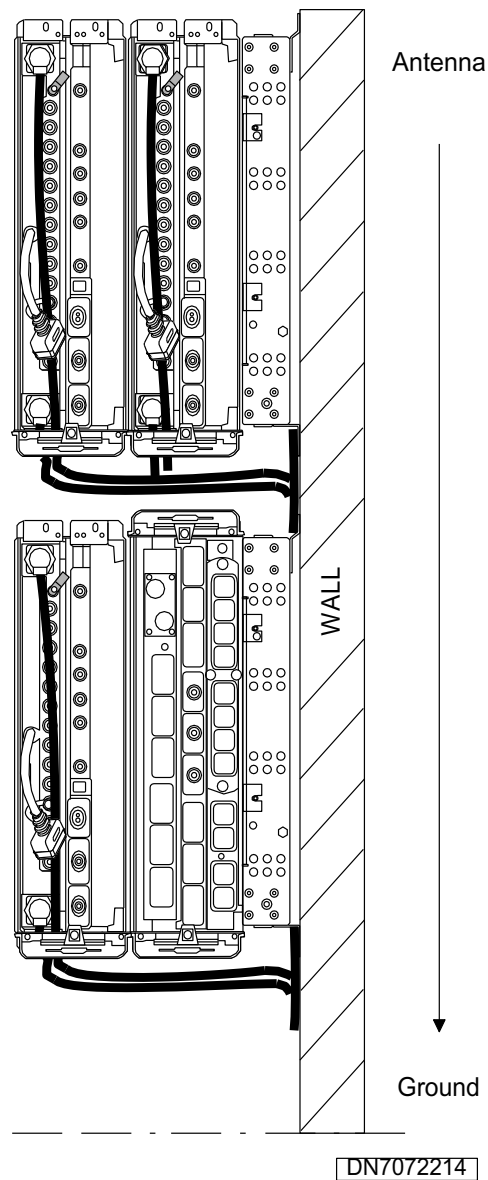


Figure 21. Antenna jumper cables in a 1+1+1/2+2+2 wall configuration

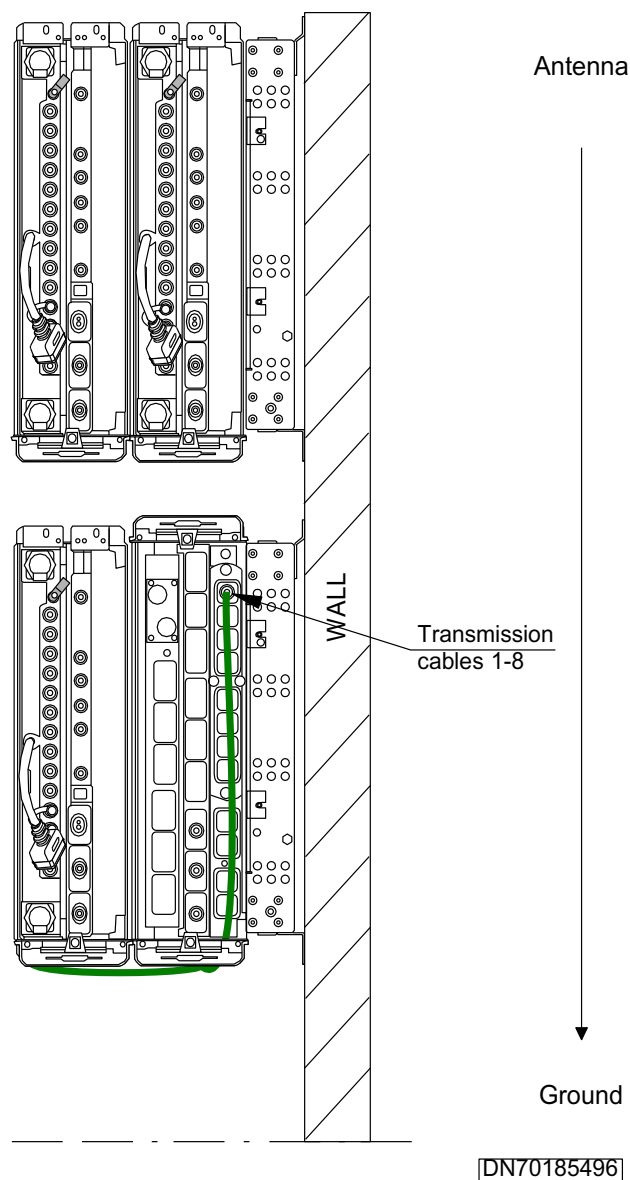
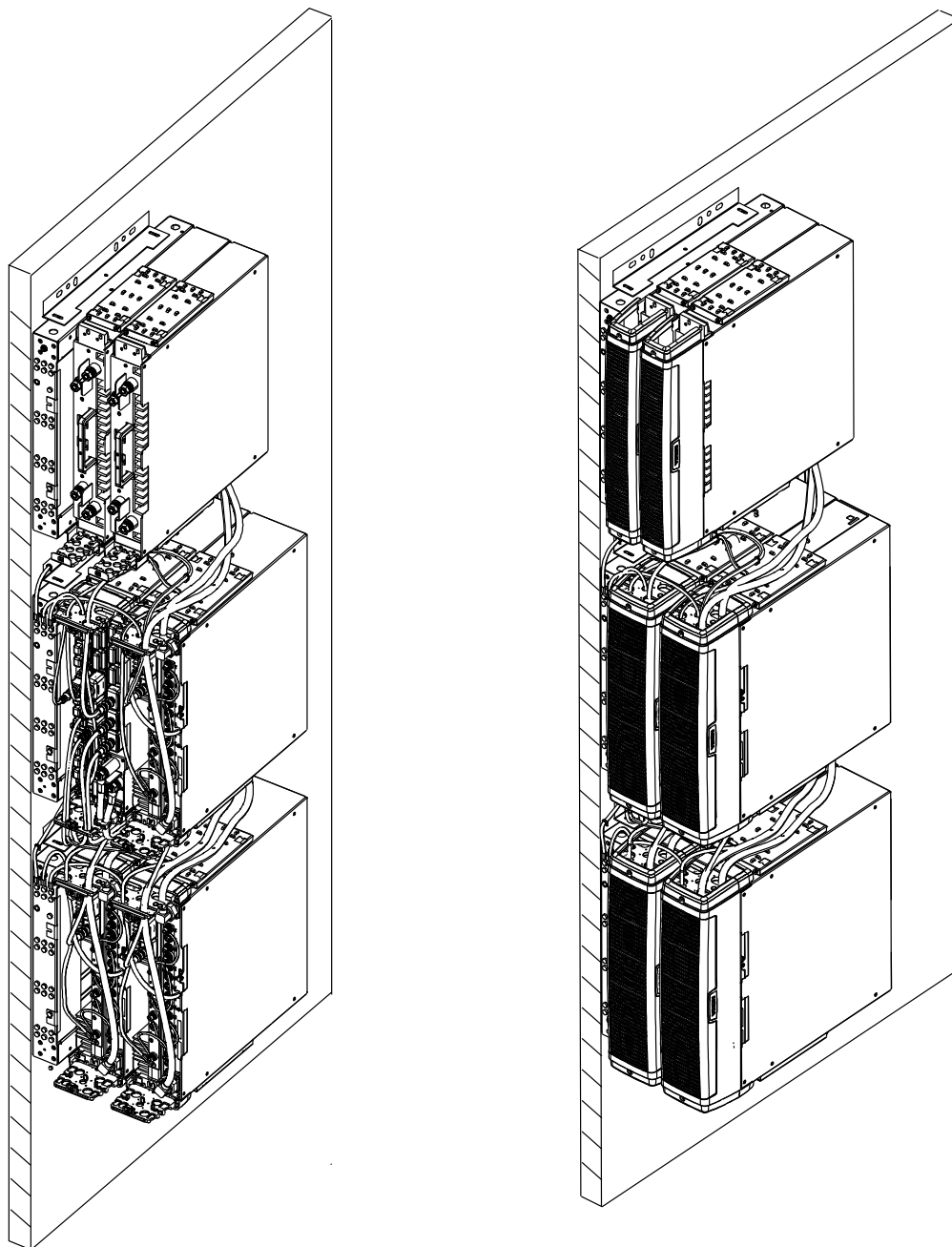


Figure 22. Transmission cables in 1+1+1/2+2+2 wall configuration

Expected outcome



DN70130016

Figure 23. A 1+1+1/2+2+2 wall configuration (with optional FPDAs): complete cabling and modules with covers on

2.3 Creating a 1+1+1/2+2+2 2-way 2UD on a pole

Before you start

To create this configuration, you need:

- three Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)



Steps

1. **Install the modules.**

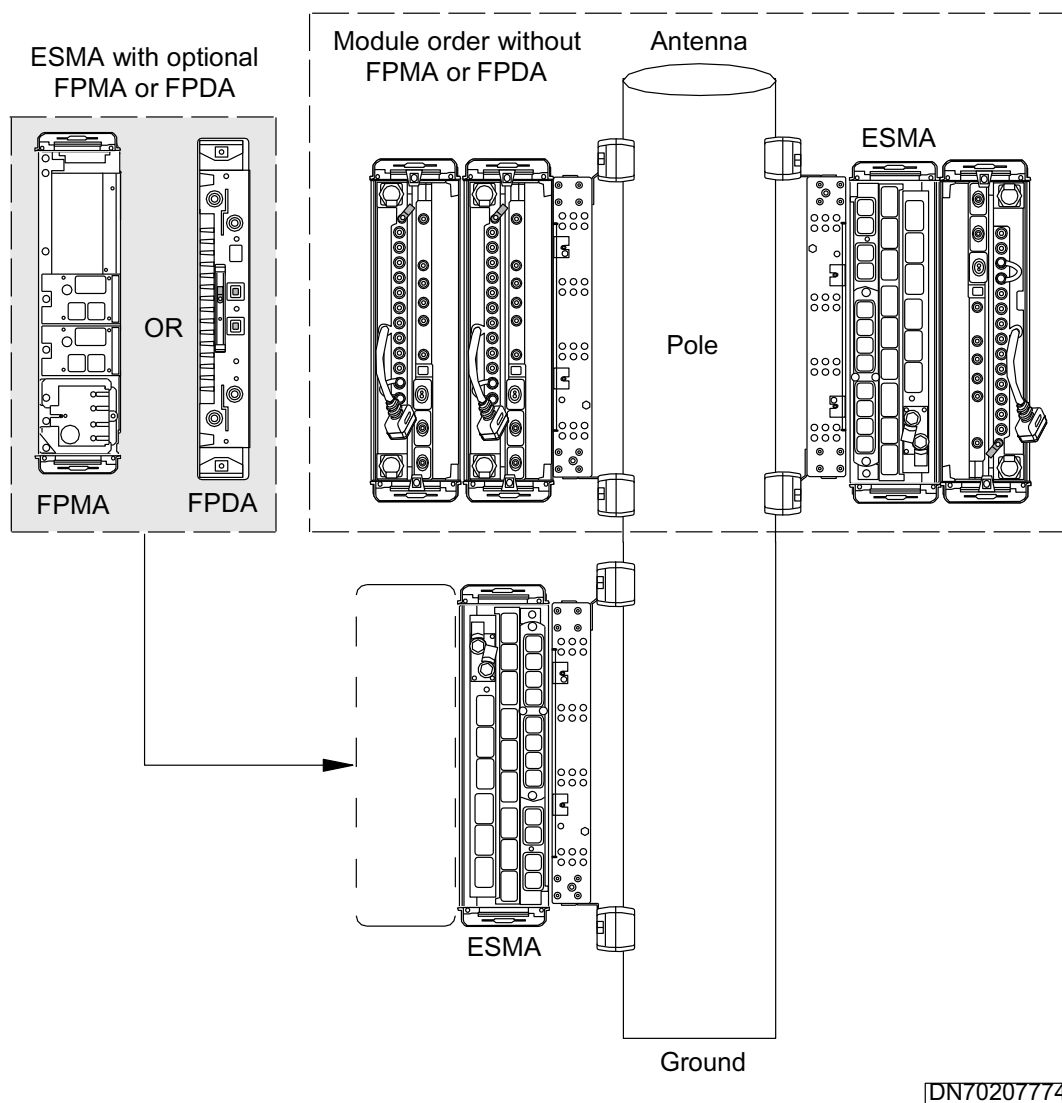


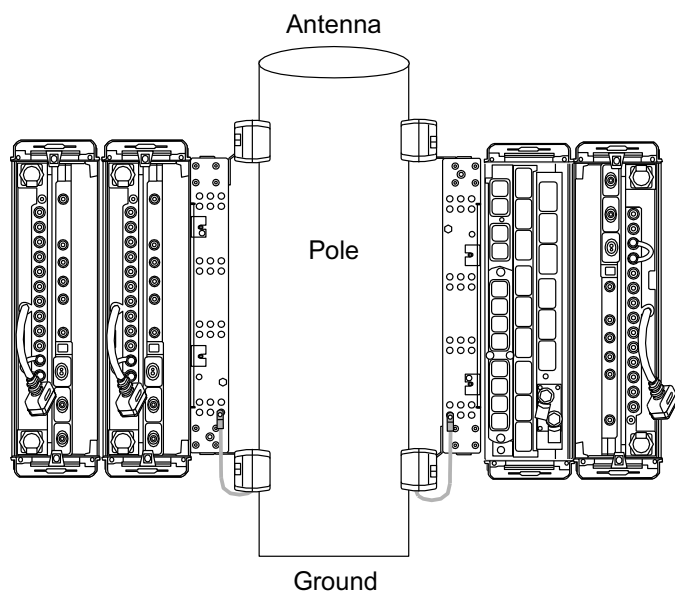
Figure 24. Module installation order in a 1+1+1/2+2+2 pole configuration

2. Connect the cables.

The order to connect the cable is as follows:

- Grounding cables
- External power cables
- Dual Duplexer Module cable
- Bus cables
- Internal power cables

- f. RF cables
- g. Antenna jumper cables
- h. Transmission cables



DN70276647

Figure 25. Grounding the plinth in a 1+1+1/2+2+2 pole configuration

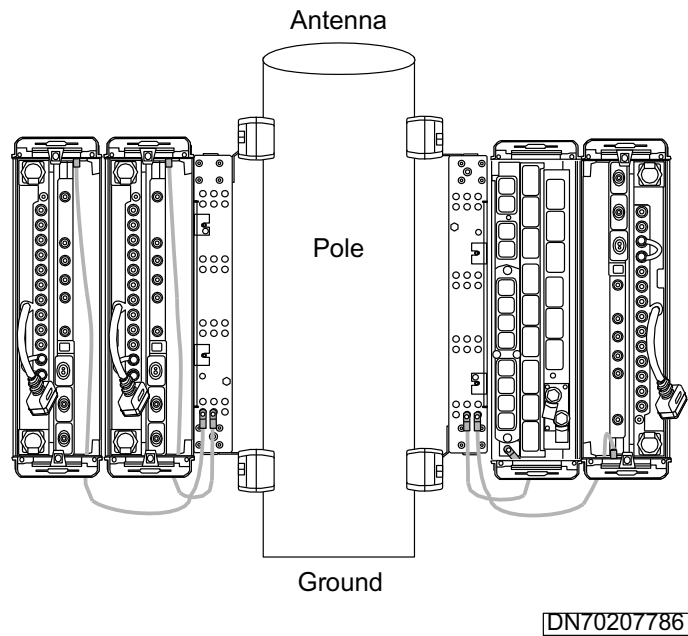


Figure 26. Grounding the modules in a 1+1+1/2+2+2 pole configuration

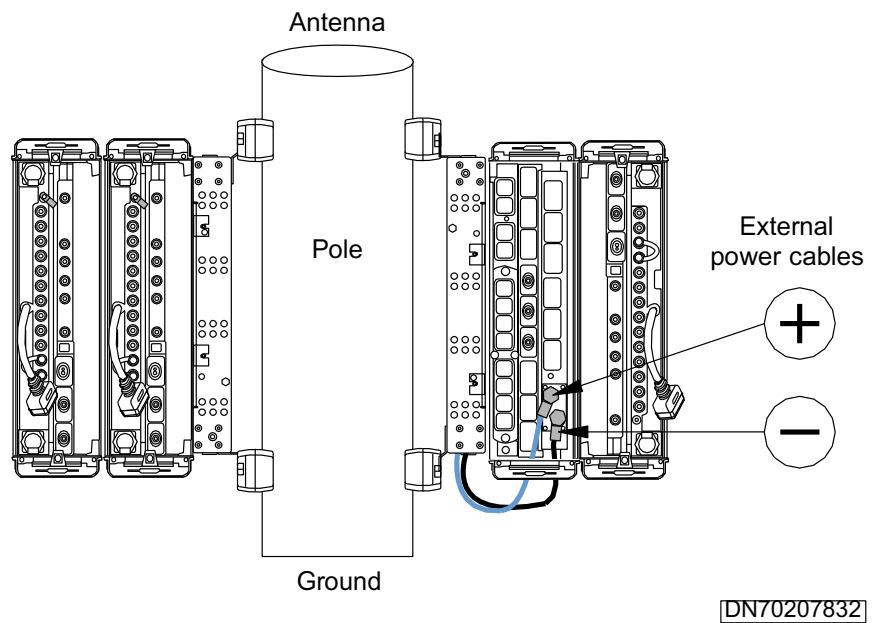


Figure 27. External power cables in a 1+1+1/2+2+2 pole configuration

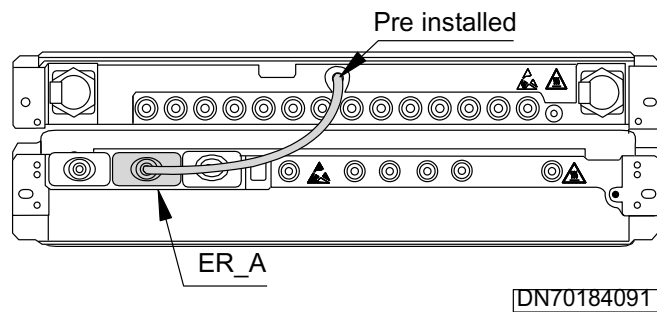


Figure 28. Dual Duplexer Module cable

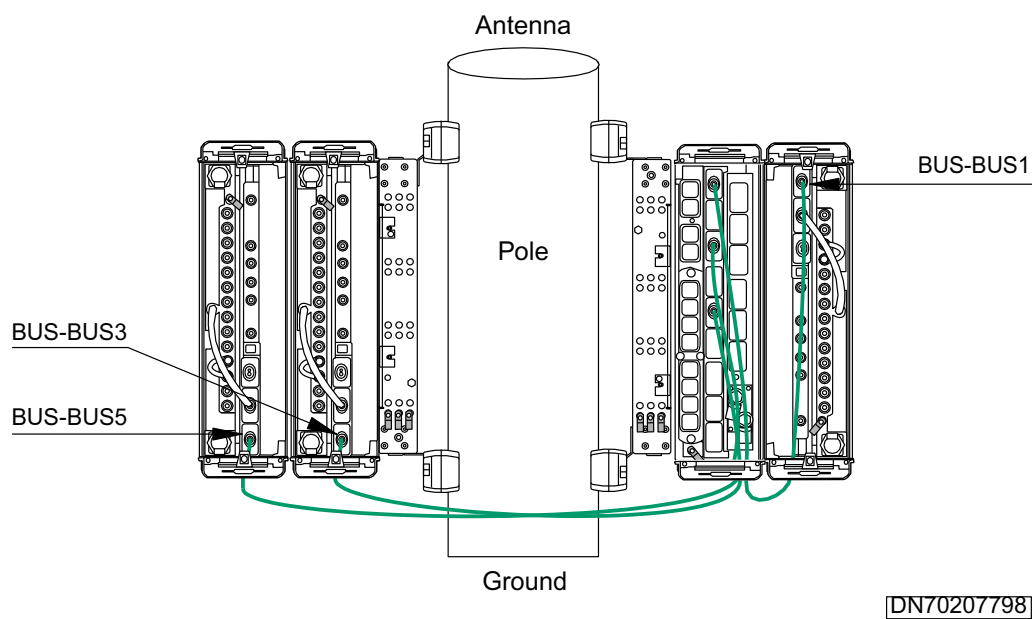


Figure 29. Bus cables in a 1+1+1/2+2+2 pole configuration

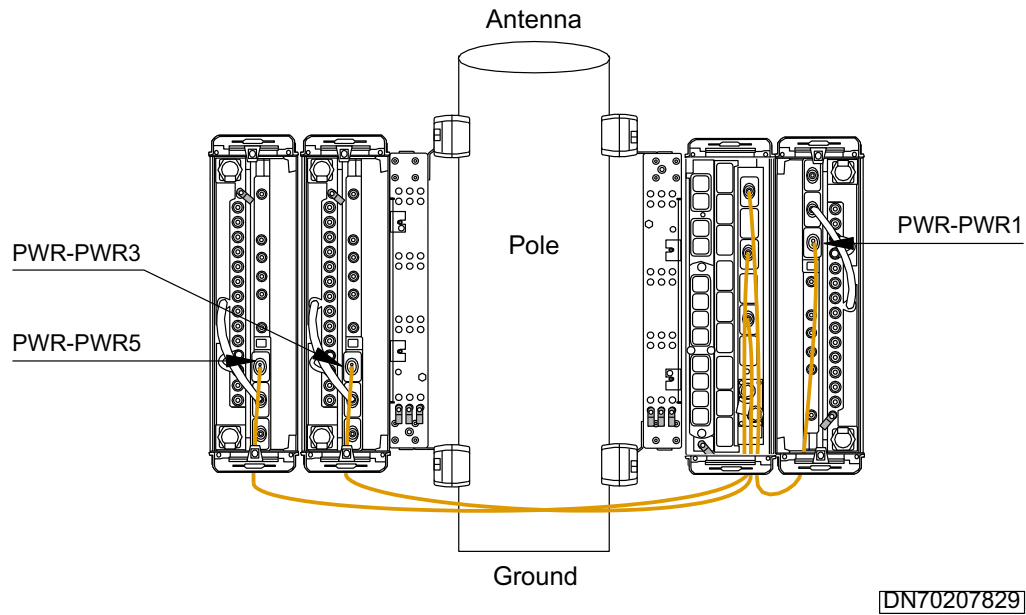


Figure 30. Internal power cables in a 1+1+1/2+2+2 pole configuration

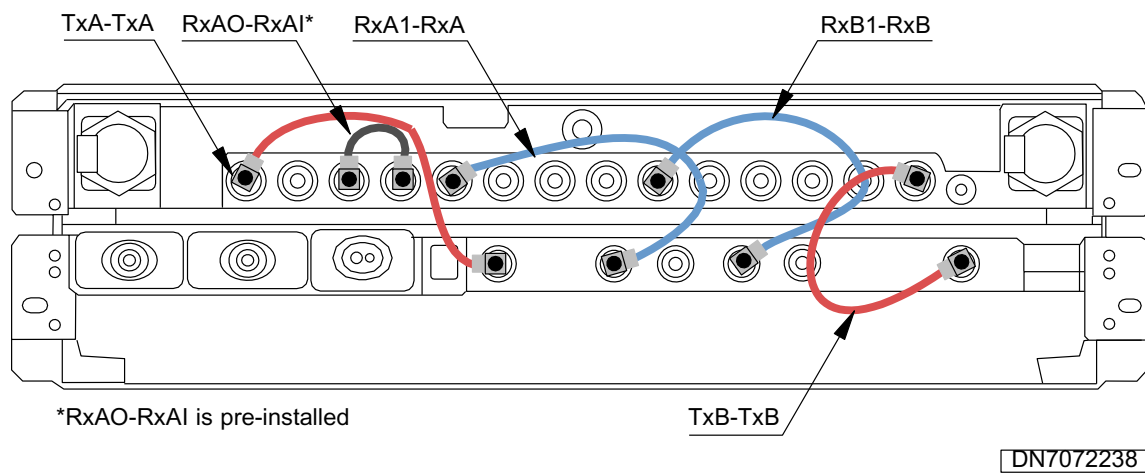


Figure 31. RF cables in a 1+1+1/2+2+2 configuration

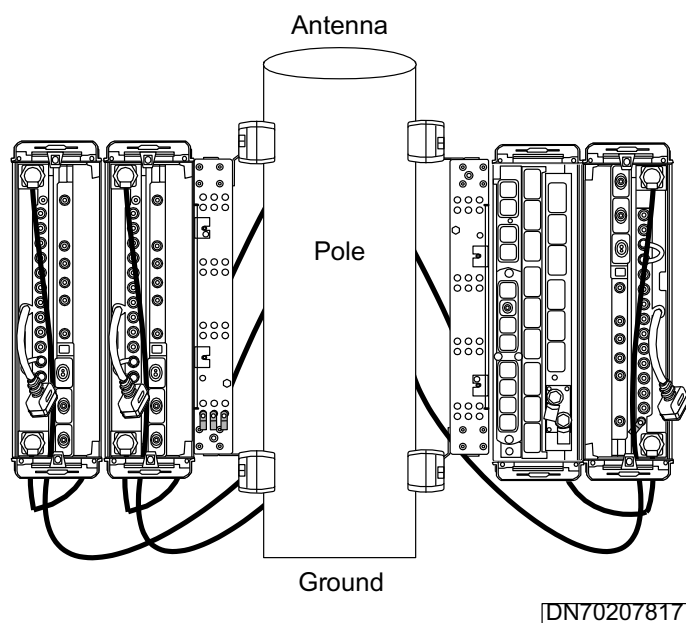


Figure 32. Antenna jumper cables in a 1+1+1/2+2+2 pole configuration

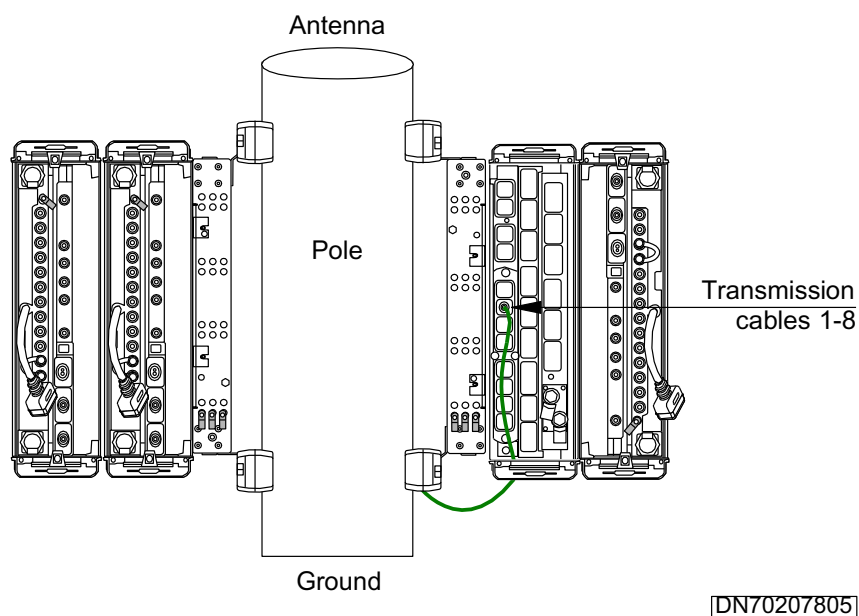


Figure 33. Transmission cables in a 1+1+1/2+2+2 pole configuration

Expected outcome

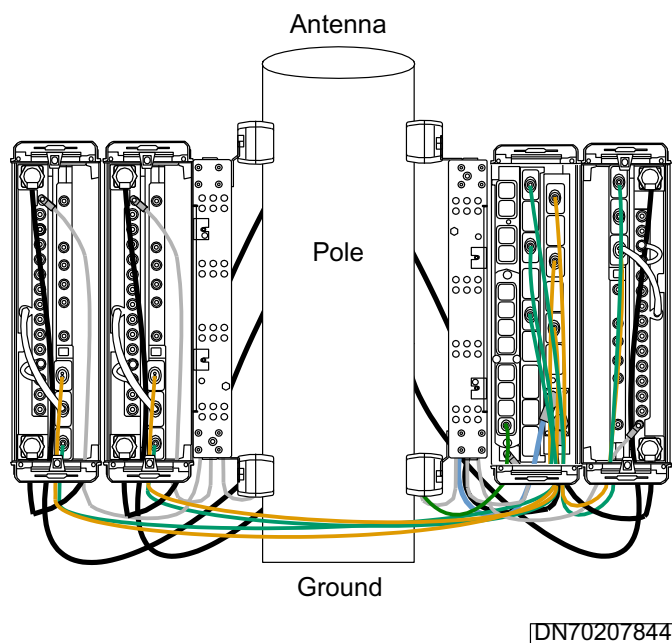


Figure 34. A 1+1+1/2+2+2 pole configuration: complete cabling (note: RF cabling as shown in figure *RF cables in a 1+1+1/2+2+2 configuration*)

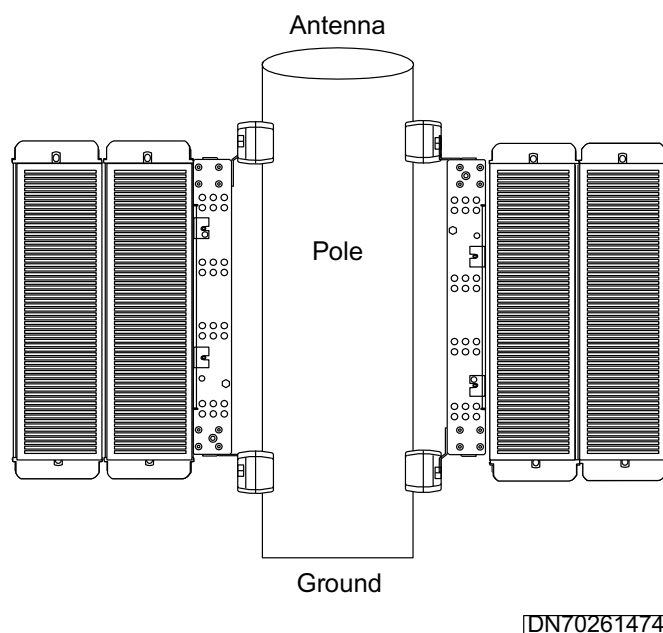


Figure 35. A 1+1+1/2+2+2 pole configuration: covers on

2.4 Creating a 1+1+1/2+2+2 bypass 2UD in FCIA

Before you start

To create this configuration, you need:

- three Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)



Steps

1. Install the modules.

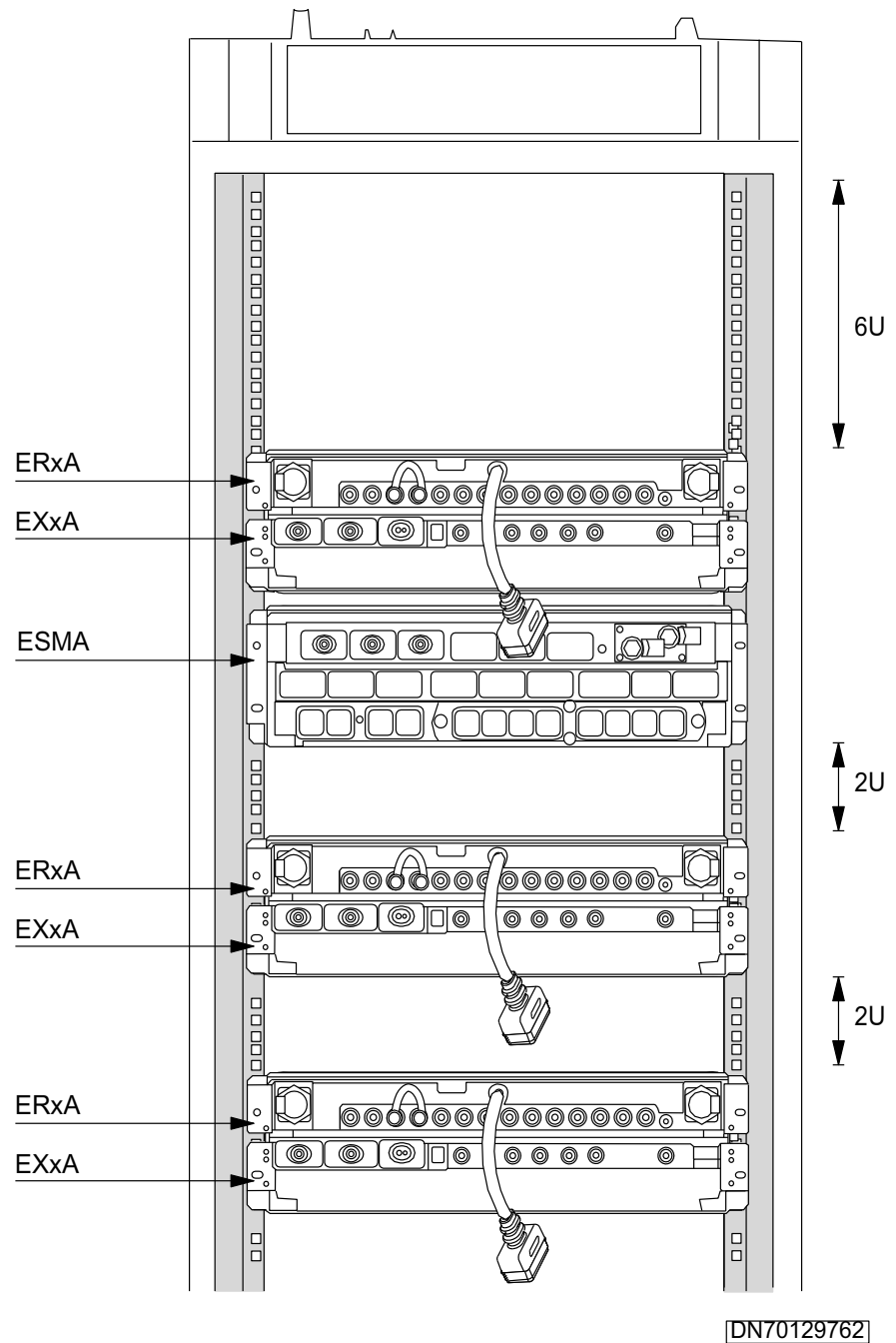


Figure 36. Module installation order in a 1+1+1/2+2+2 configuration in FCIA

2. Connect the cables.

The order to connect the cable is as follows:

- a. External power cables
- b. Dual Duplexer Module cable
- c. Bus cables
- d. Internal power cables
- e. RF cables
- f. Antenna jumper cables
- g. Transmission cables

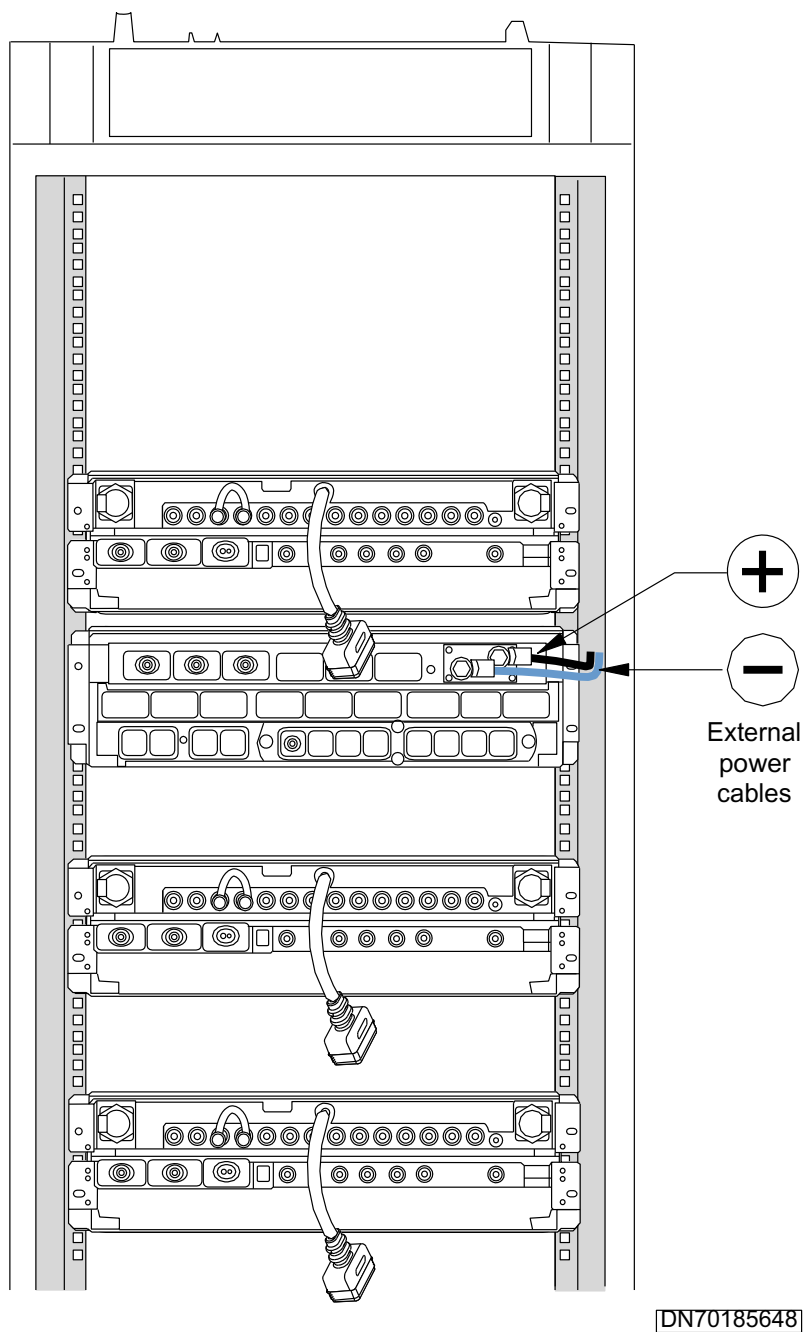


Figure 37. External power cables in a 1+1+1/2+2+2 FCIA configuration

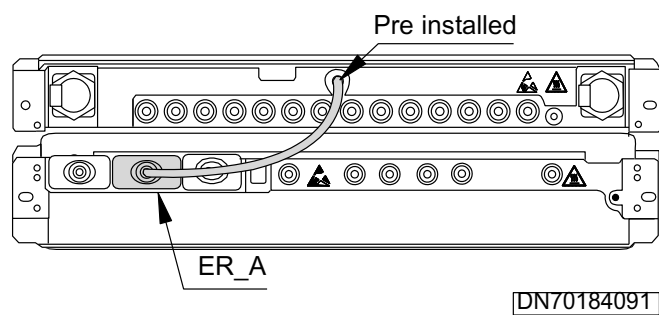


Figure 38. Dual Duplexer Module cable

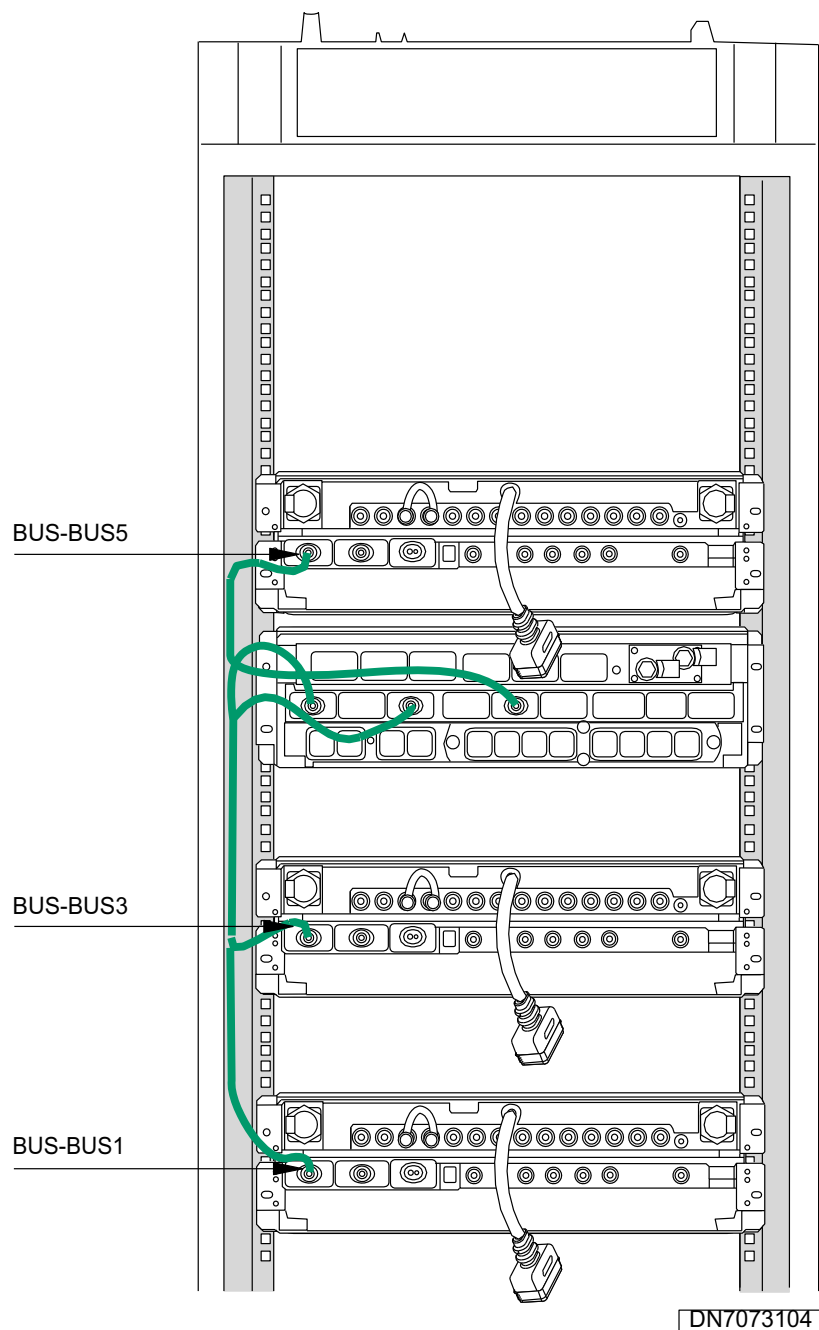


Figure 39. Bus cables in a 1+1+1/2+2+2 FCIA configuration

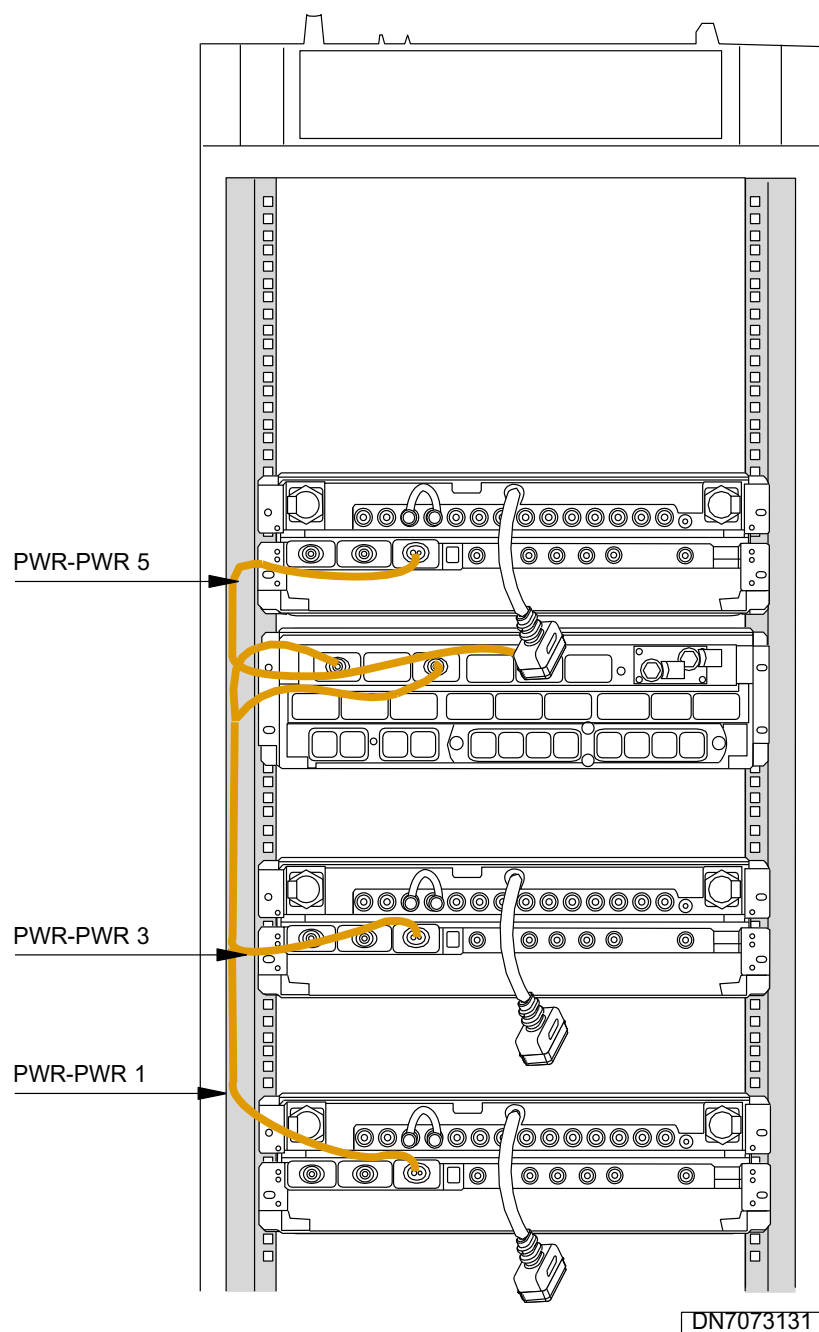


Figure 40. Internal power cables in a 1+1+1/2+2+2 FCIA configuration

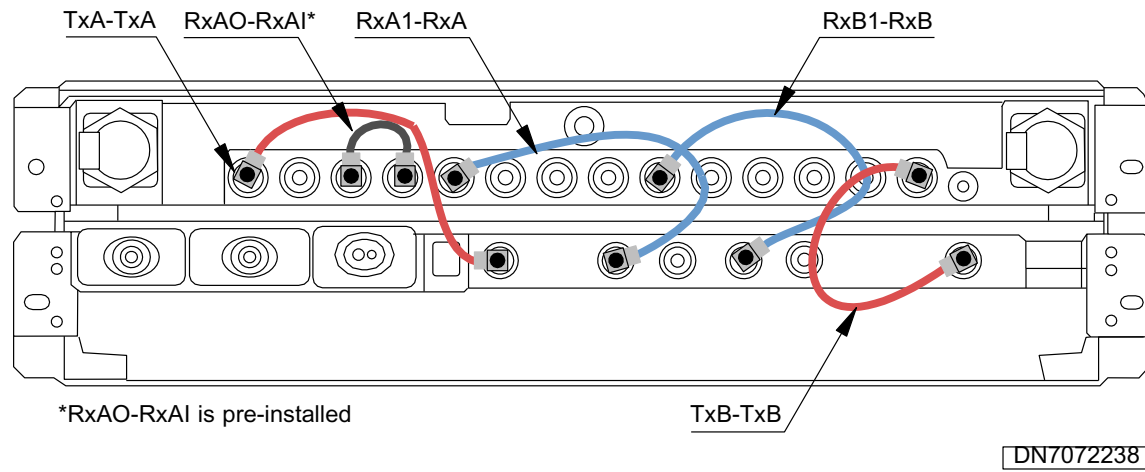


Figure 41. RF cables in a 1+1+1/2+2+2 configuration

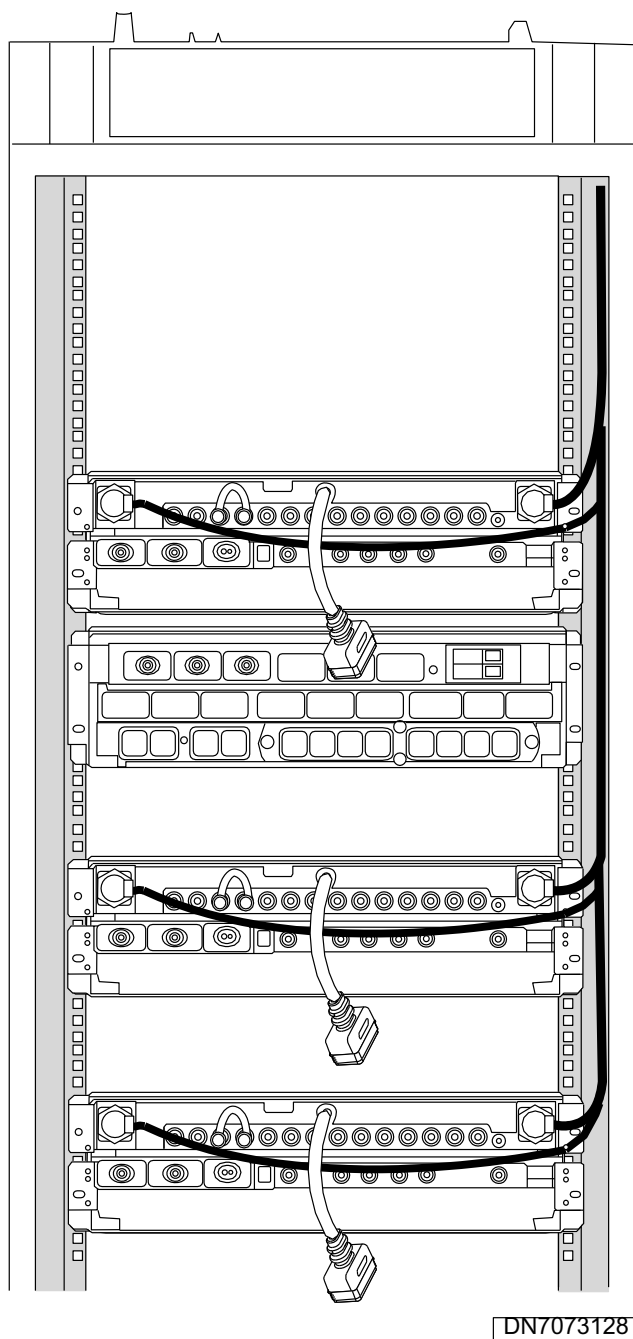


Figure 42. Antenna jumper cables in 1+1+1/2+2+2 FCIA configuration

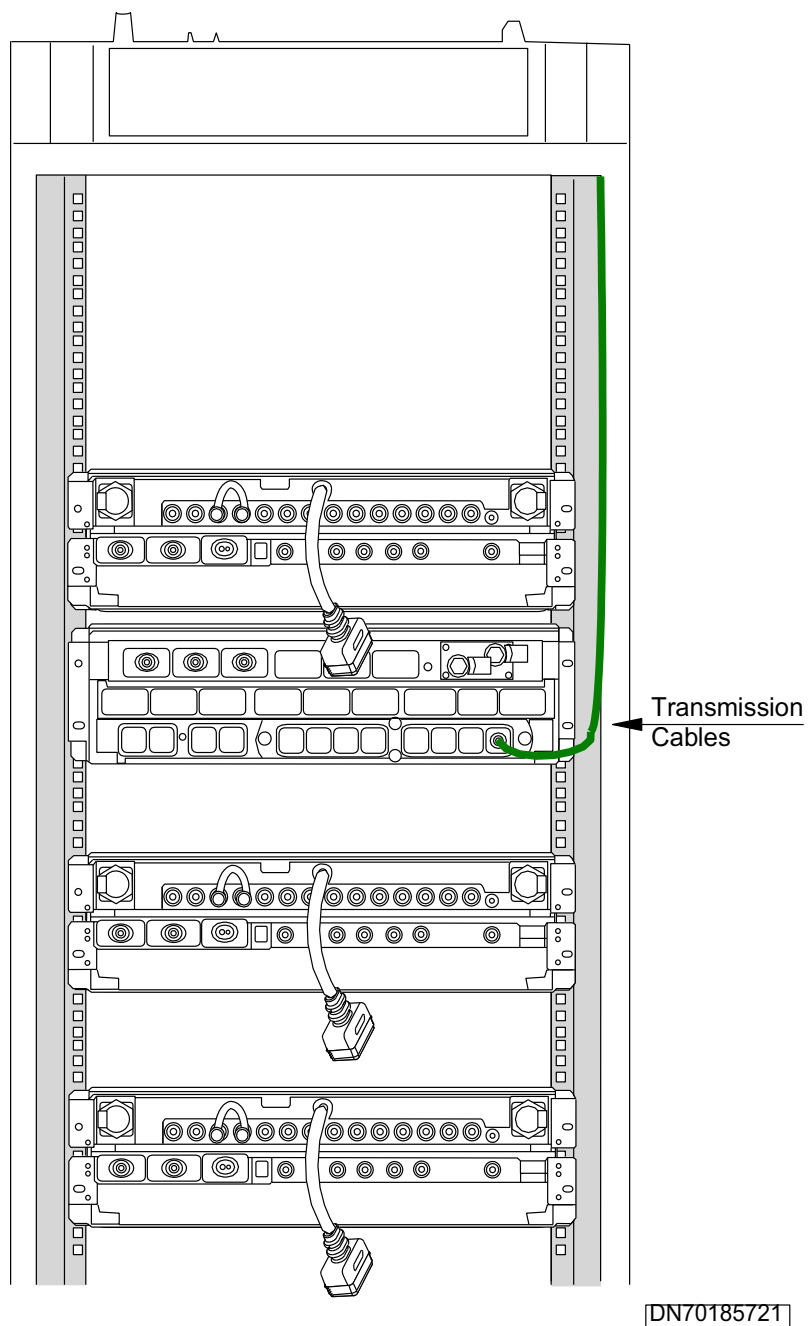
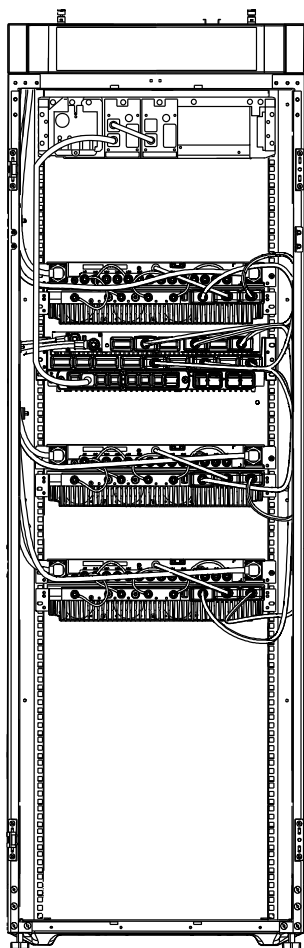


Figure 43. Transmission cables in 1+1+1/2+2+2 FCIA configuration

Expected outcome



DN70129786

Figure 44. 2+2+2 FCIA configuration: complete cabling (with optional FPMA).
Note: RF cabling as shown in figure *RF cables in a 1+1+1/2+2+2 configuration*.

2.5 Creating a 1+1+1/2+2+2 bypass 2UD in FCOA

Before you start

To create a 1+1+1 or 2+2+2 FCOA configuration, you need:

- three Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)



Steps

1. **Install the modules.**

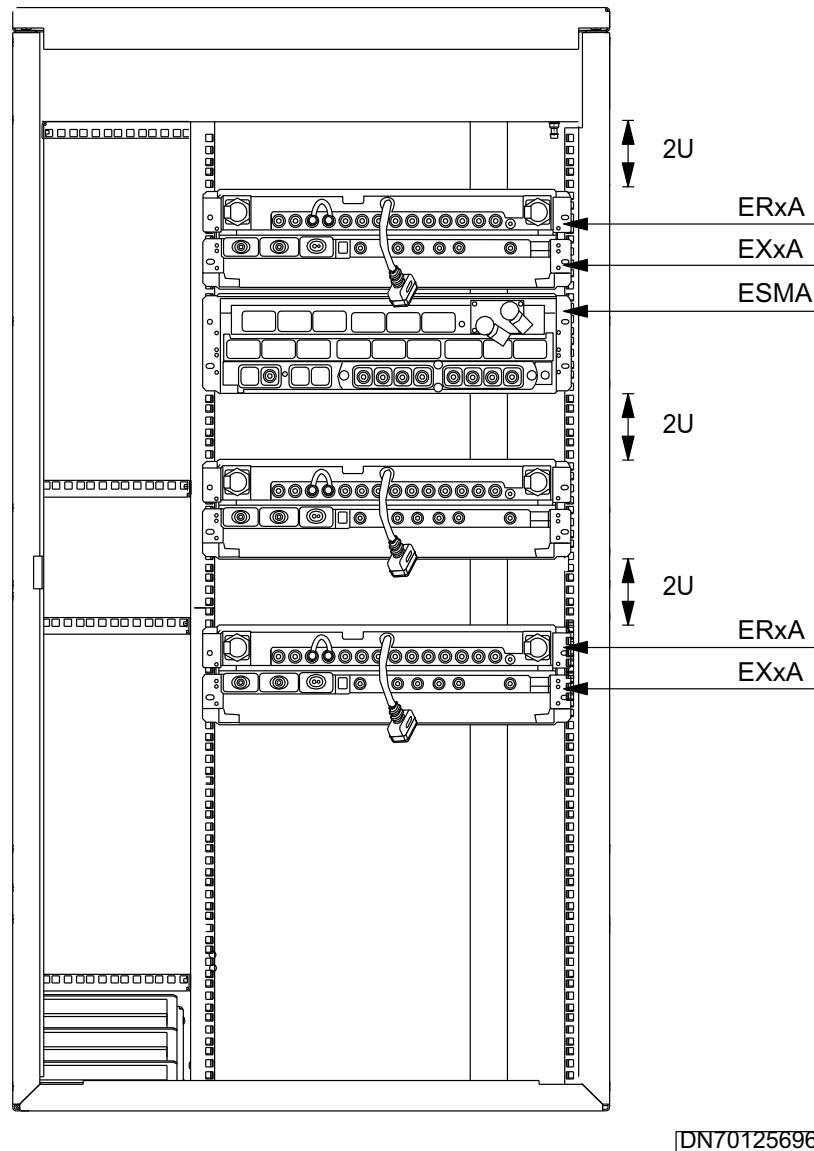


Figure 45. Modules in a 1+1+1/2+2+2 FCOA configuration

2. Connect the cables.

The order to connect the cable is as follows:

- External power cables
- Dual Duplexer Module cable
- Bus cables

- d. Internal power cables
- e. RF cables
- f. Antenna jumper cables
- g. Transmission cables

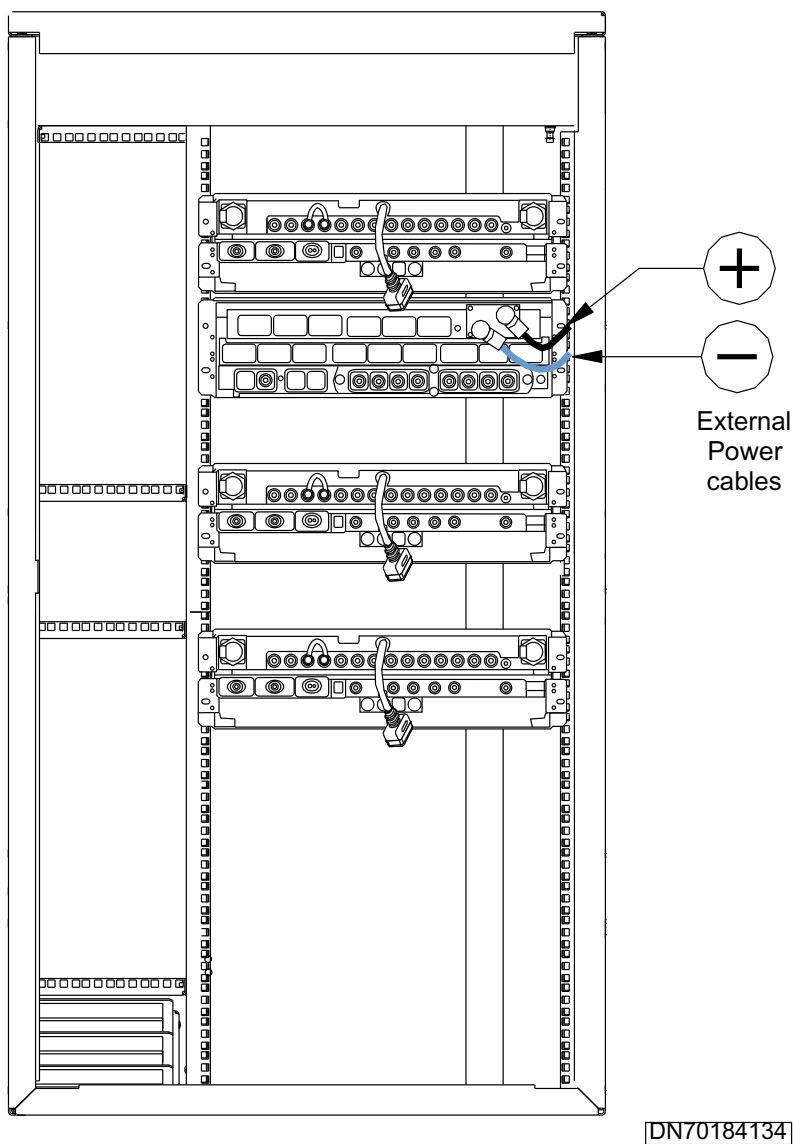


Figure 46. External power cables in a 1+1+1/2+2+2 FCOA configuration

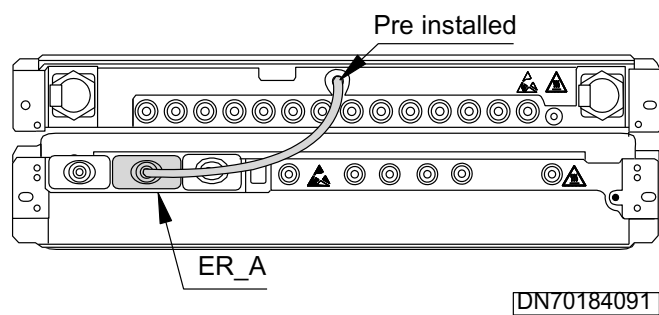


Figure 47. Dual Duplexer Module cable

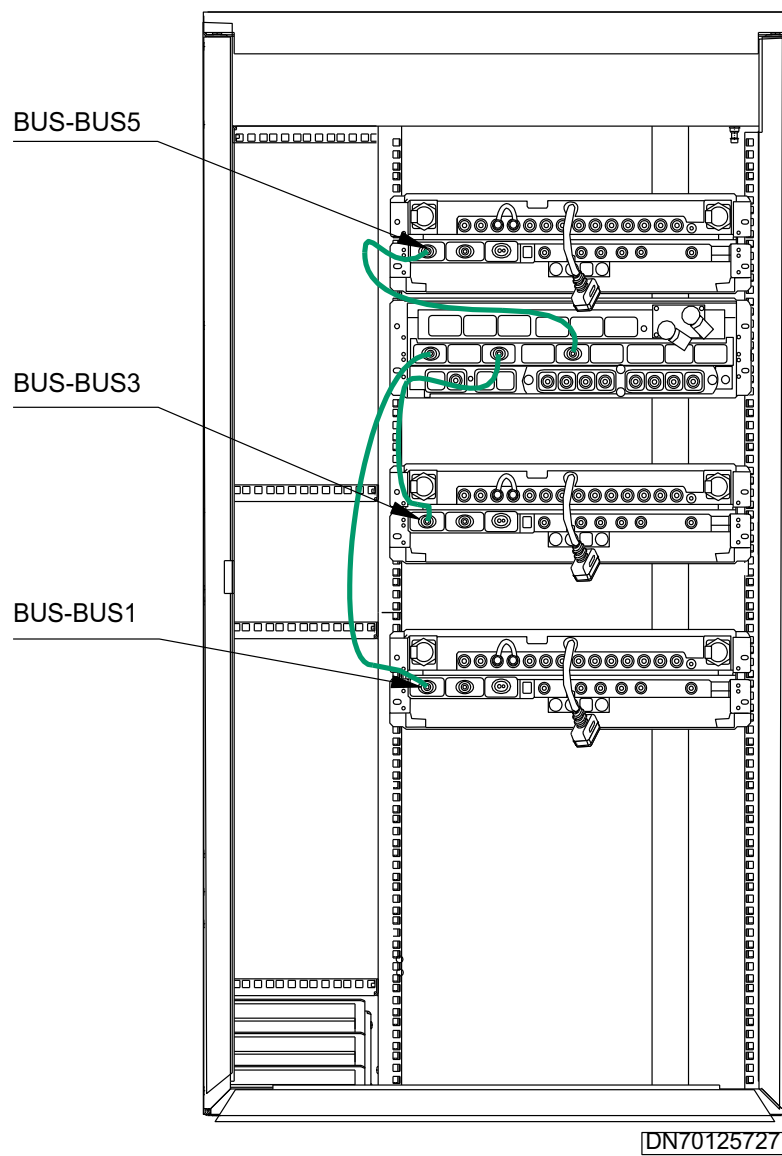


Figure 48. Bus cables in a 1+1+1/2+2+2 FCOA configuration

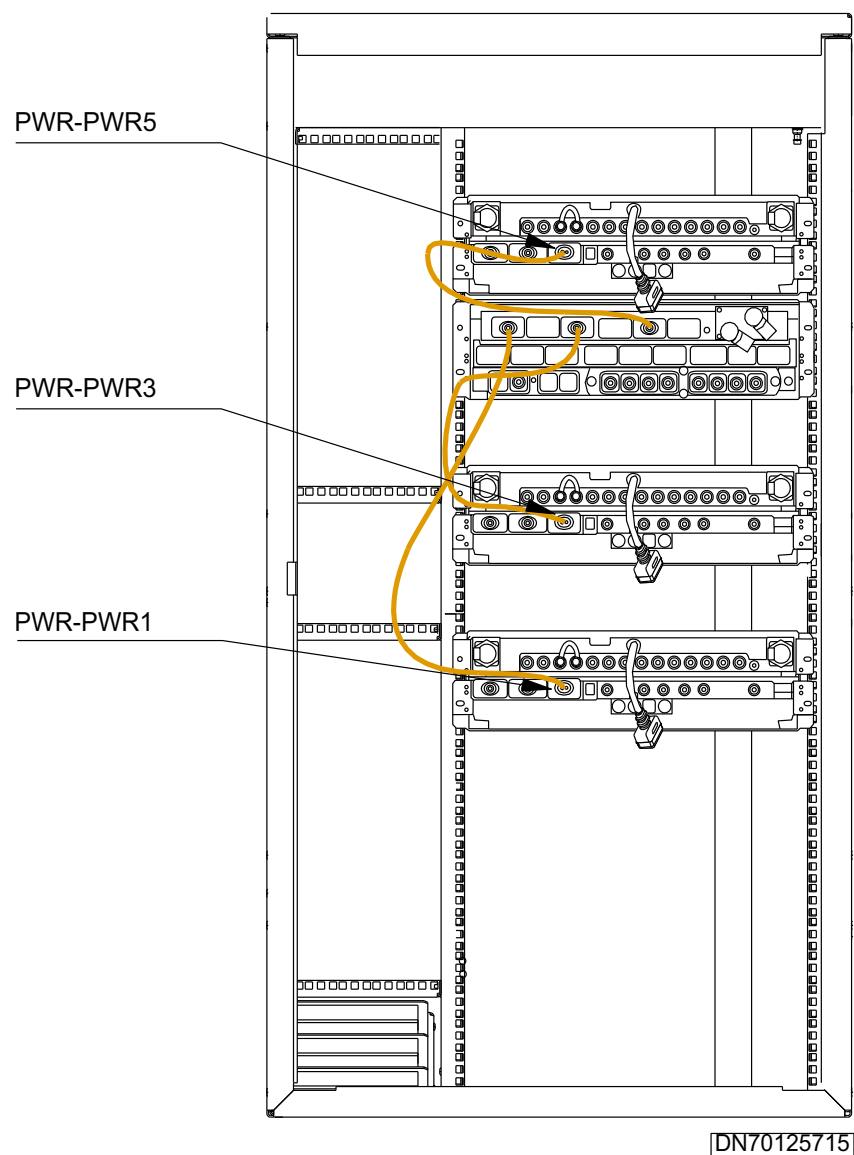


Figure 49. Internal power cables in a 1+1+1/2+2+2 FCOA configuration

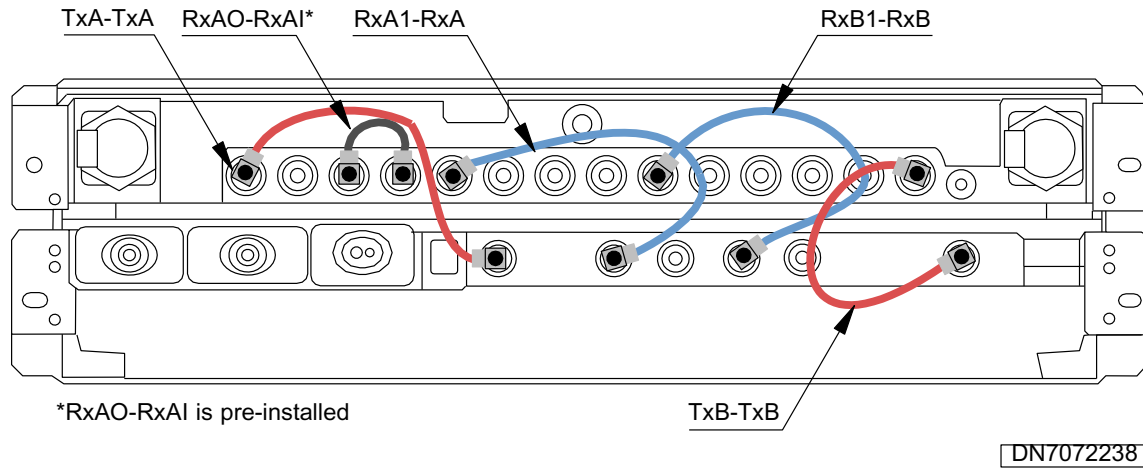
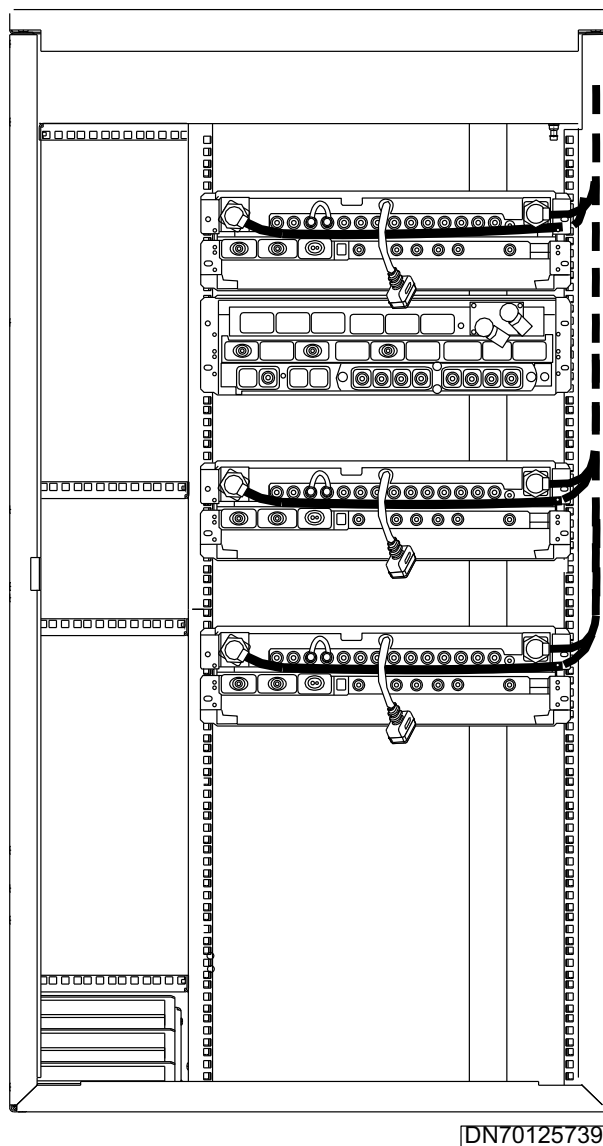


Figure 50. RF cables in a 1+1+1/2+2+2 configuration



DN70125739

Figure 51. Antenna jumper cables in a 1+1+1/2+2+2 FCOA configuration

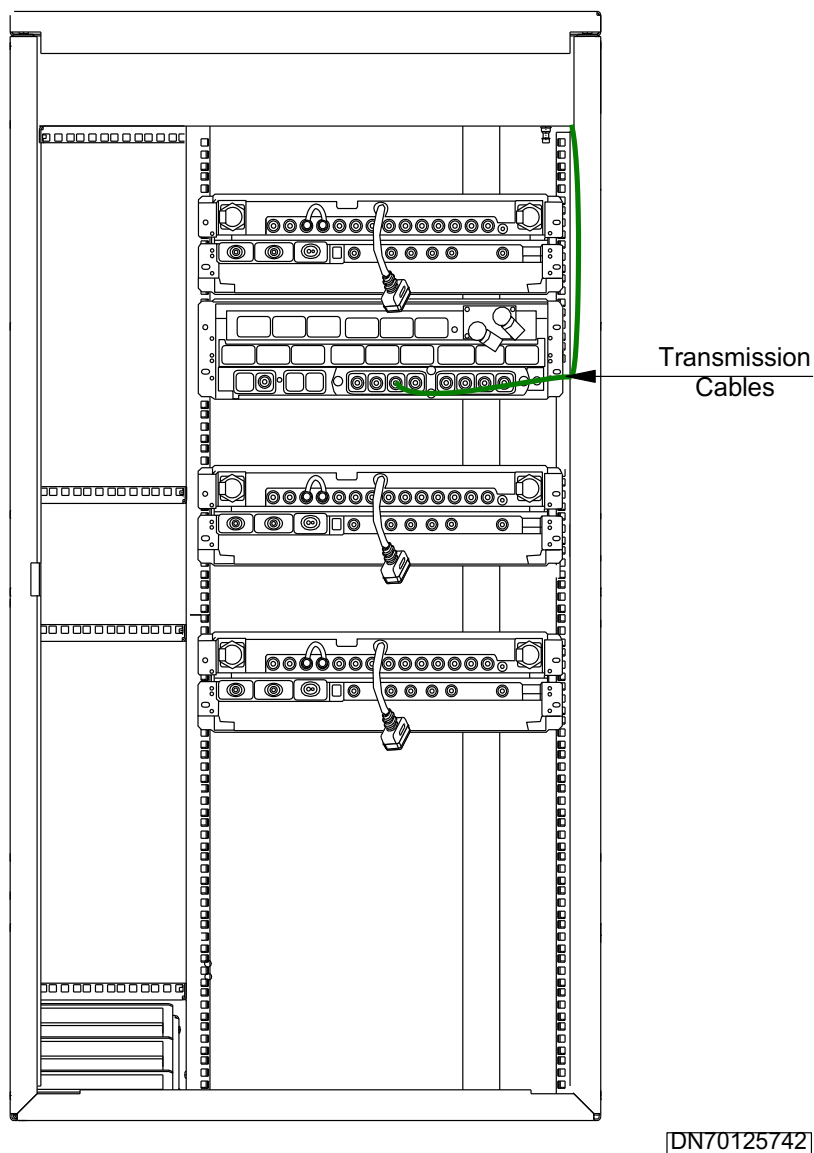
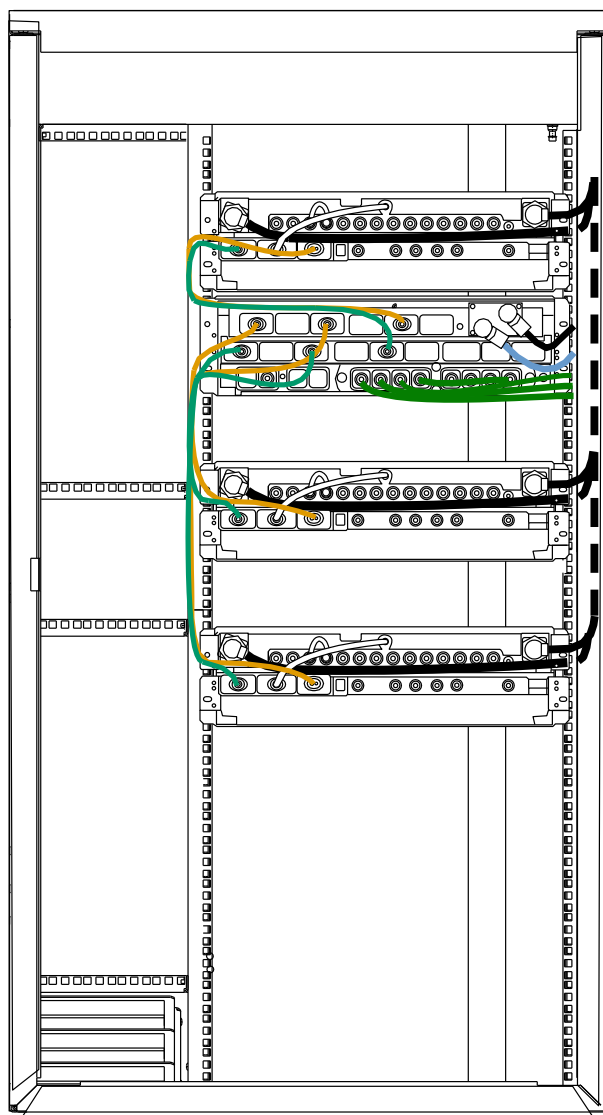


Figure 52. Transmission cables in a 1+1+1/2+2+2 FCOA configuration

Expected outcome



DN70125754

Figure 53. A 1+1+1/2+2+2 FCOA configuration: complete cabling (note: RF cabling as shown in figure *RF cables in a 1+1+1/2+2+2 configuration*)

3

Creating 3+3+3/4+4+4 2-way 2UD configurations

3.1 Creating a 3+3+3/4+4+4 2-way 2UD in a stack (with EWxx)

Before you start

For creating this configuration, you need:

- six Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)
- six Wideband Combiner Sub-modules (EWxx)



Steps

1. **Install the Wideband Combiner Sub-module in the Dual TRX Module, and install the modules.**

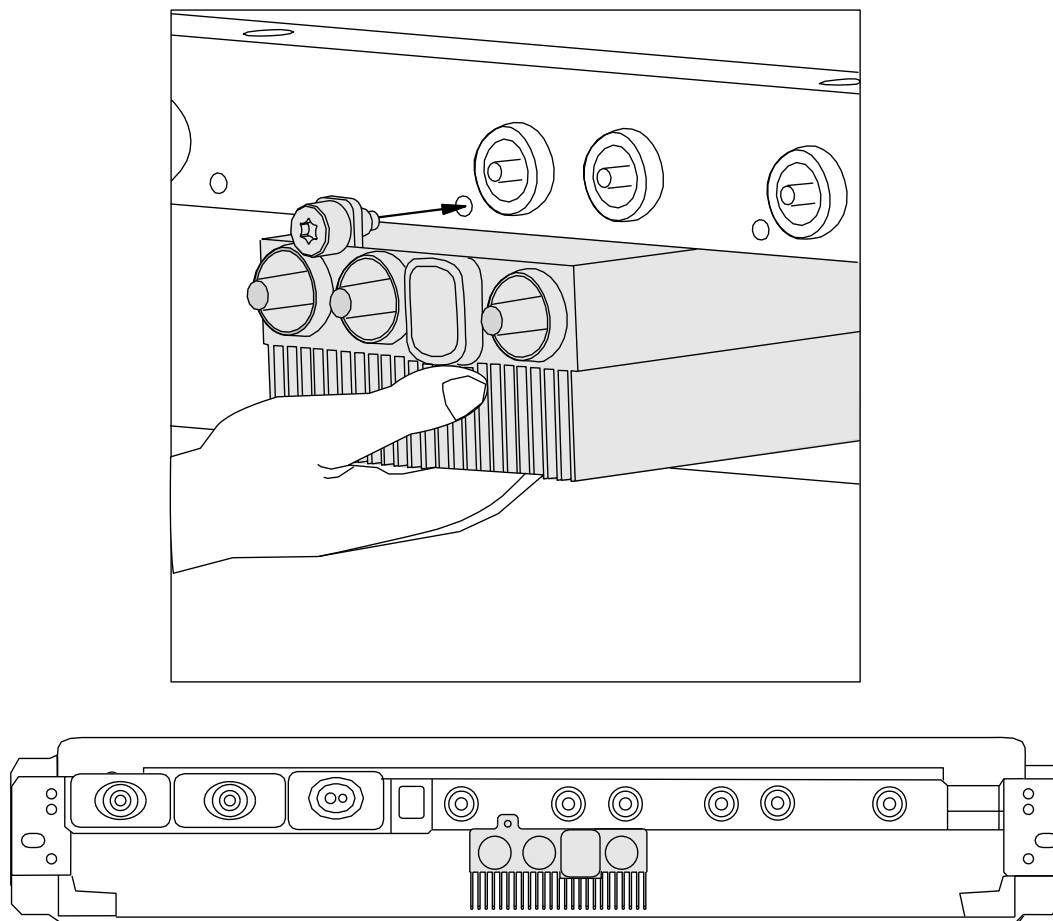


Figure 54. Installing Wideband Combiner Sub-module

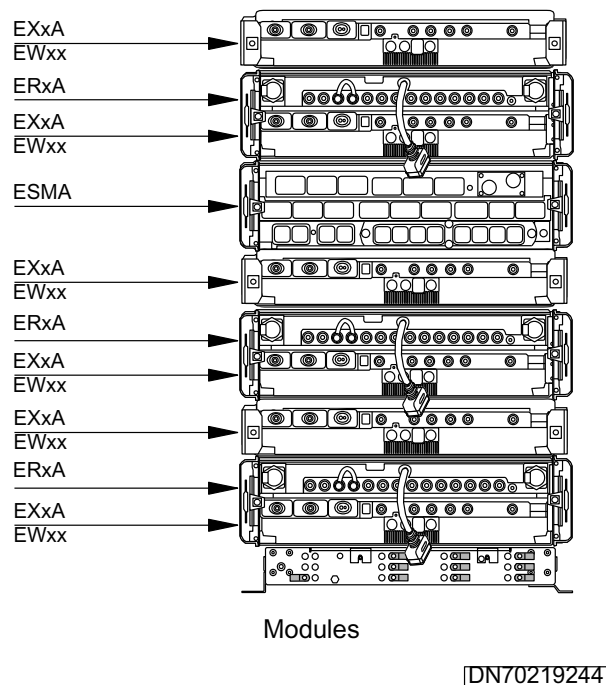
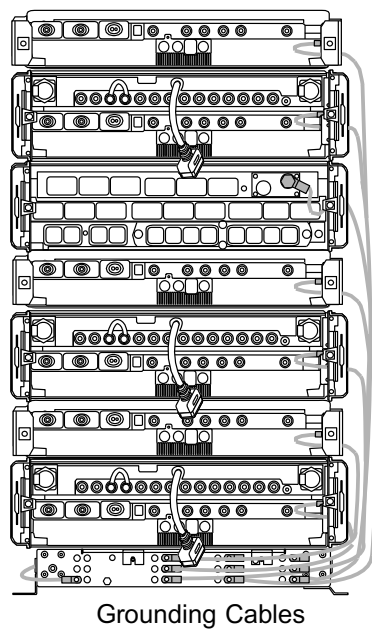


Figure 55. Modules in a 3+3+3/4+4+4 stack configuration

2. Connect the cables.

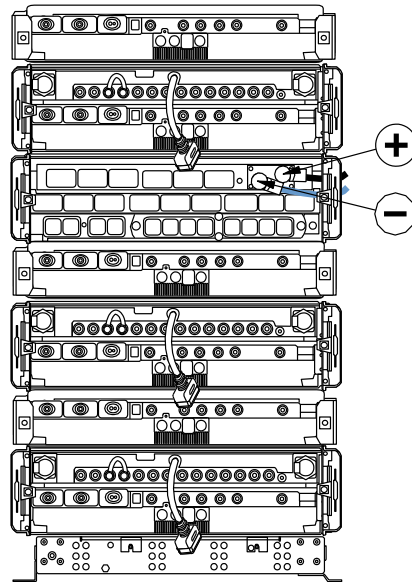
The order to connect the cables is as follows:

- a. Grounding cables
- b. External power cables
- c. Dual Duplexer Module cable
- d. Bus cables
- e. Internal power cables
- f. RF cables
- g. Antenna jumper cables
- h. Transmission cables



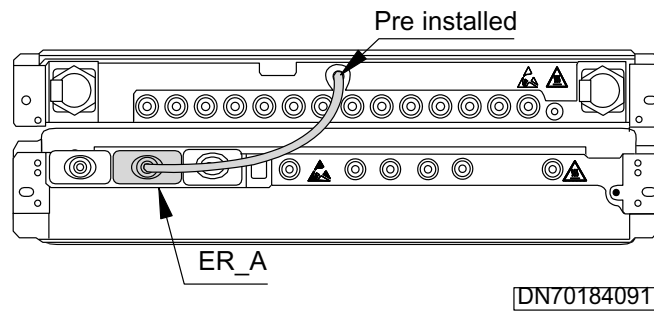
DN7073825

Figure 56. Grounding cables in a 3+3+3/4+4+4 stack configuration



DN70219256

Figure 57. External power cables in a 3+3+3/4+4+4 stack configuration



DN70184091

Figure 58. Dual Duplexer Module cable

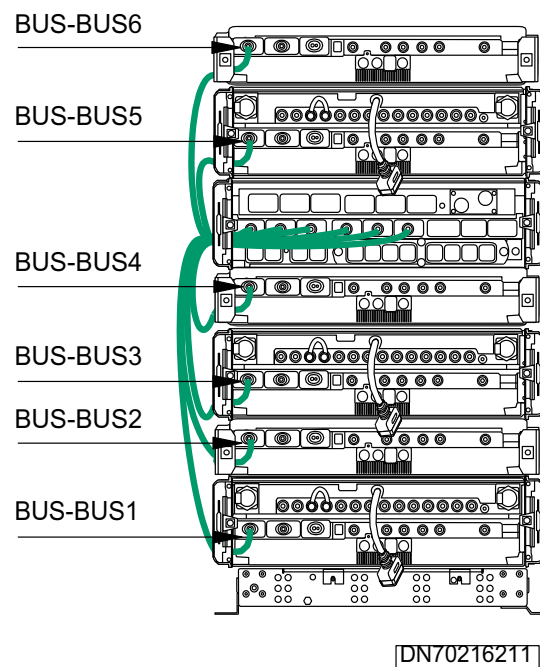


Figure 59. Bus cables in a 3+3+3/4+4+4 stack configuration

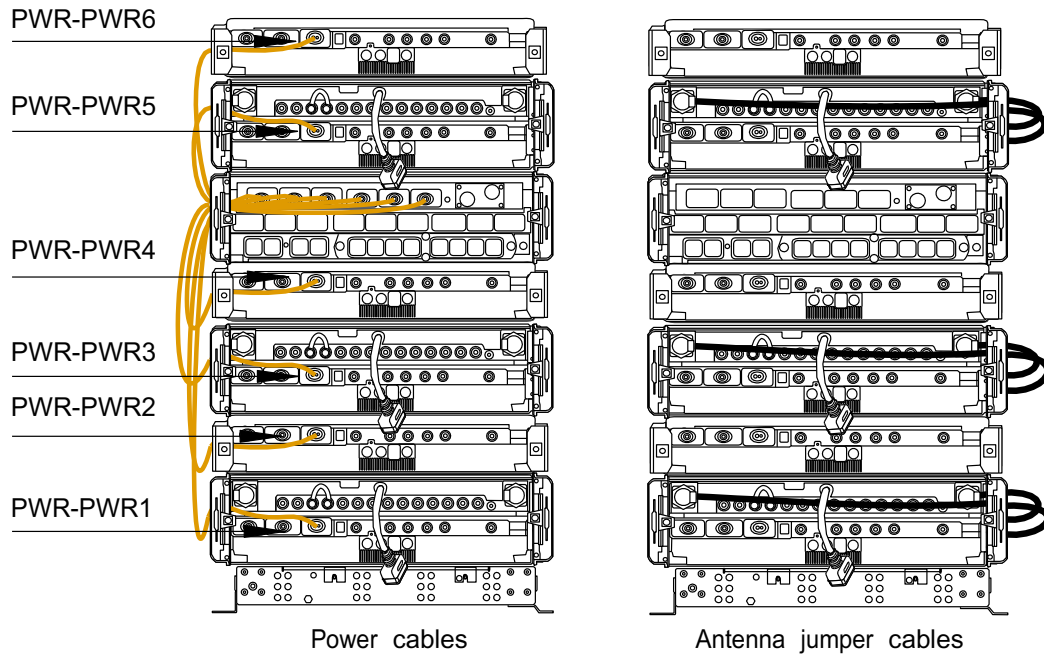
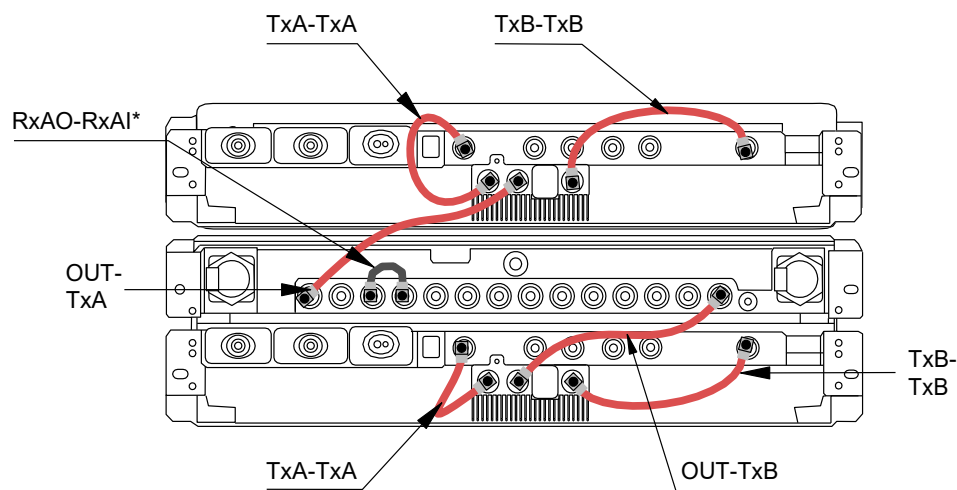
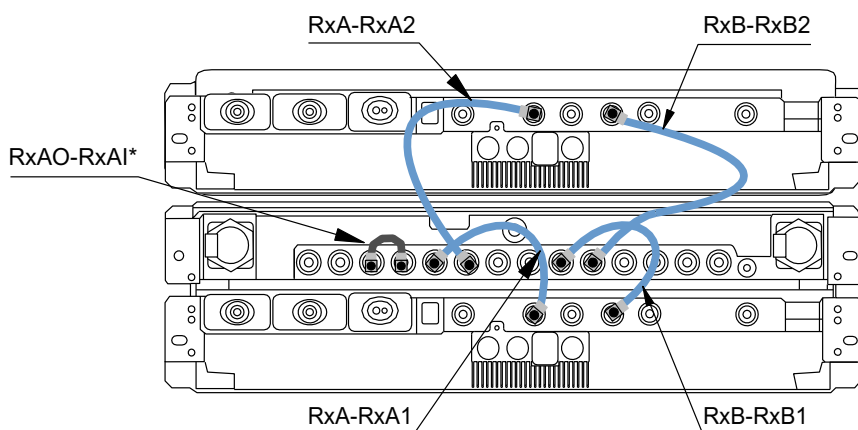


Figure 60. Internal power cables and antenna jumper cables in a 3+3+3/4+4+4 stack configuration



TX Cables

*pre-installed



RX Cables

*pre-installed

DN70154222

Figure 61. RF cables in a 3+3+3/4+4+4 2-way 2UD configuration

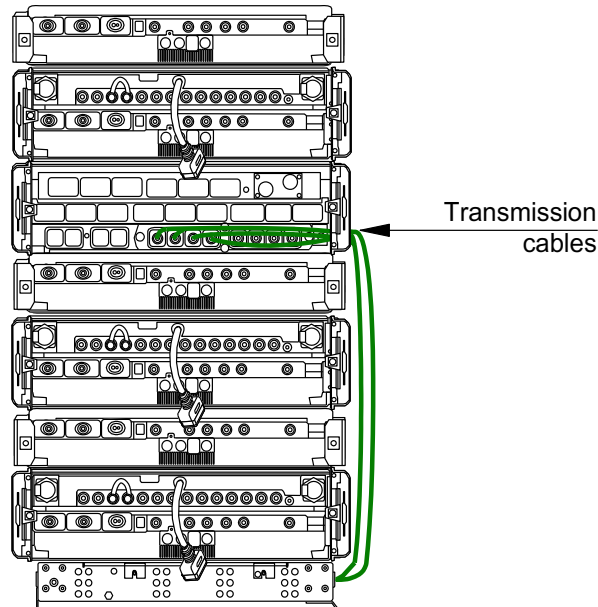


Figure 62. Transmission cables in a 3+3+3/4+4+4 stack configuration

3.2 Creating a 3+3+3/4+4+4 2-way 2UD on a wall (with EWxx)

Before you start

For creating this configuration, you need:

- six Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- six Wideband Combiner Submodules (EWxx)
- Extension Ethernet and Power Cable Kit (EPCA)



Steps

1. **Install the Wideband Combiner Sub-module in the Dual TRX Module, and install the modules.**

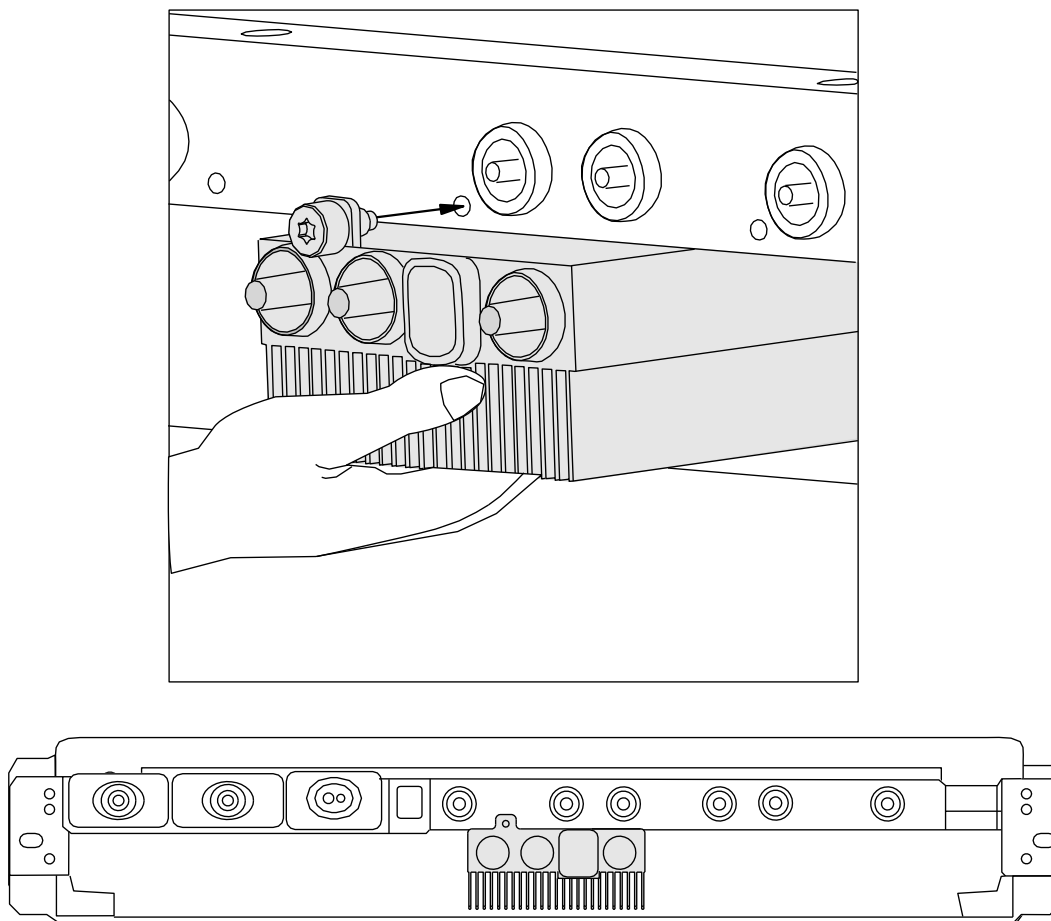


Figure 63. Installing Wideband Combiner Sub-module

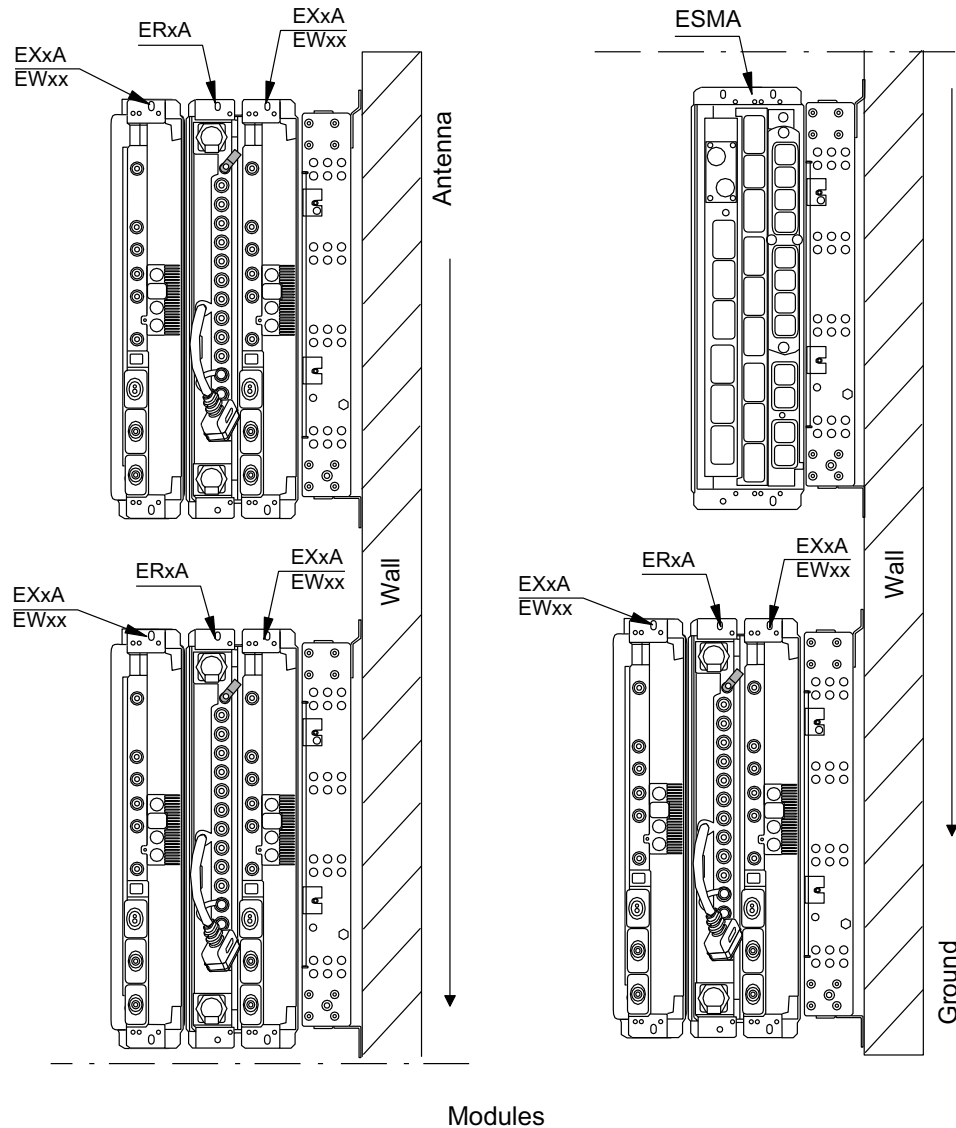


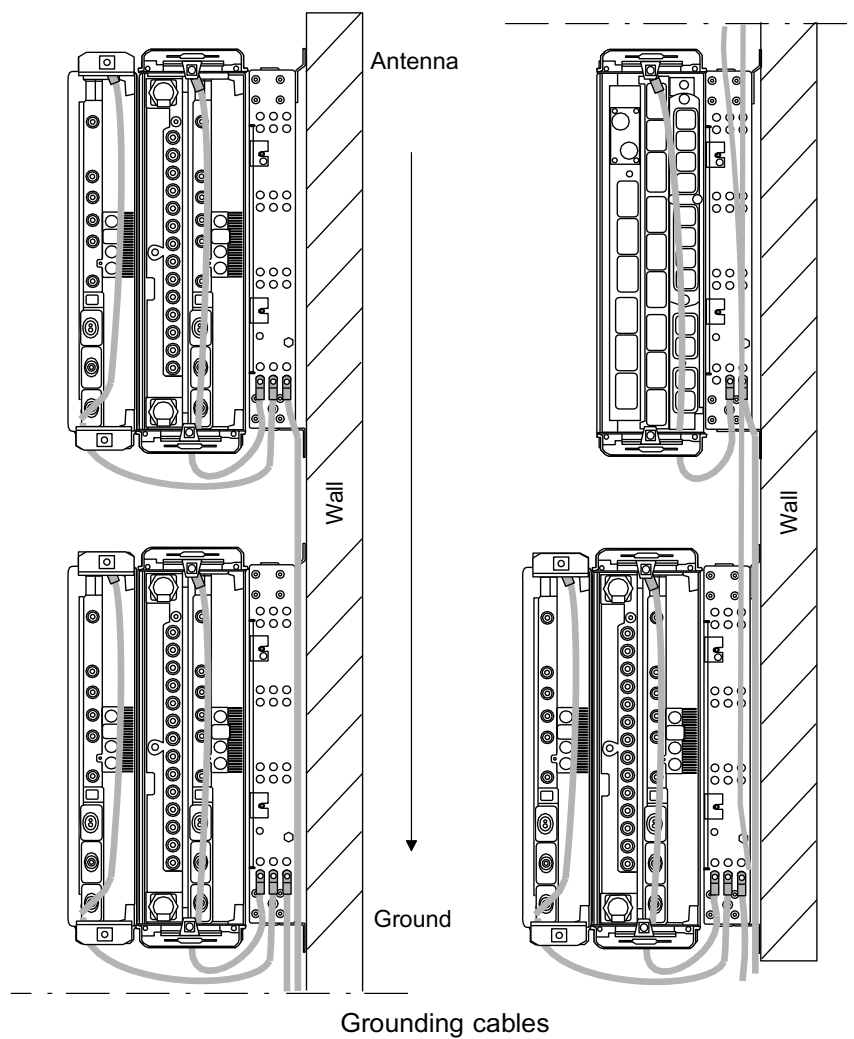
Figure 64. Modules in a 3+3+3/4+4+4 wall configuration

2. Connect the cables.

The order to connect the cables is as follows:

- Grounding cables
- External power cables
- Dual Duplexer Module cable

- d. Bus cables
- e. Internal power cables
- f. RF cables
- g. Antenna jumper cables
- h. Transmission cables



DN7076943

Figure 65. Grounding cables in a 3+3+3/4+4+4 wall configuration

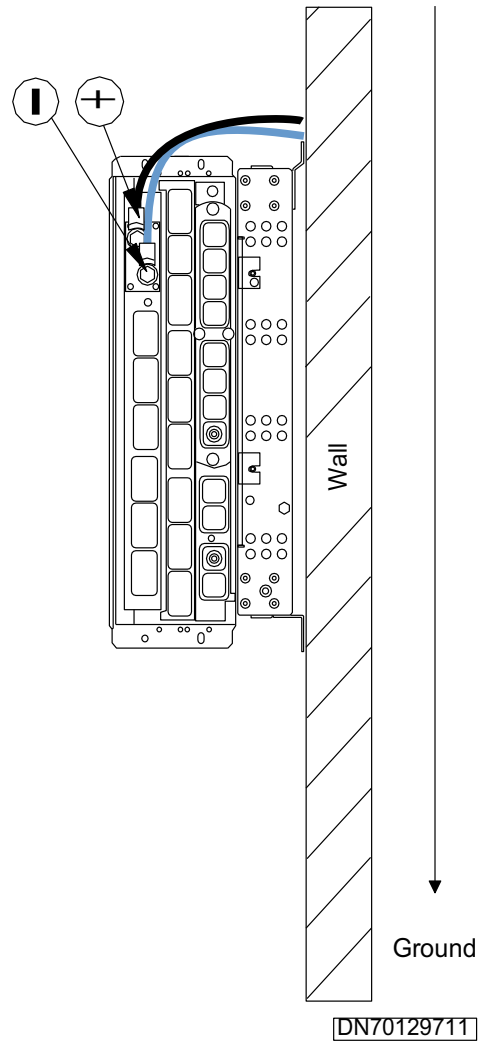


Figure 66. External power cables in a 3+3+3/4+4+4 wall configuration

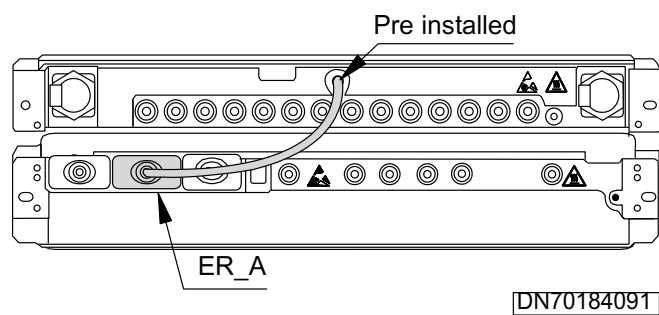
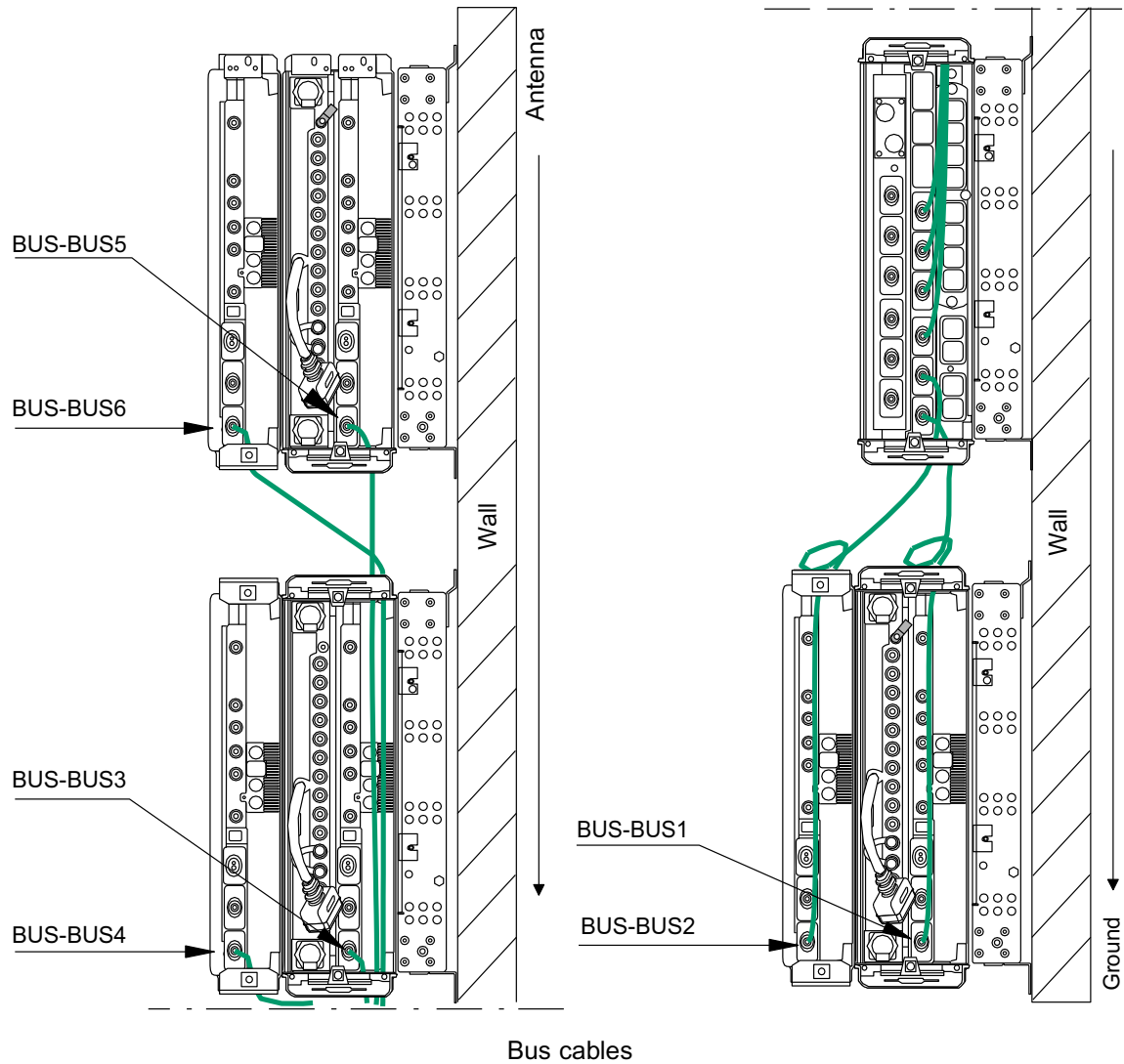
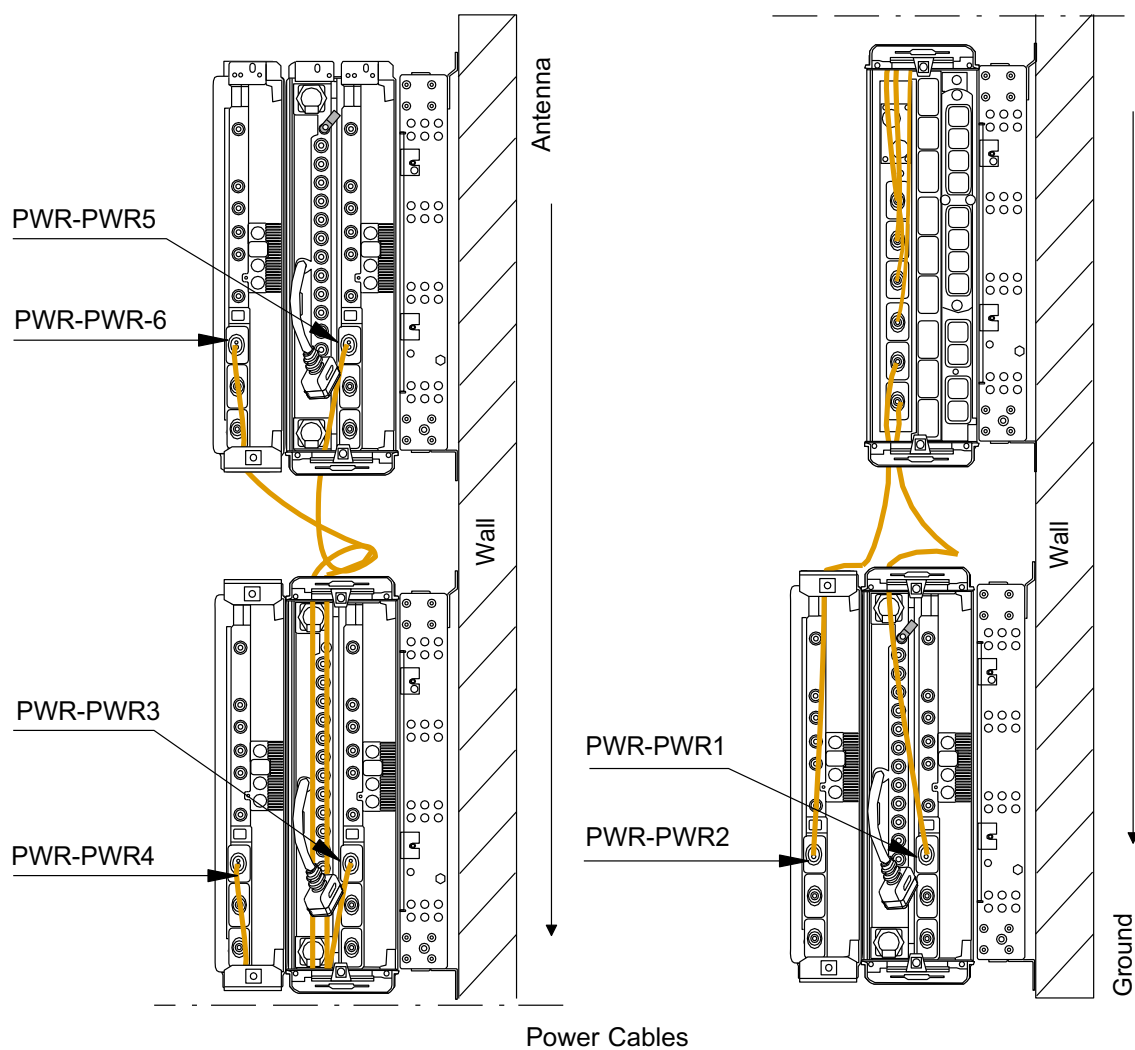


Figure 67. Dual Duplexer Module cable



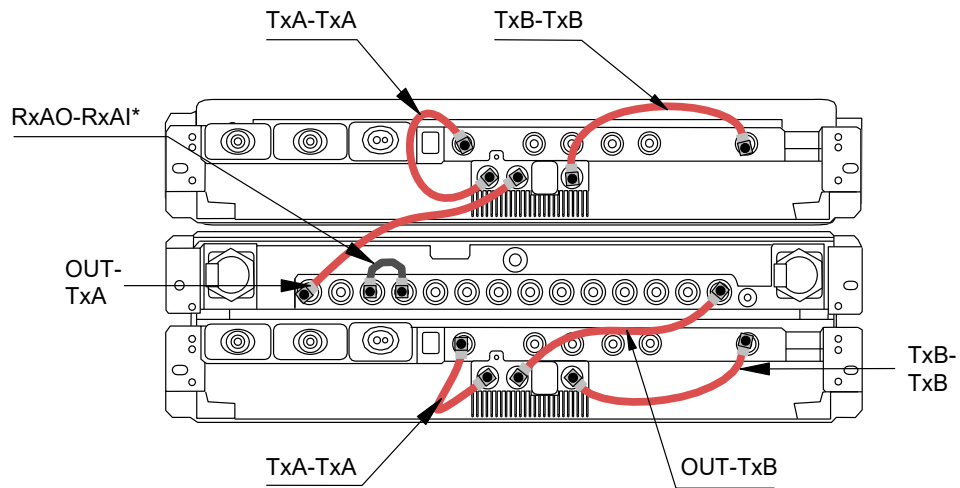
BUS5 and BUS6 are the extension cables.

Figure 68. Bus cables in a 3+3+3/4+4+4 wall configuration



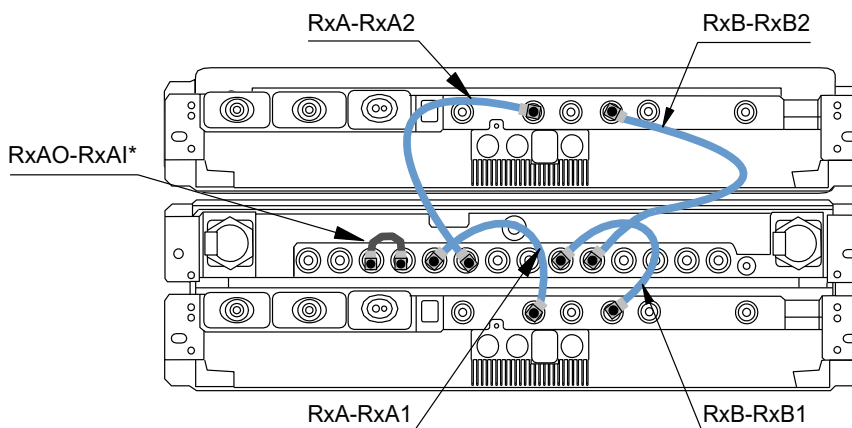
PWR5 and PWR6 are the extension cables.

Figure 69. Internal power cables in a 3+3+3/4+4+4 wall configuration



TX Cables

*pre-installed



RX Cables

*pre-installed

DN70154222

Figure 70. RF cables in a 3+3+3/4+4+4 2-way 2UD configuration

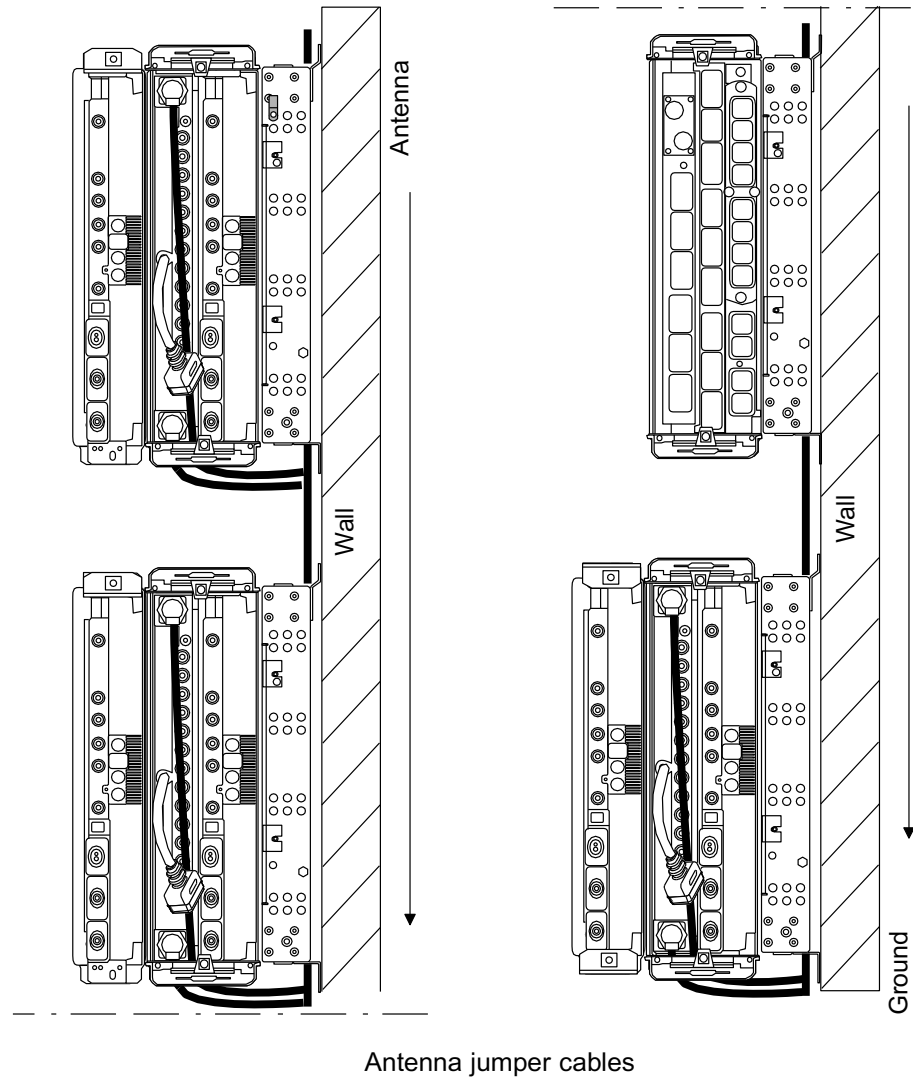


Figure 71. Antenna jumper cables in a 3+3+3/4+4+4 wall configuration

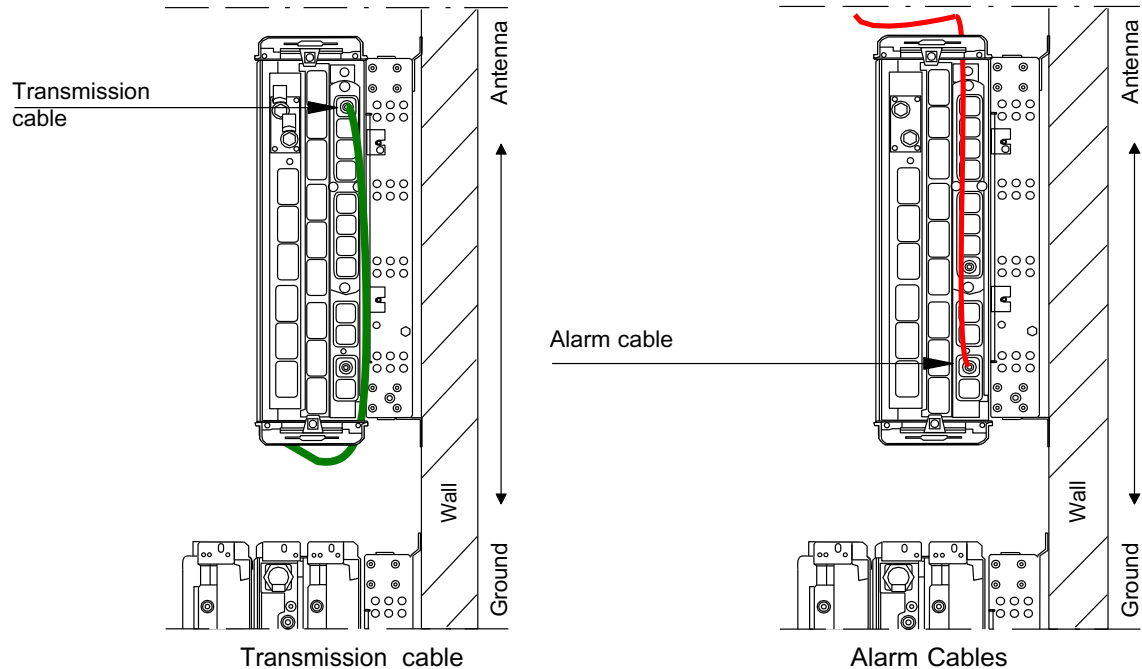


Figure 72. Transmission cables and optional alarm cables in a 3+3+3/4+4+4 wall configuration

3.3 Creating a 3+3+3/4+4+4 2-way 2UD on a pole (with EWxx)

Before you start

For creating this configuration, you need:

- six Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- six Wideband Combiner Submodules (EWxx)
- Extension Ethernet and Power Cable Kit (EPCA)

The kit contains 2 x 2 m (6.6 ft) bus and power cables.



Steps

1. **Install the Wideband Combiner Sub-module in the Dual TRX Module, and install the modules.**

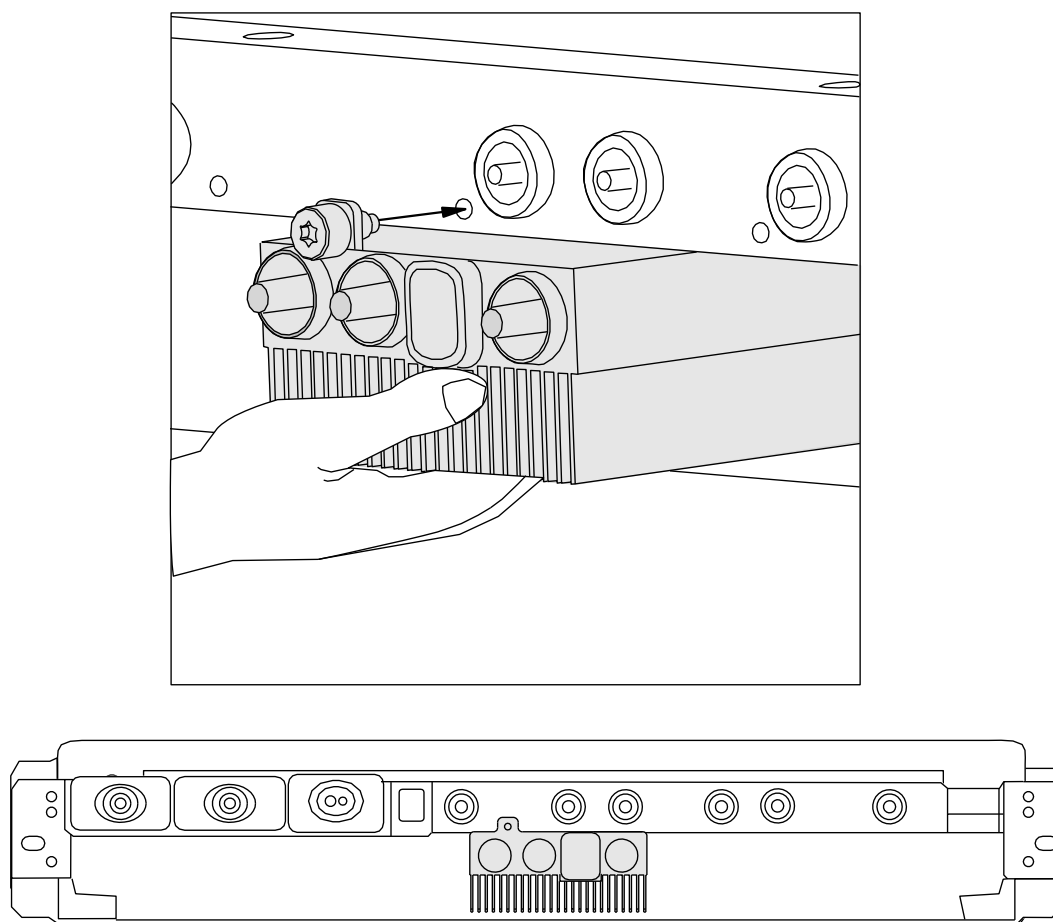


Figure 73. Installing Wideband Combiner Sub-module

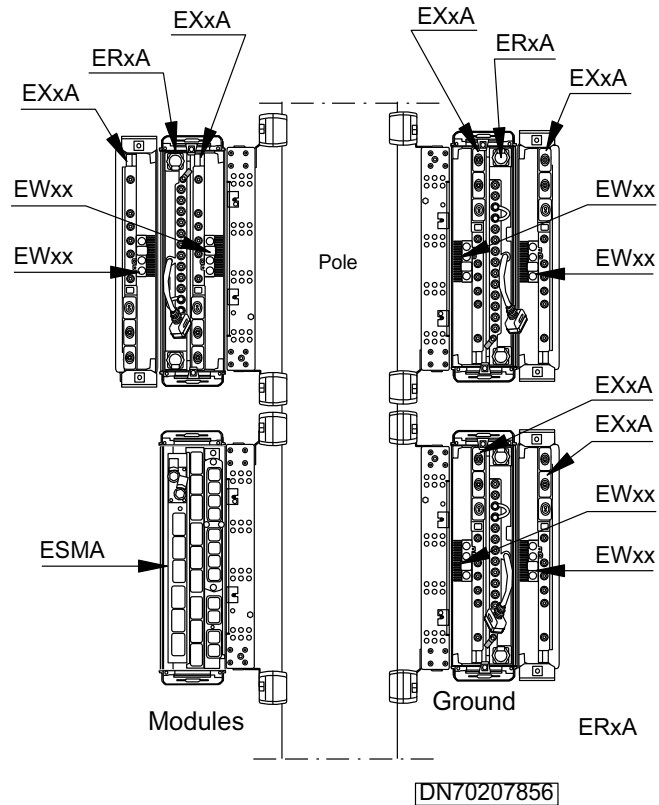


Figure 74. Modules in a 3+3+3/4+4+4 2-way 2UD pole configuration

2. Connect the cables.

The order to connect the cables is as follows:

- a. Grounding cables
- b. External power cables
- c. Dual Duplexer Module cable
- d. Bus cables
- e. Internal power cables
- f. RF cables
- g. Antenna jumper cables
- h. Transmission cables

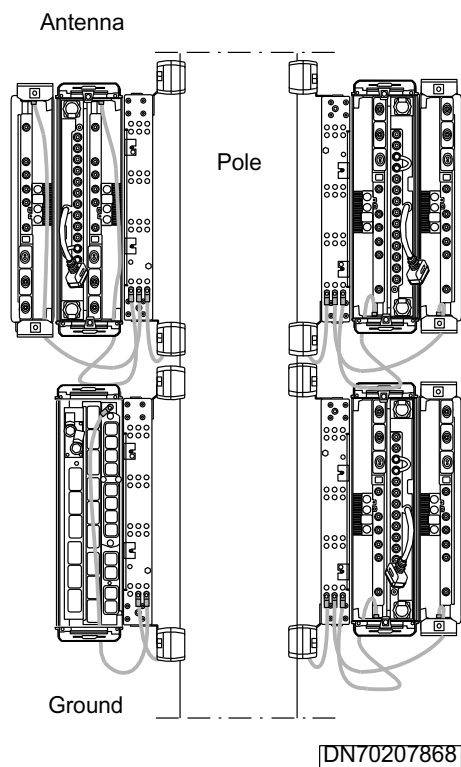
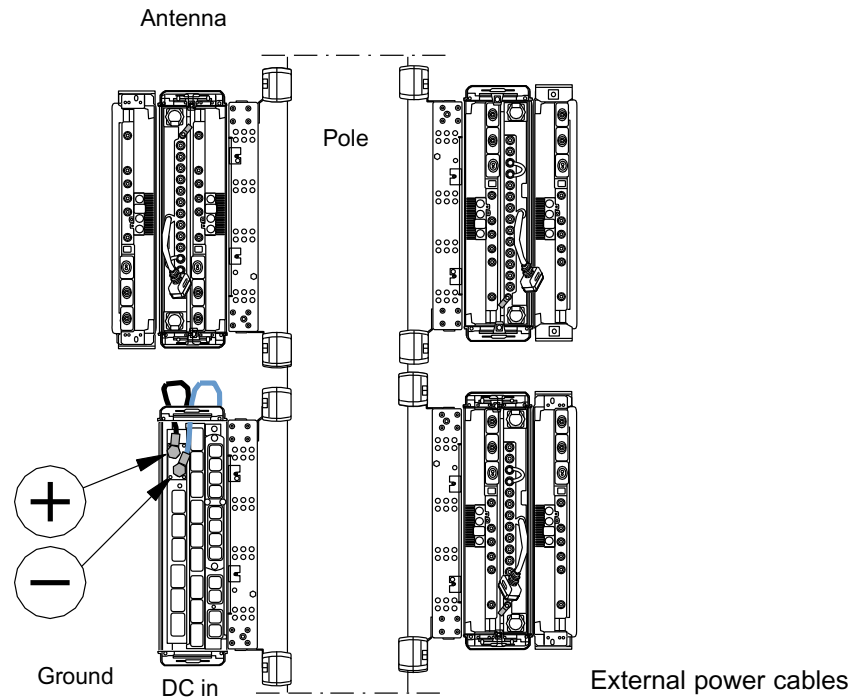
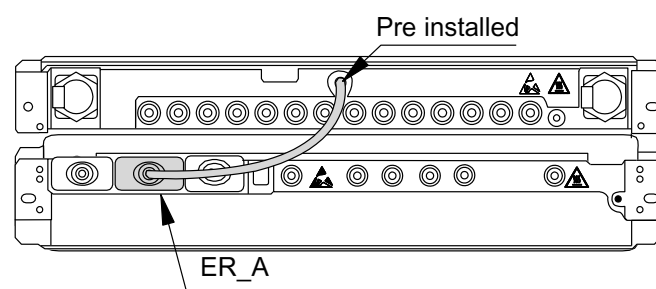


Figure 75. Grounding cables in a 3+3+3/4+4+4 pole configuration



DN70270823

Figure 76. External power cables in a 3+3+3/4+4+4 pole configuration



DN70184091

Figure 77. Dual Duplexer Module cable

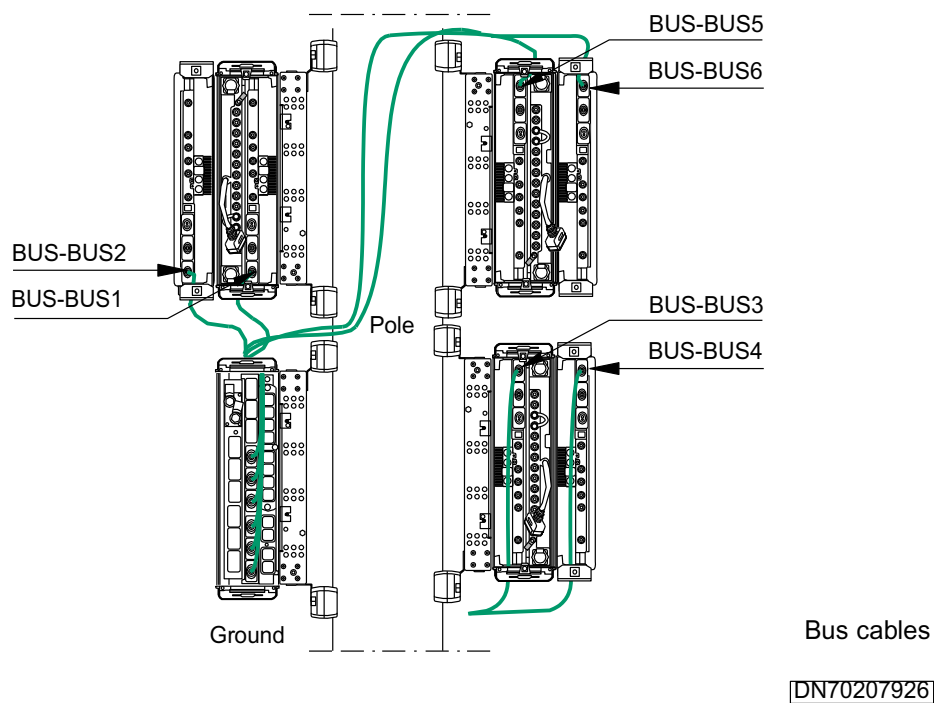
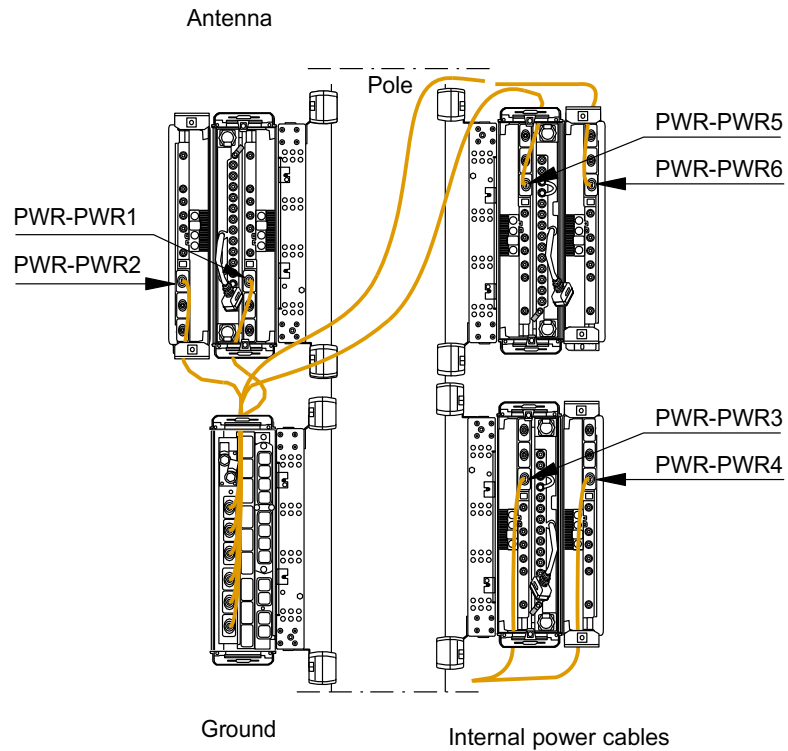
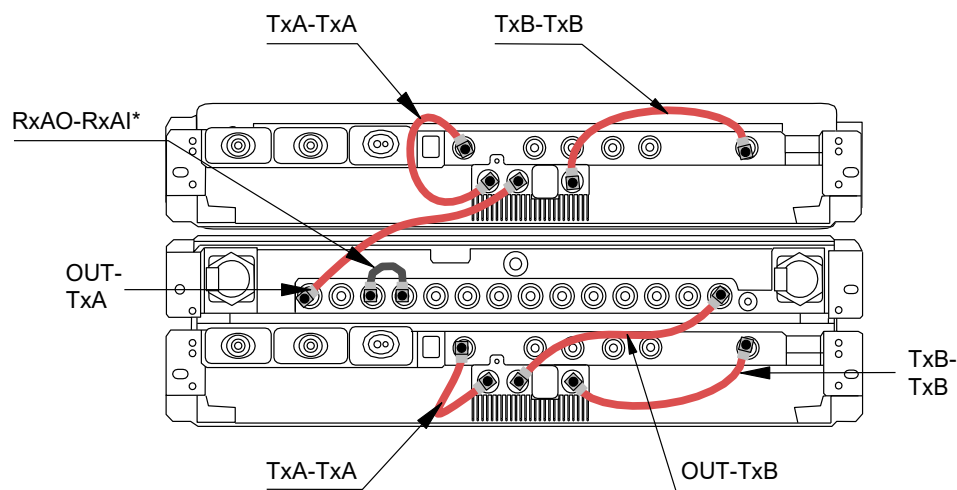


Figure 78. Bus cables in a 3+3+3/4+4+4 pole configuration



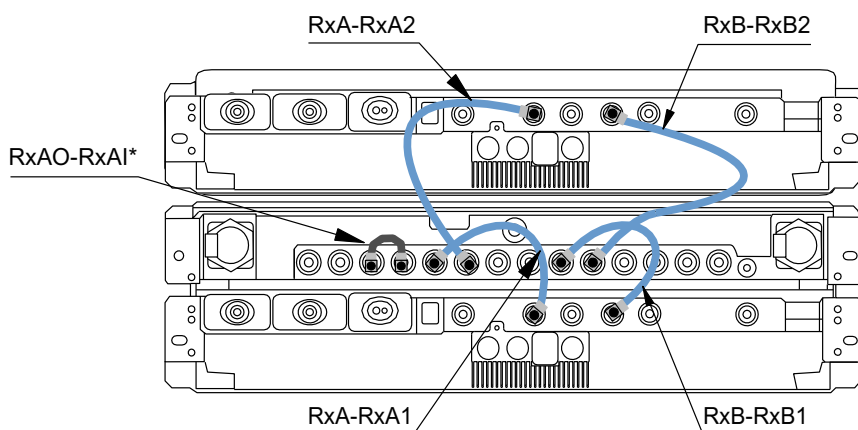
DN70207941

Figure 79. Internal power cables in a 3+3+3/4+4+4 pole configuration



TX Cables

*pre-installed



RX Cables

*pre-installed

DN70154222

Figure 80. RF cables in a 3+3+3/4+4+4 2-way 2UD configuration

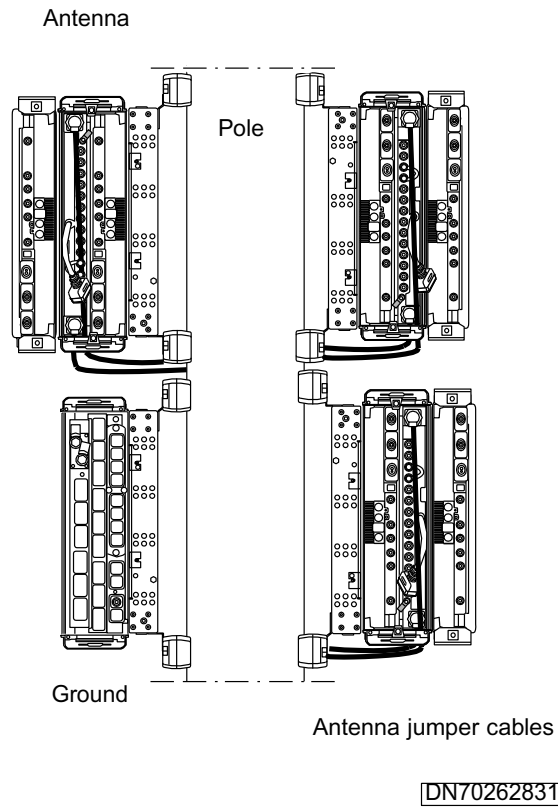


Figure 81. Antenna jumper cables in a 3+3+3/4+4+4 pole configuration

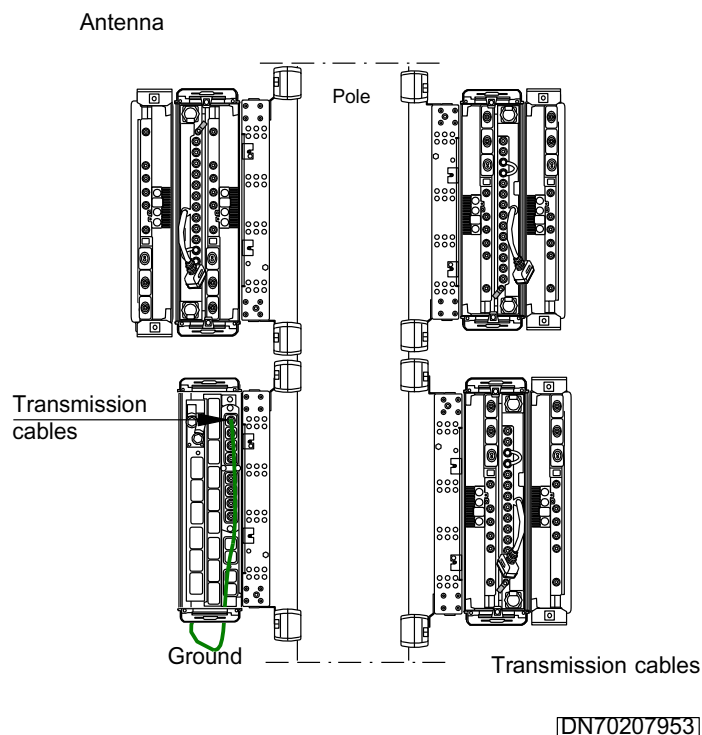


Figure 82. Transmission cables in a 3+3+3/4+4+4 pole configuration

3.4 Creating a 3+3+3/4+4+4 2-way 2UD in FCIA (with EWxx)

Before you start

For creating this configuration, you need:

- six Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- six Wideband Combiner Submodules (EWxx)



Steps

1. **Install the Wideband Combiner Sub-module in the Dual TRX Module, and install the modules.**

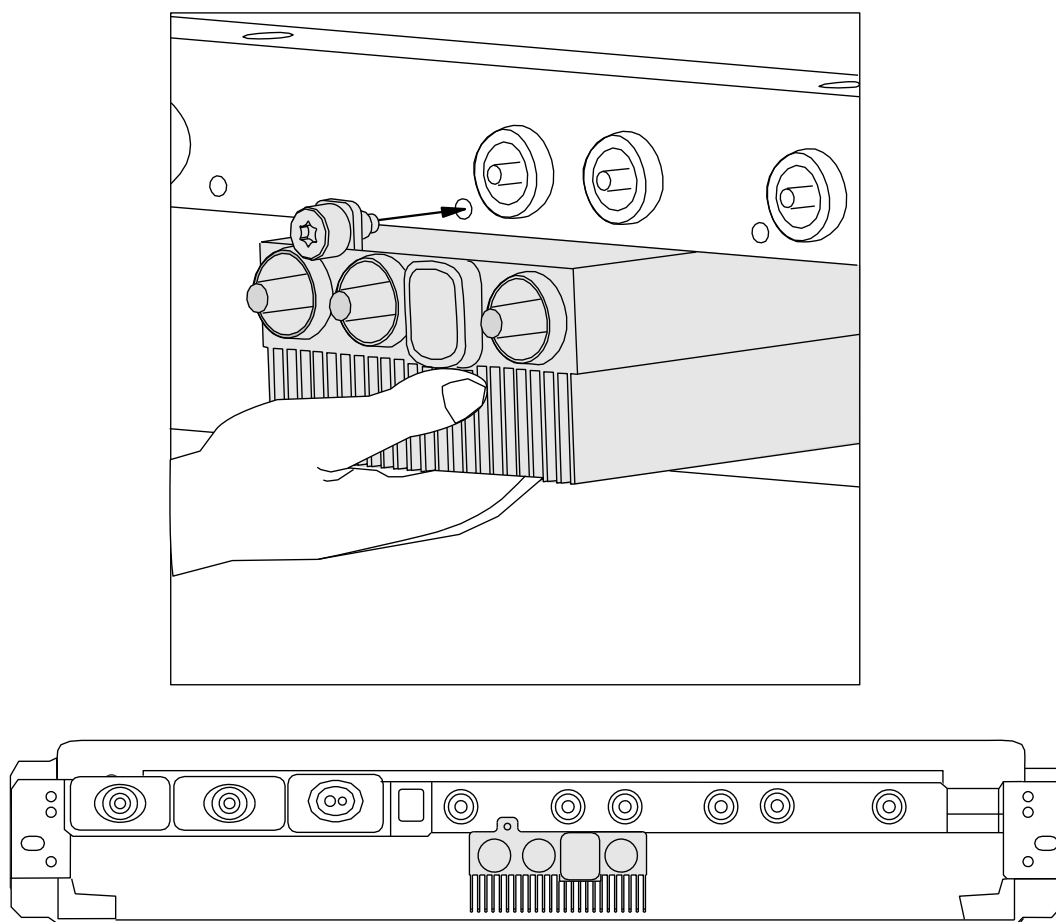


Figure 83. Installing Wideband Combiner Sub-module

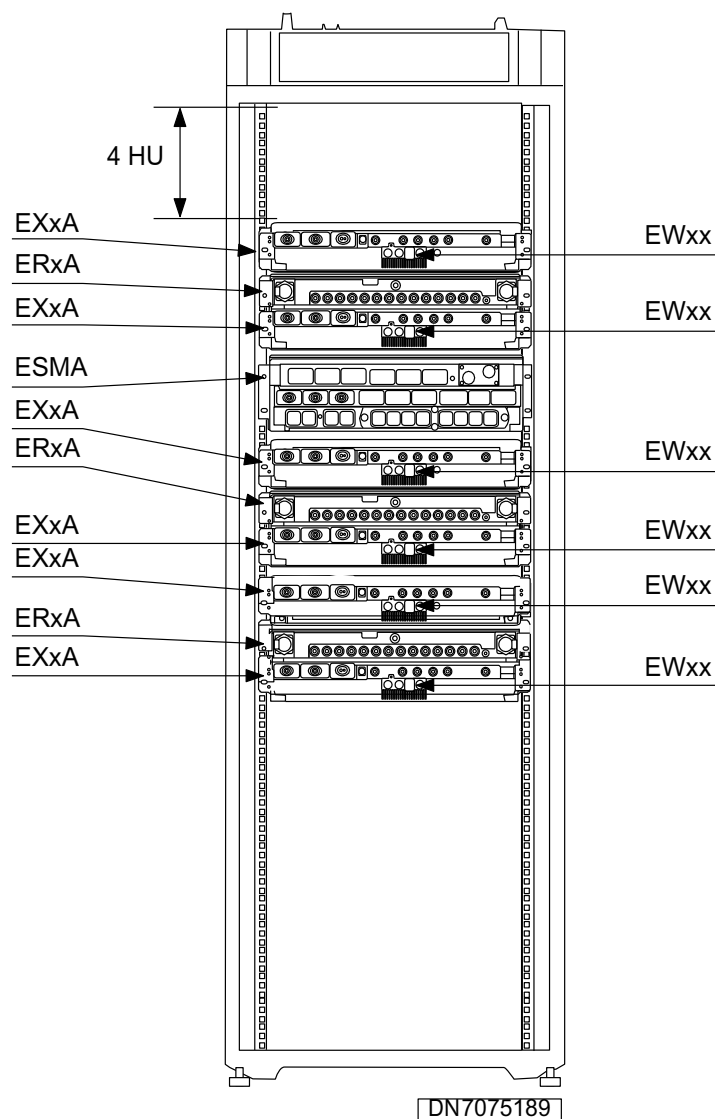


Figure 84. Modules in a 3+3+3/4+4+4 2-way 2UD FCIA configuration (with EWxA)

2. Connect the cables.

The order to connect the cables is as follows:

- a. External power cables
- b. Dual Duplexer Module cable
- c. Bus cables

- d. Internal power cables
- e. RF cables
- f. Antenna jumper cables
- g. Transmission cables

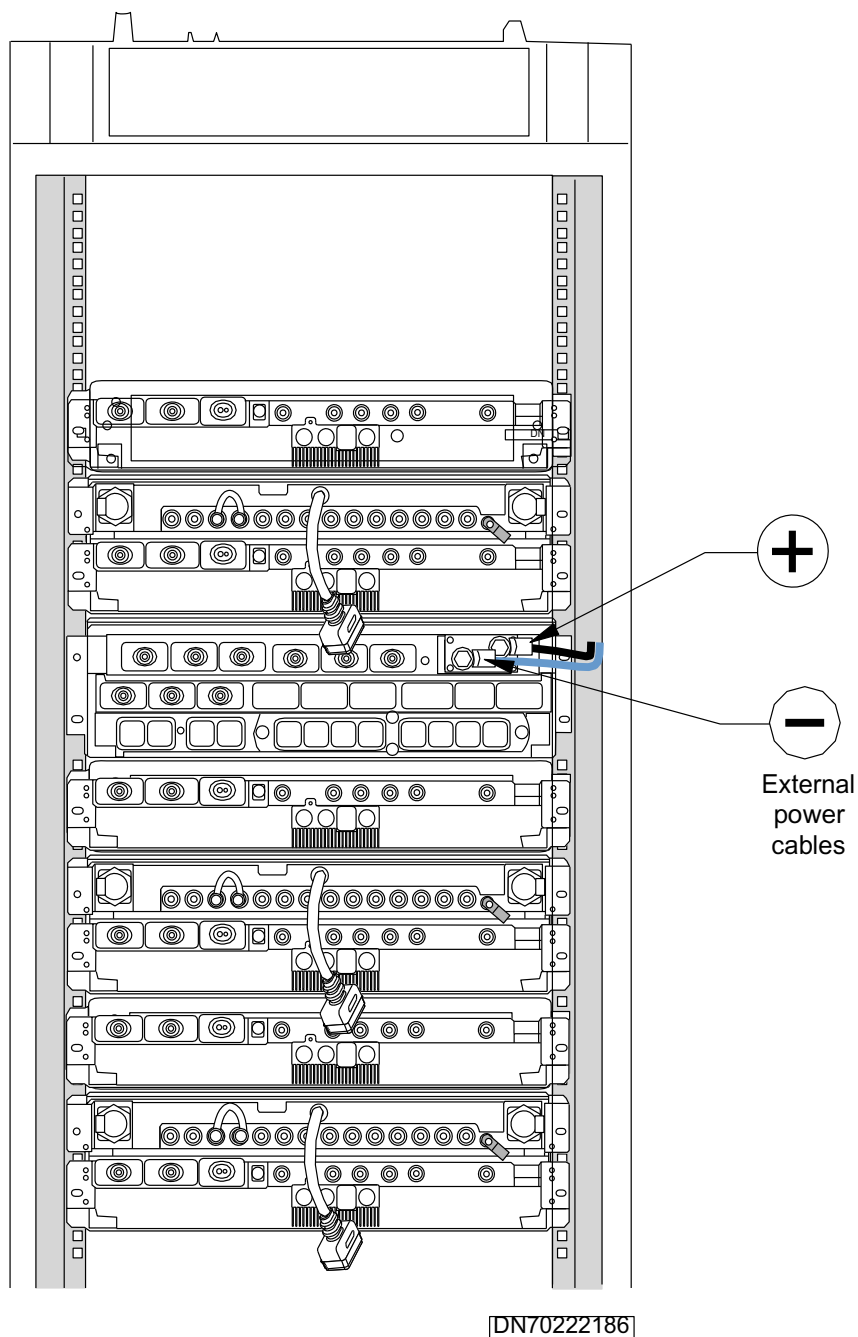


Figure 85. External power cables in a 3+3+3/4+4+4 FCIA configuration

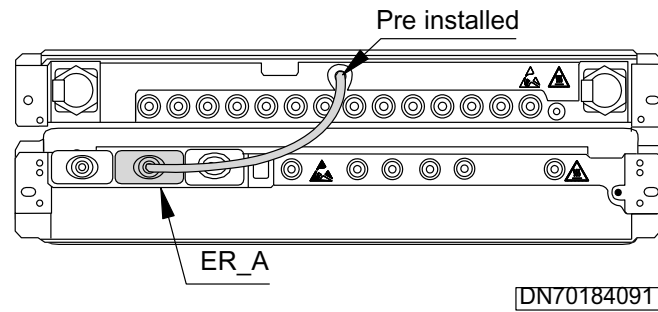


Figure 86. Dual Duplexer Module cable

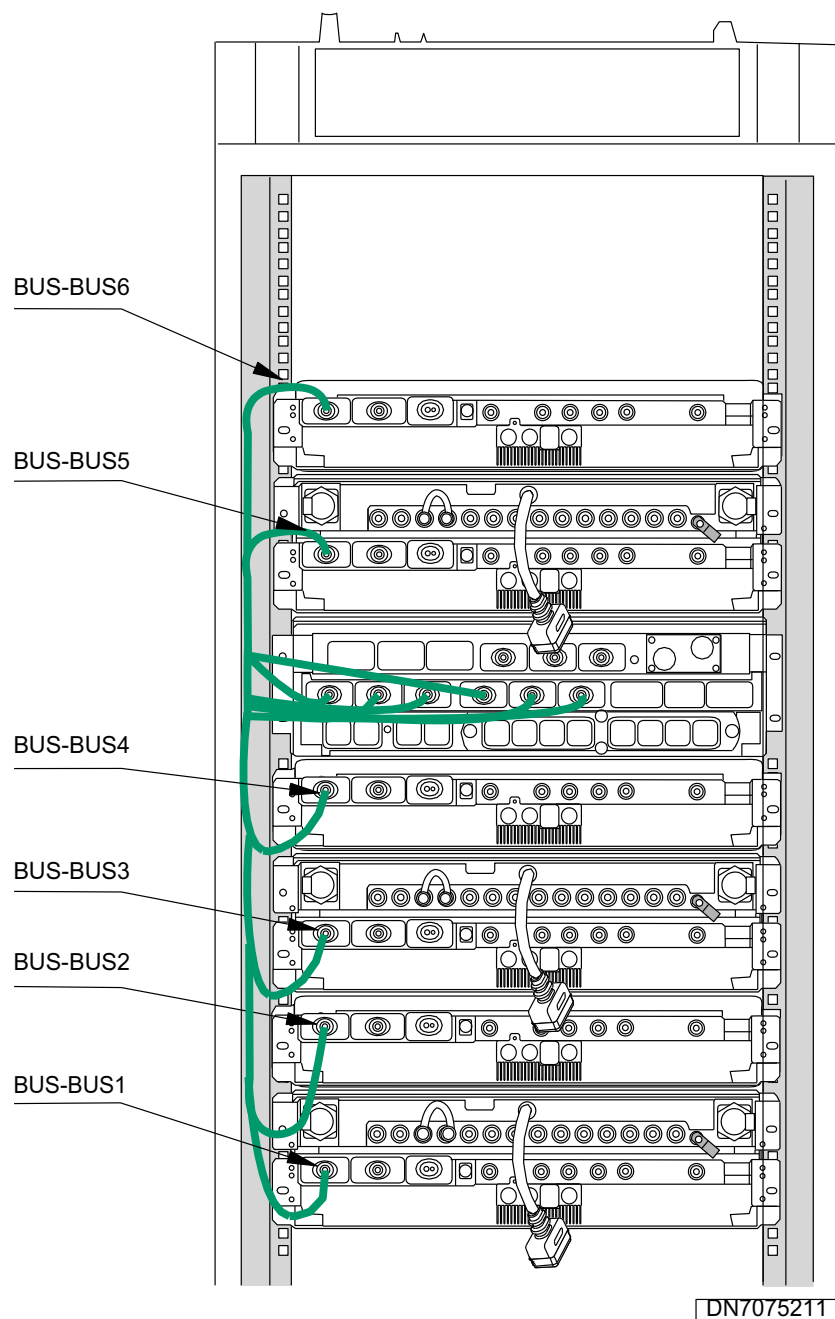


Figure 87. Bus cables in a 3+3+3/4+4+4 FCIA configuration

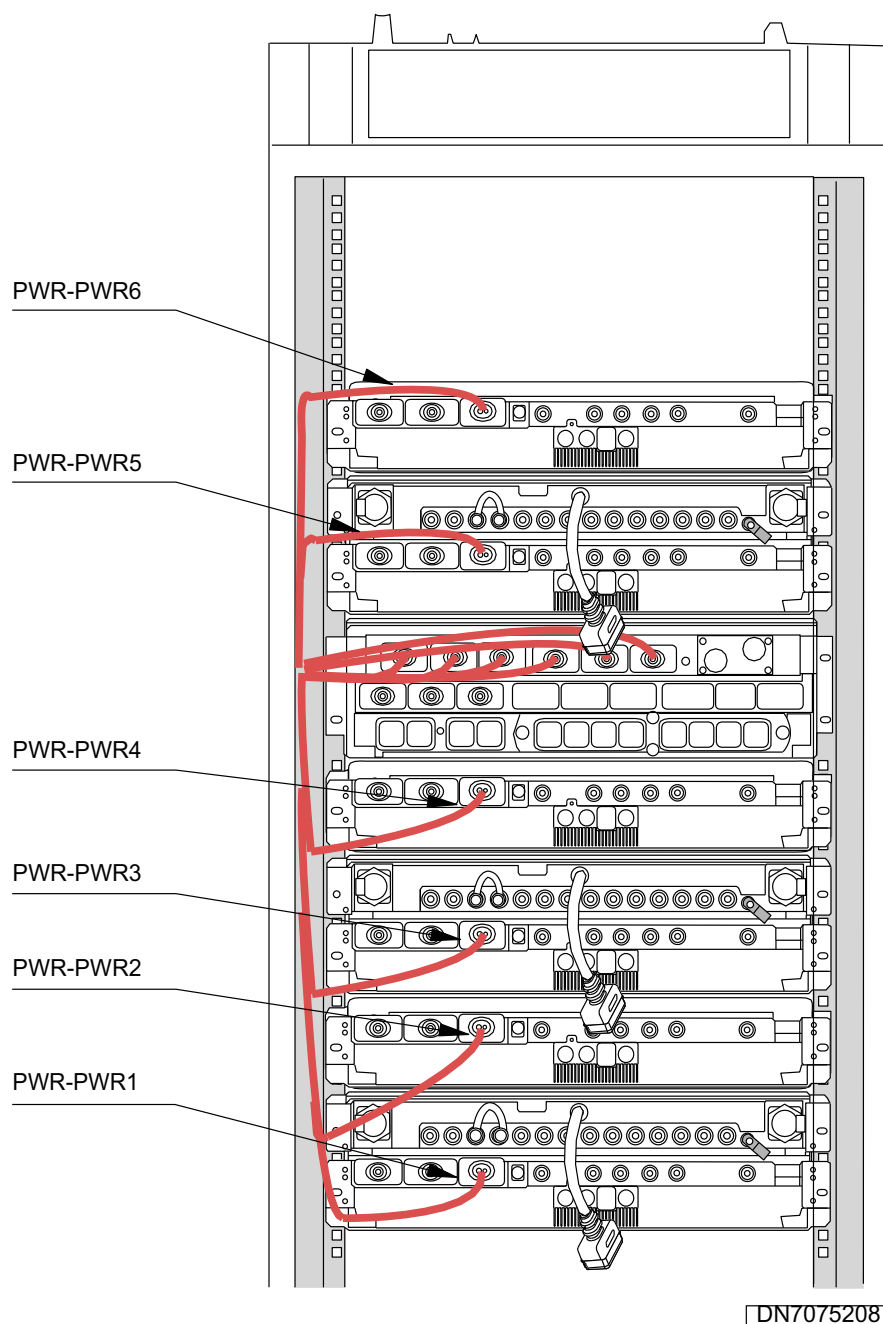
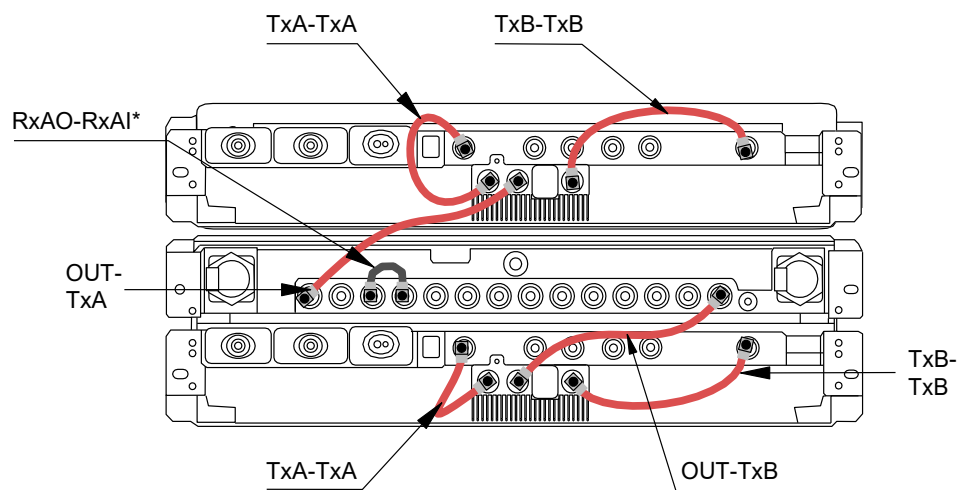
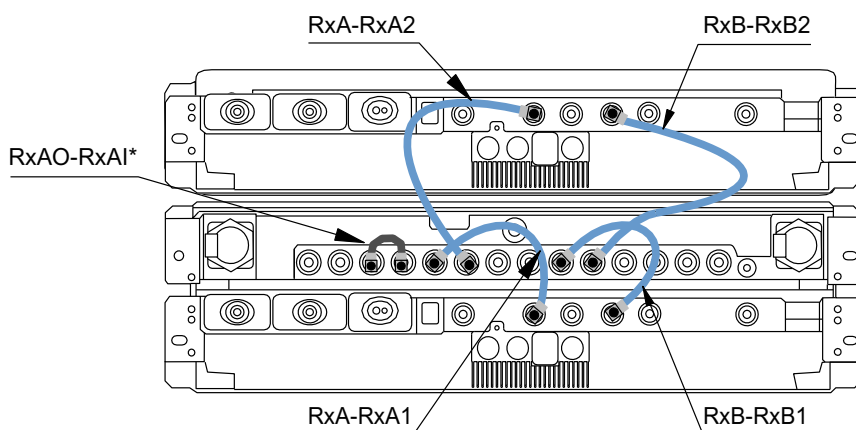


Figure 88. Internal power cables in a 3+3+3/4+4+4 FCIA configuration



TX Cables

*pre-installed



RX Cables

*pre-installed

DN70154222

Figure 89. RF cables in a 3+3+3/4+4+4 2-way 2UD configuration

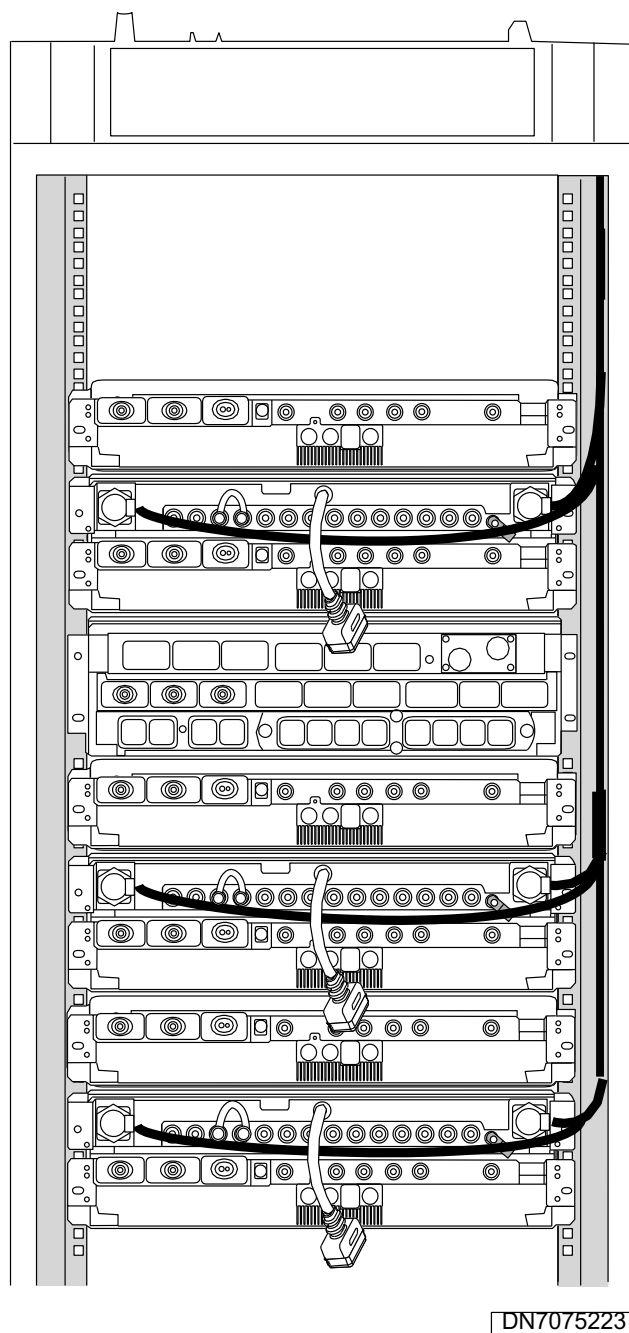


Figure 90. Antenna jumper cables in a 3+3+3/4+4+4 2-way 2UD FCIA configuration

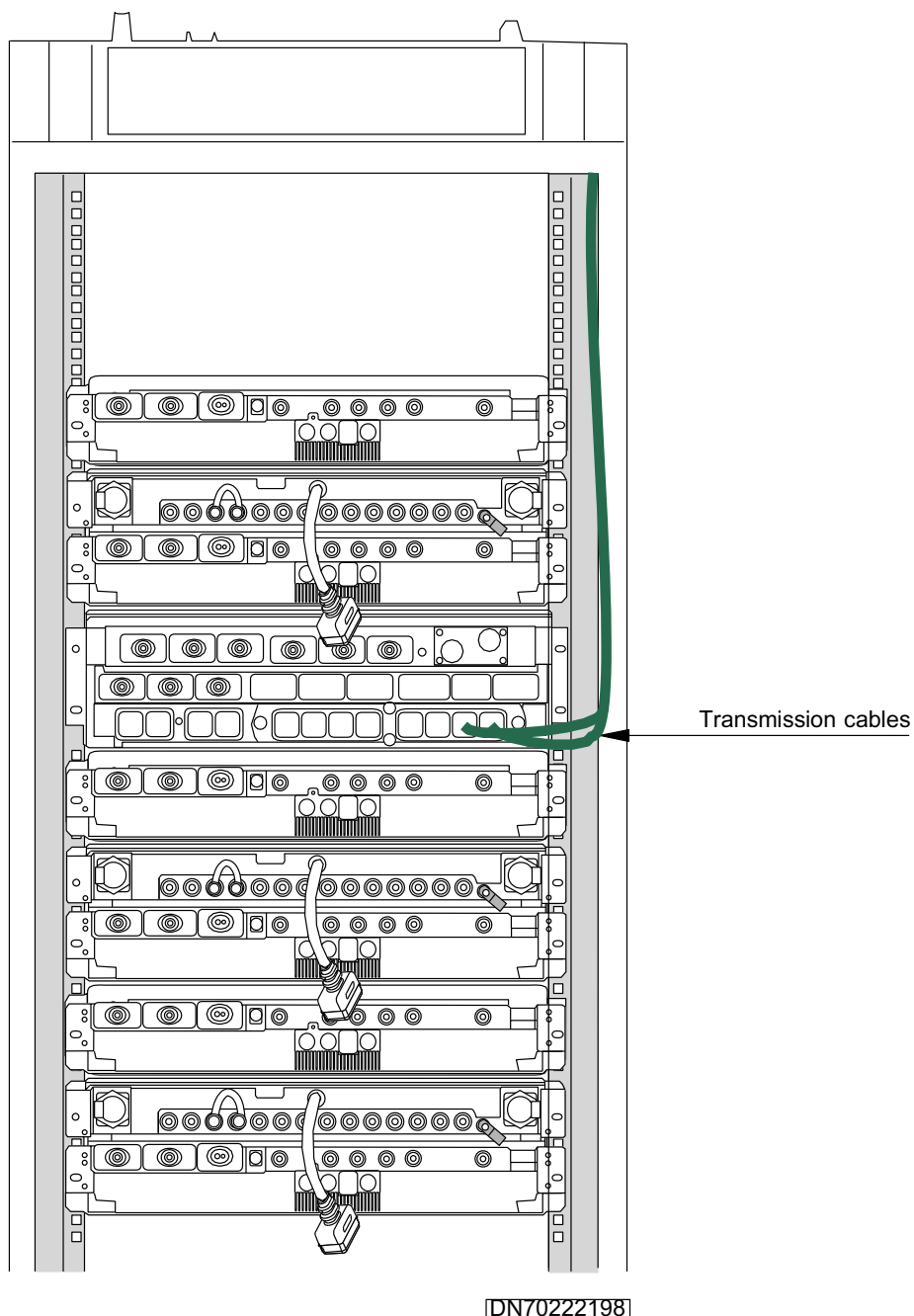


Figure 91. Transmission cables in a 3+3+3/4+4+4 2-way 2UD FCIA configuration

3.5 Creating a 3+3+3/4+4+4 2-way 2UD in FCOA (with EWxx)

Before you start

For creating this configuration, you need:

- six Dual TRX Modules (EXxA)
- three Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- six Wideband Combiner Submodules (EWxx)



Steps

1. **Install the Wideband Combiner Sub-module in the Dual TRX Module, and install the modules.**

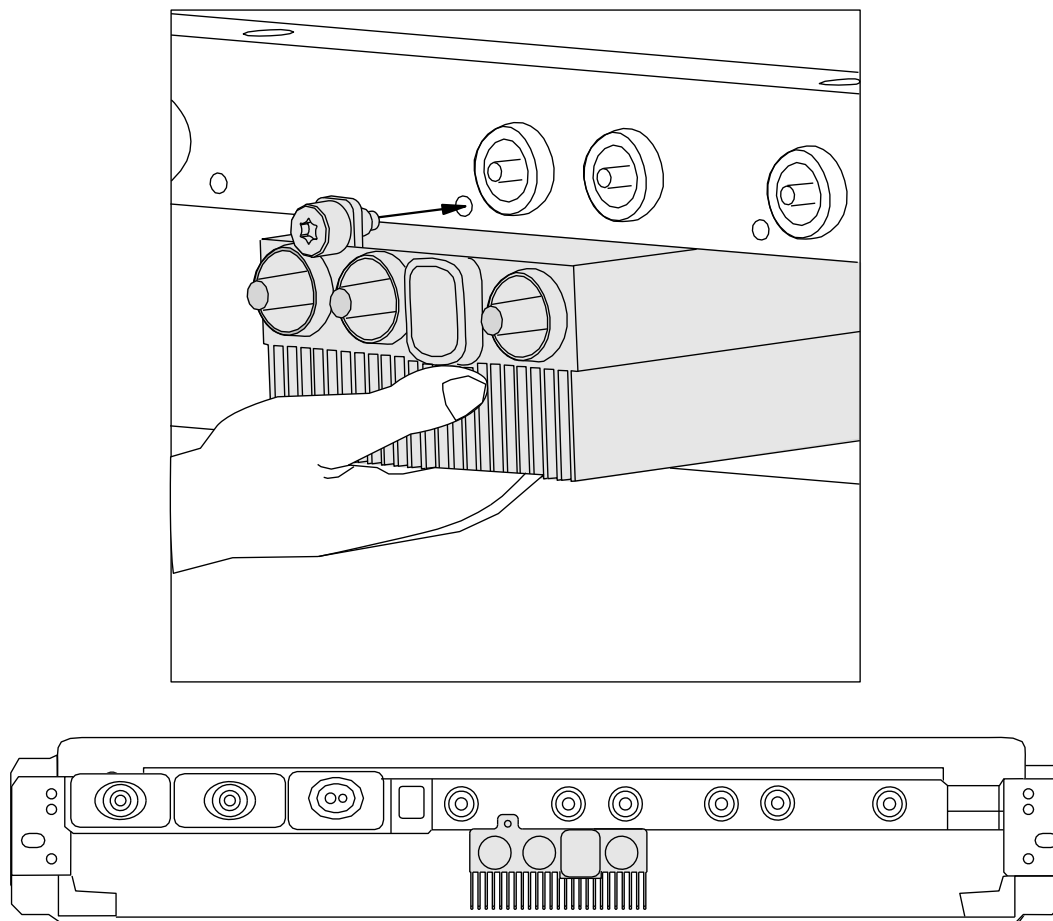


Figure 92. Installing Wideband Combiner Sub-module

The System Module can be installed horizontally or vertically as shown in the figures below. Vertical installation is recommended if you are going to expand to an 8+8+8 configuration later.

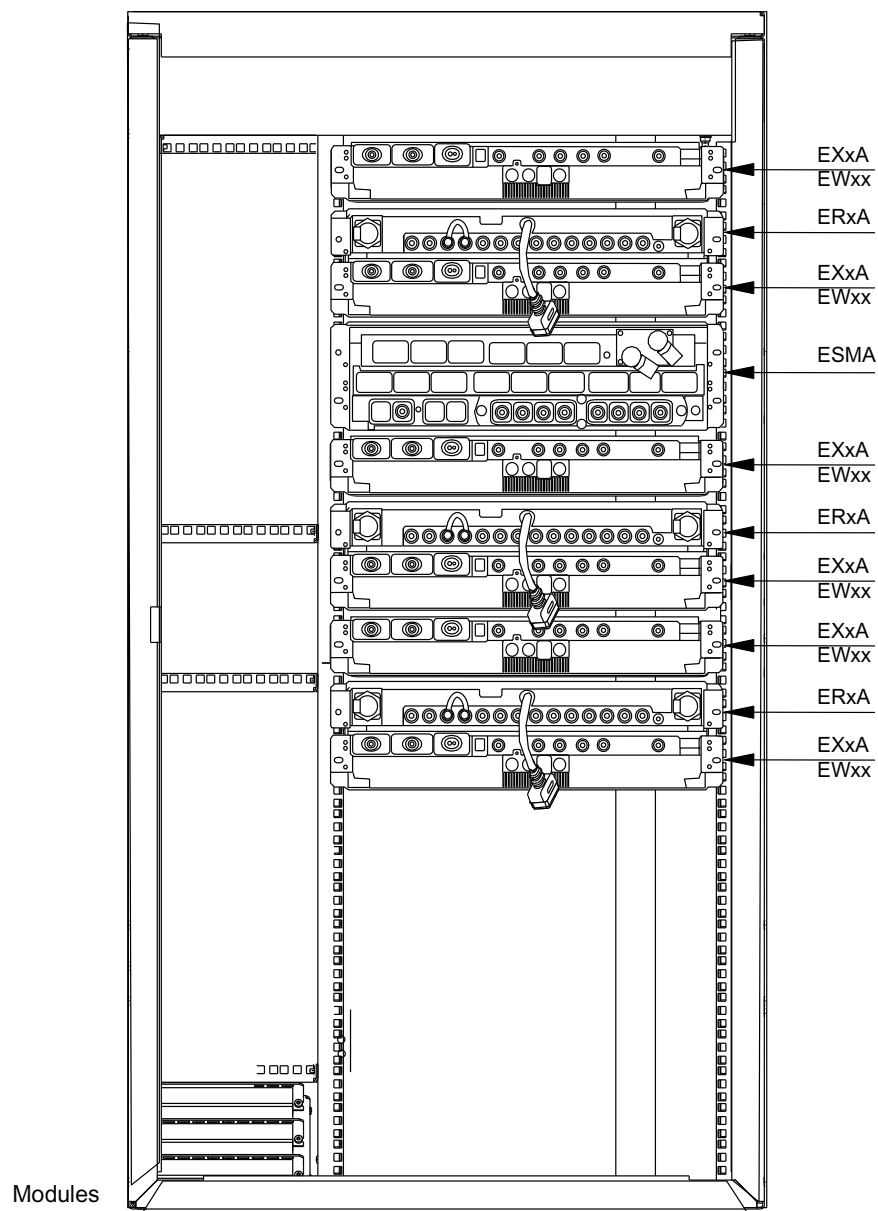


Figure 93. Modules in a 3+3+3/4+4+4 FCOA configuration, ESMA horizontal

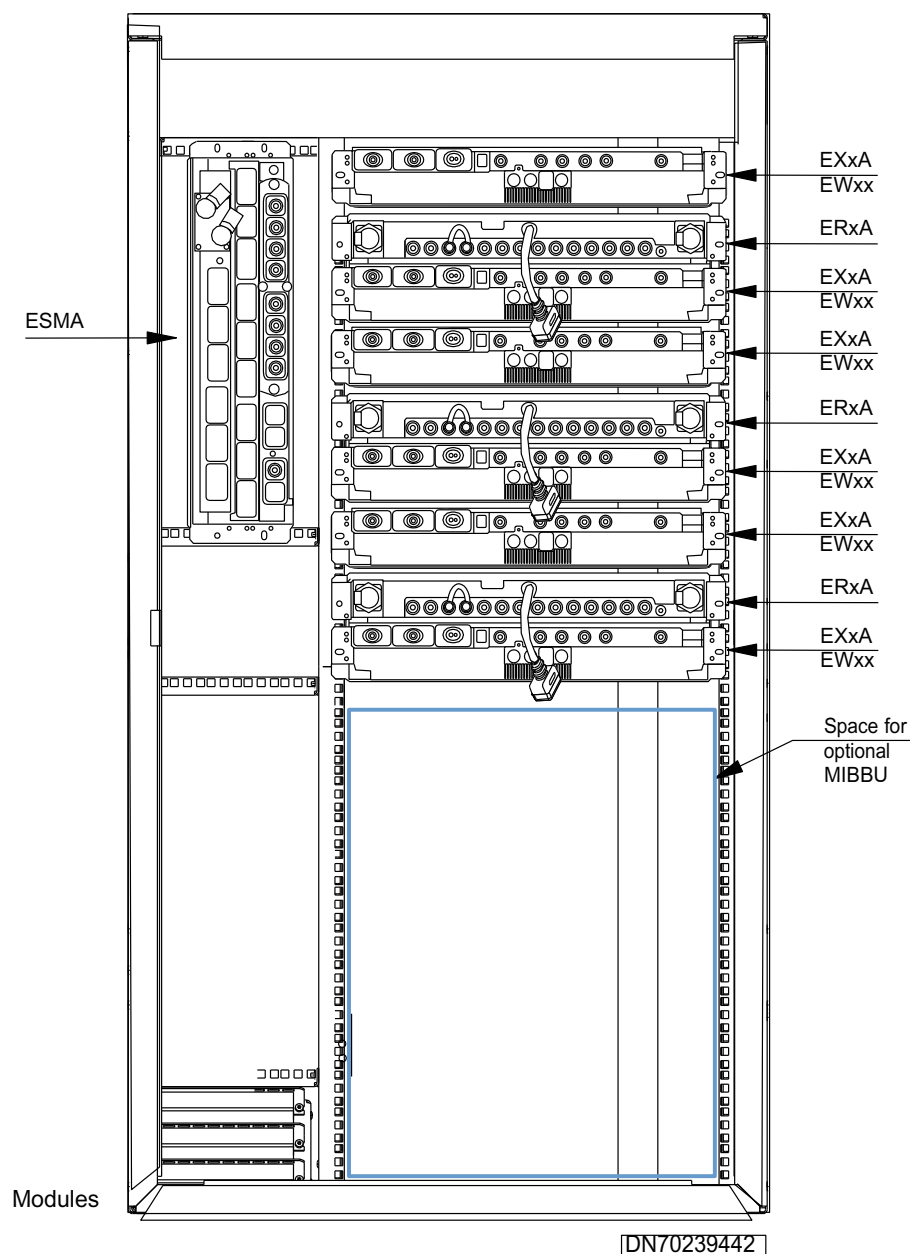


Figure 94. Modules in a 3+3+3/4+4+4 FCOA configuration, ESMA vertical

2. Connect the cables.

The order to connect the cables is as follows:

- a. External power cables
- b. Dual Duplexer Module cable
- c. Bus cables
- d. Internal power cables
- e. RF cables
- f. Antenna jumper cables
- g. Transmission cables

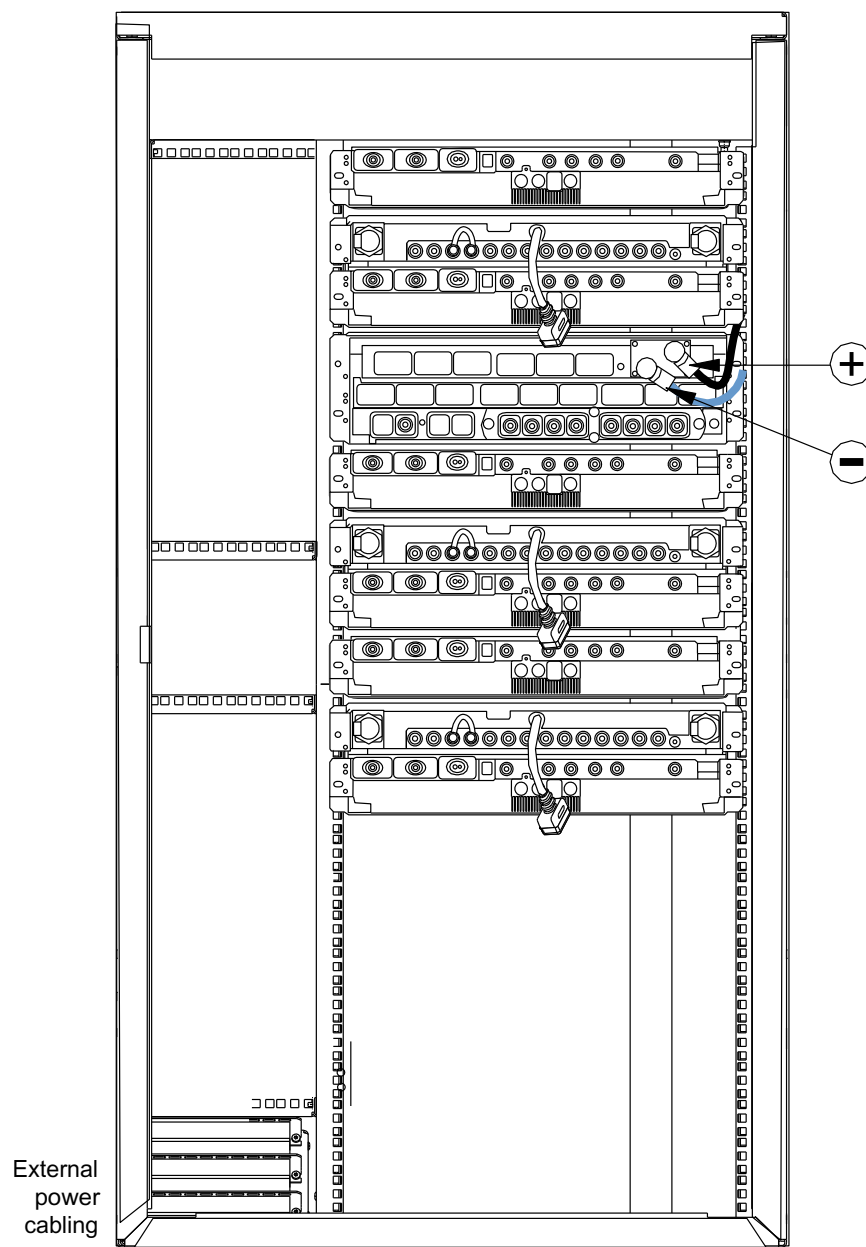


Figure 95. External power cables in a 3+3+3/4+4+4 FCOA configuration

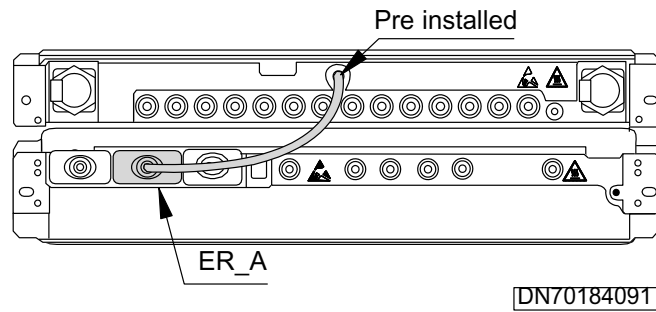


Figure 96. Dual Duplexer Module cable

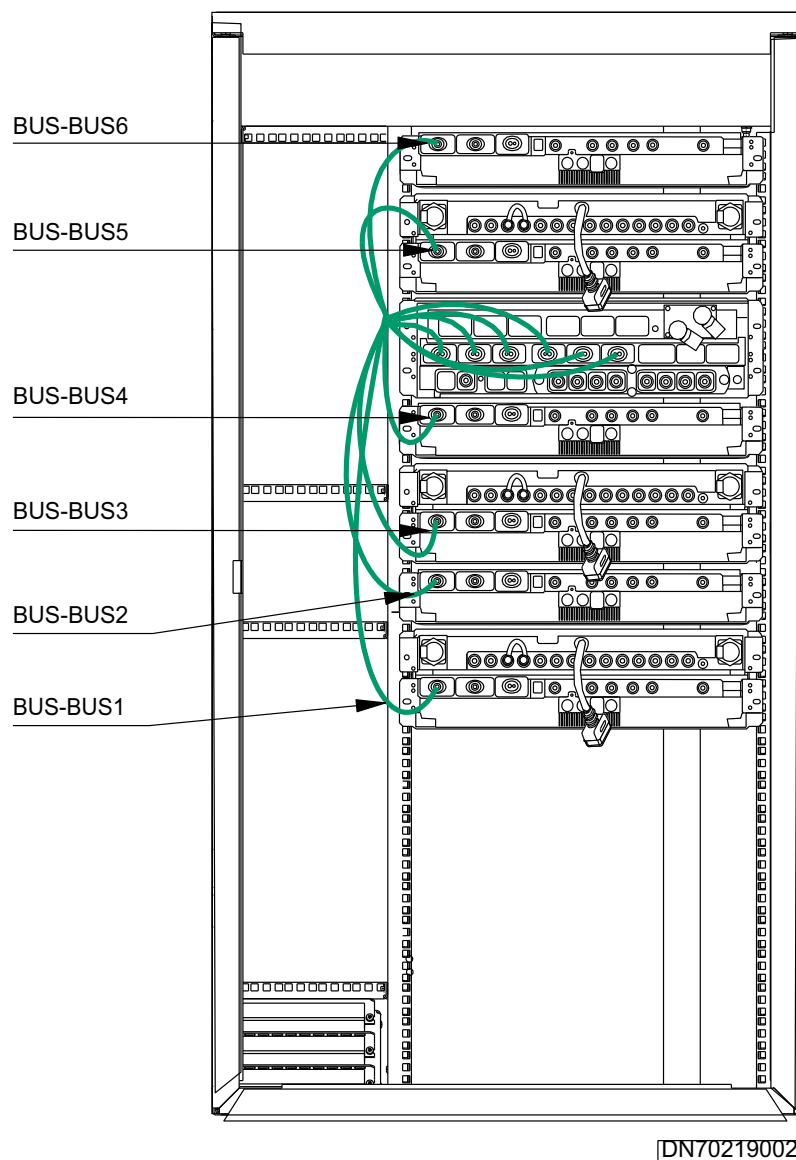


Figure 97. Bus cables in a 3+3+3/4+4+4 FCOA configuration

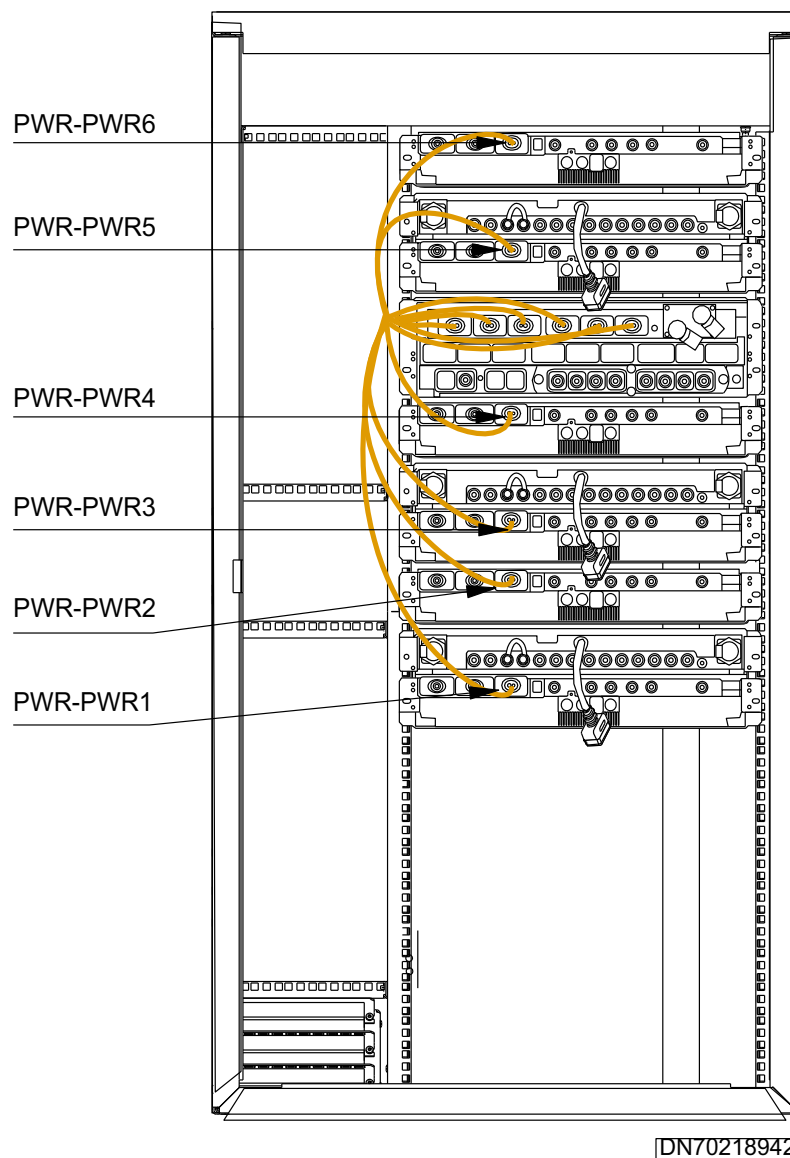
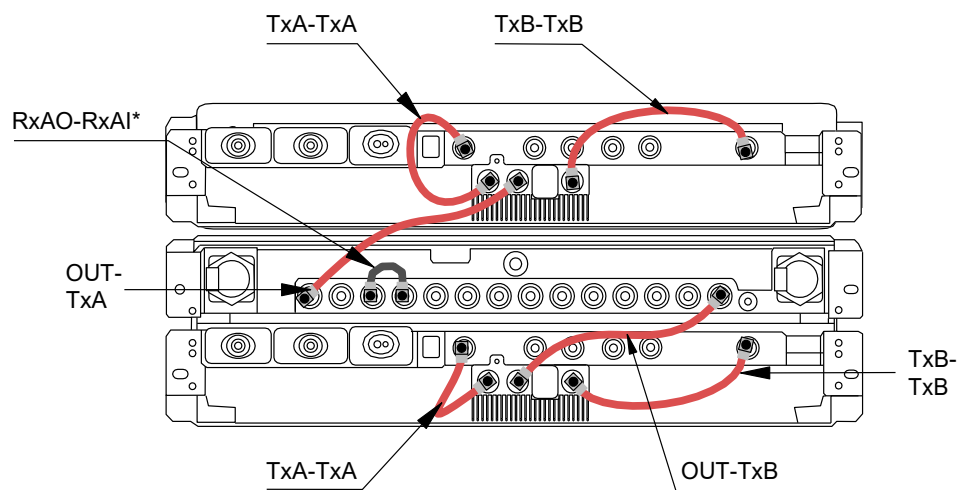
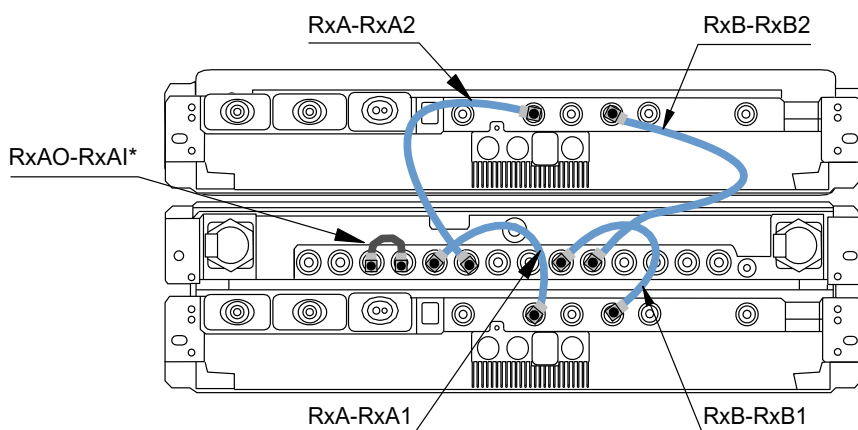


Figure 98. Internal power cables in a 3+3+3/4+4+4 FCOA configuration



TX Cables

*pre-installed



RX Cables

*pre-installed

DN70154222

Figure 99. RF cables in a 3+3+3/4+4+4 2-way 2UD configuration

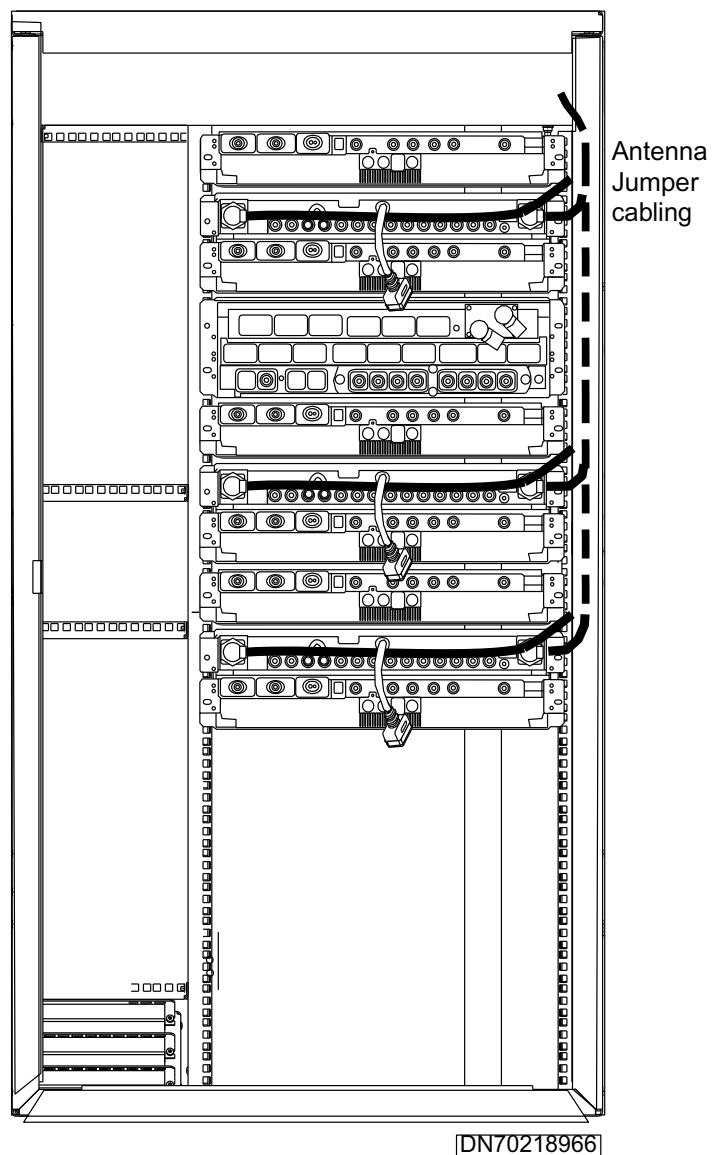


Figure 100. Antenna jumper cables in a 3+3+3/4+4+4 FCOA configuration

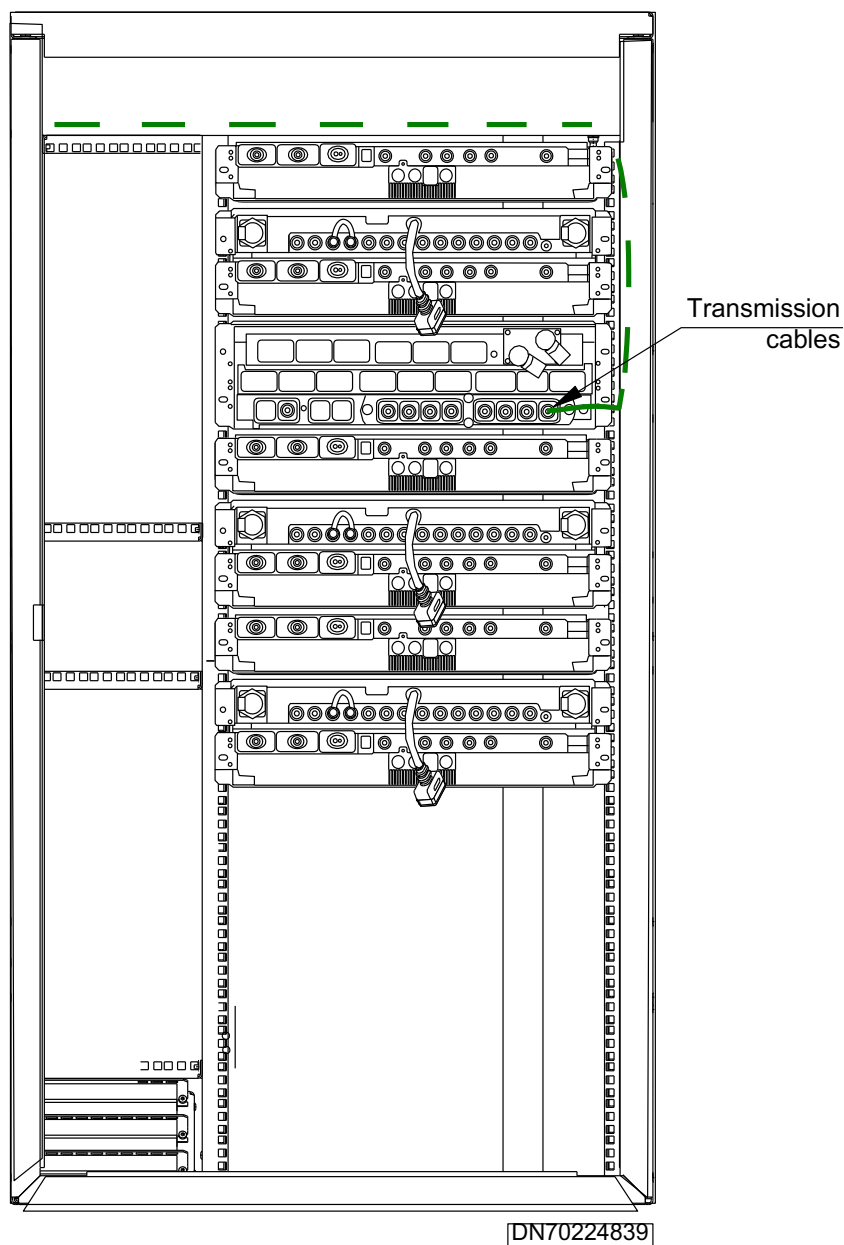


Figure 101. Transmission cables in a 3+3+3/4+4+4 FCOA configuration

4

Creating a 6+6 configuration

Purpose

A 6+6 configuration can be created in Flexi Cabinet for Indoor (FCIA) or Flexi Cabinet for Outdoor (FCOA).

Before you start

To create this configuration, you need:

- six Dual TRX Modules (EXxA)
- one System Module (ESMA)
- one transmission sub-module (FlxA)
- two Remote Tune Combiner Modules (ECxA)
- one System Extension Module (ESEA)



Steps

1. **Install the modules.**

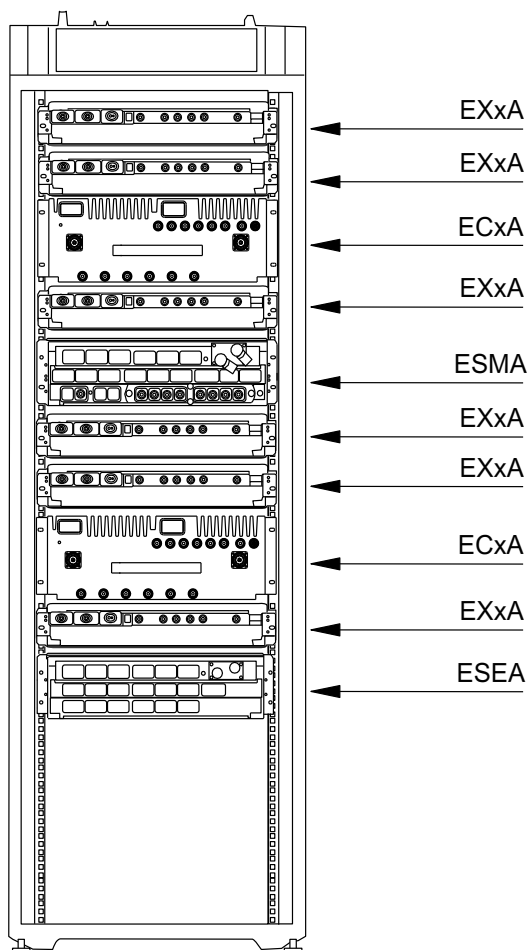


Figure 102. Module installation order in FCIA

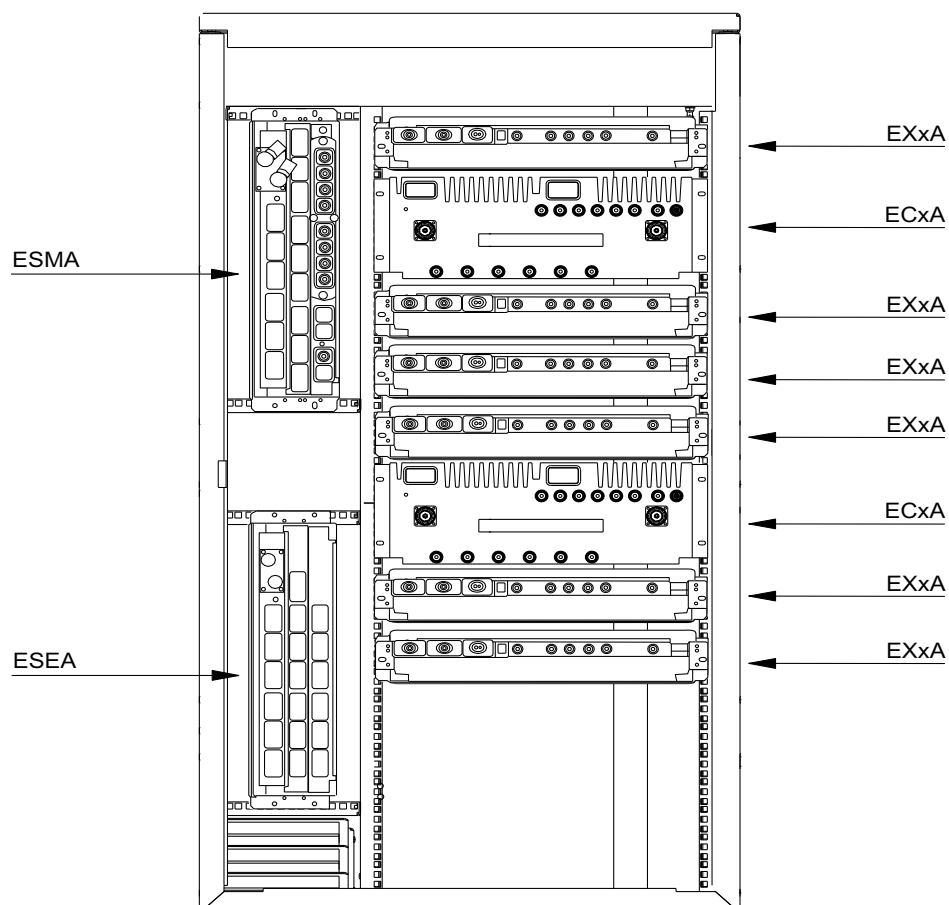


Figure 103. Module installation order in FCOA

2. Connect the cables.

The following figures show the RF cabling. For other cables, follow the instructions for a 3+3+3/4+4+4 2-way 2UD configuration.

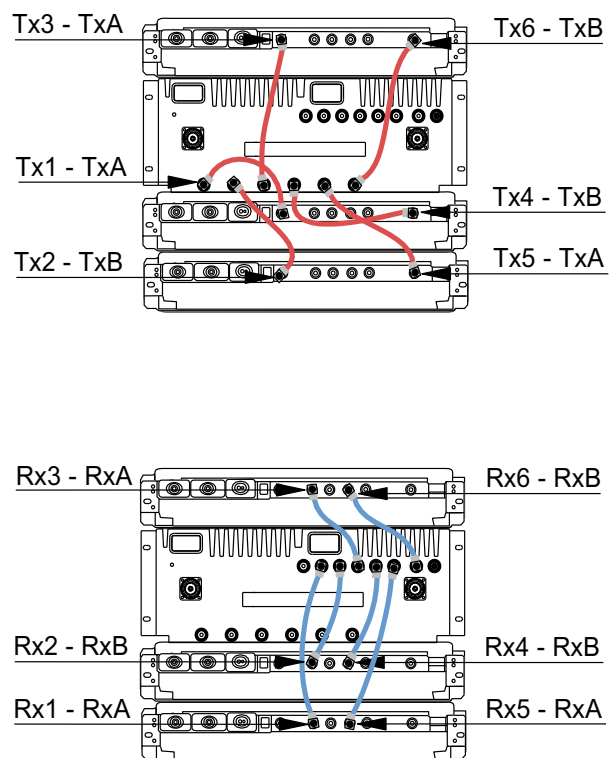


Figure 104. RF cabling

5

Dual band 2+2+2 and 2+2+2 configuration

A 2+2+2 and 2+2+2 dual band configuration can be installed on a wall, in Flexi Cabinet for Indoor (FCIA) and Flexi Cabinet for Outdoor (FCOA).

For creating a 2+2+2 and 2+2+2 dual band configuration, you need:

- six Dual TRX Modules (EXxA)
- six Dual Duplexer Modules (ERxA)
- one System Module (ESMA)
- Extension Cable Kit

The following figures show the module installation order for each installation type. For instructions on cabling, see the following:

- Bus and power cabling: follow the instructions for 3+3+3/4+4+4 2-way 2UD configuration.
- RF cabling: follow the instructions for 1+1+1/2+2+2 bypass 2UD configuration.

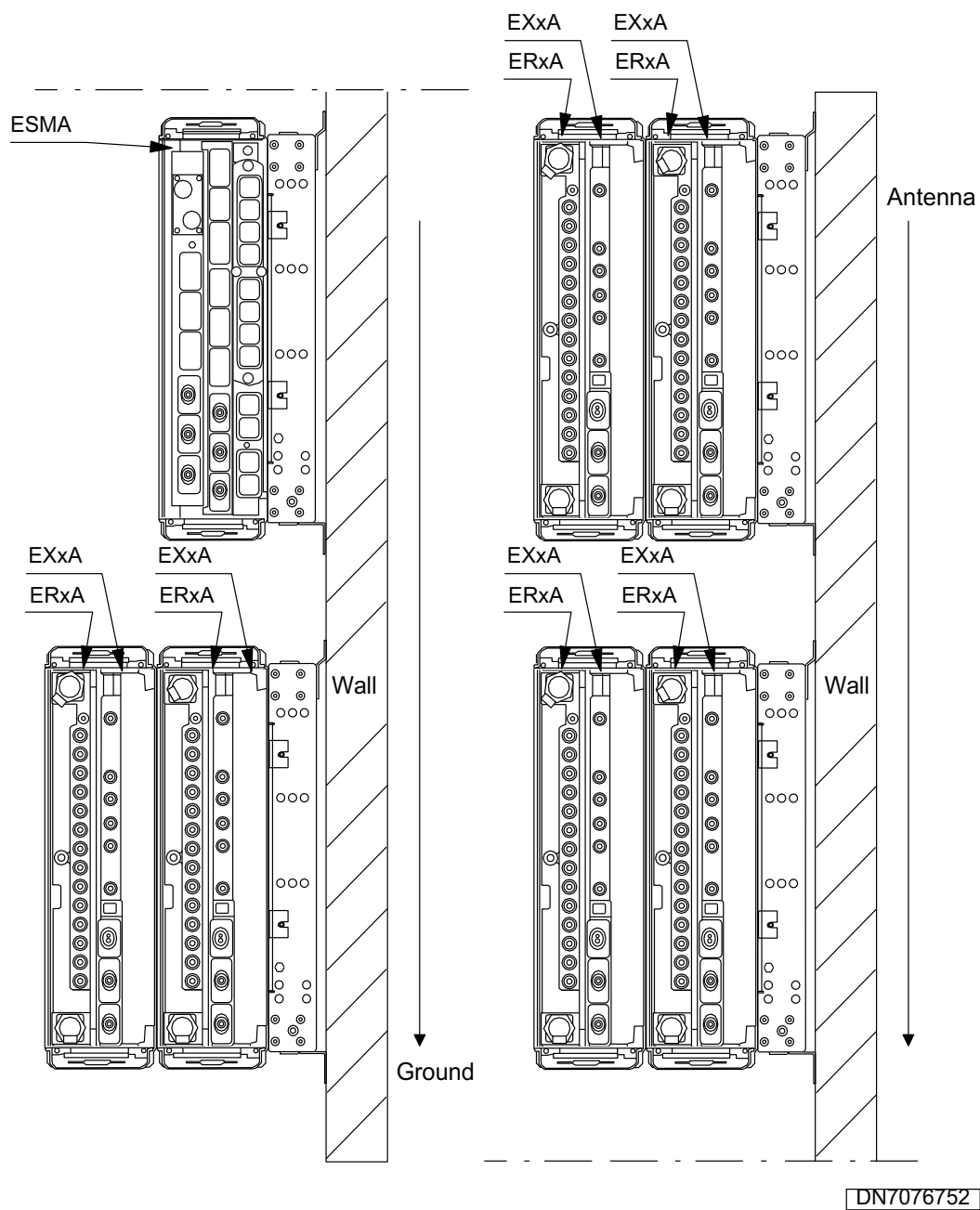


Figure 105. Module installation order in a 2+2+2 and 2+2+2 dual band configuration on a wall

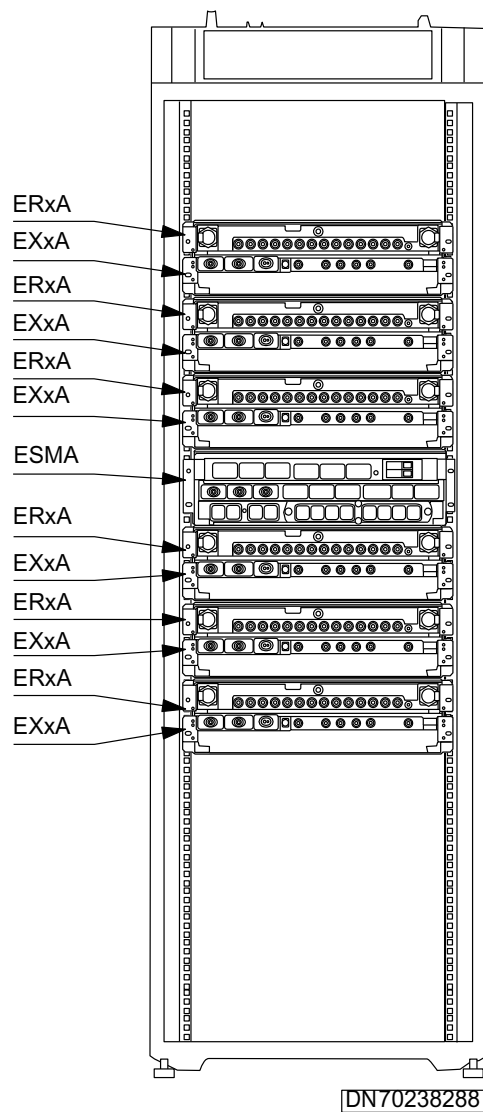


Figure 106. Module installation order in a 2+2+2 and 2+2+2 dual band configuration in FCIA

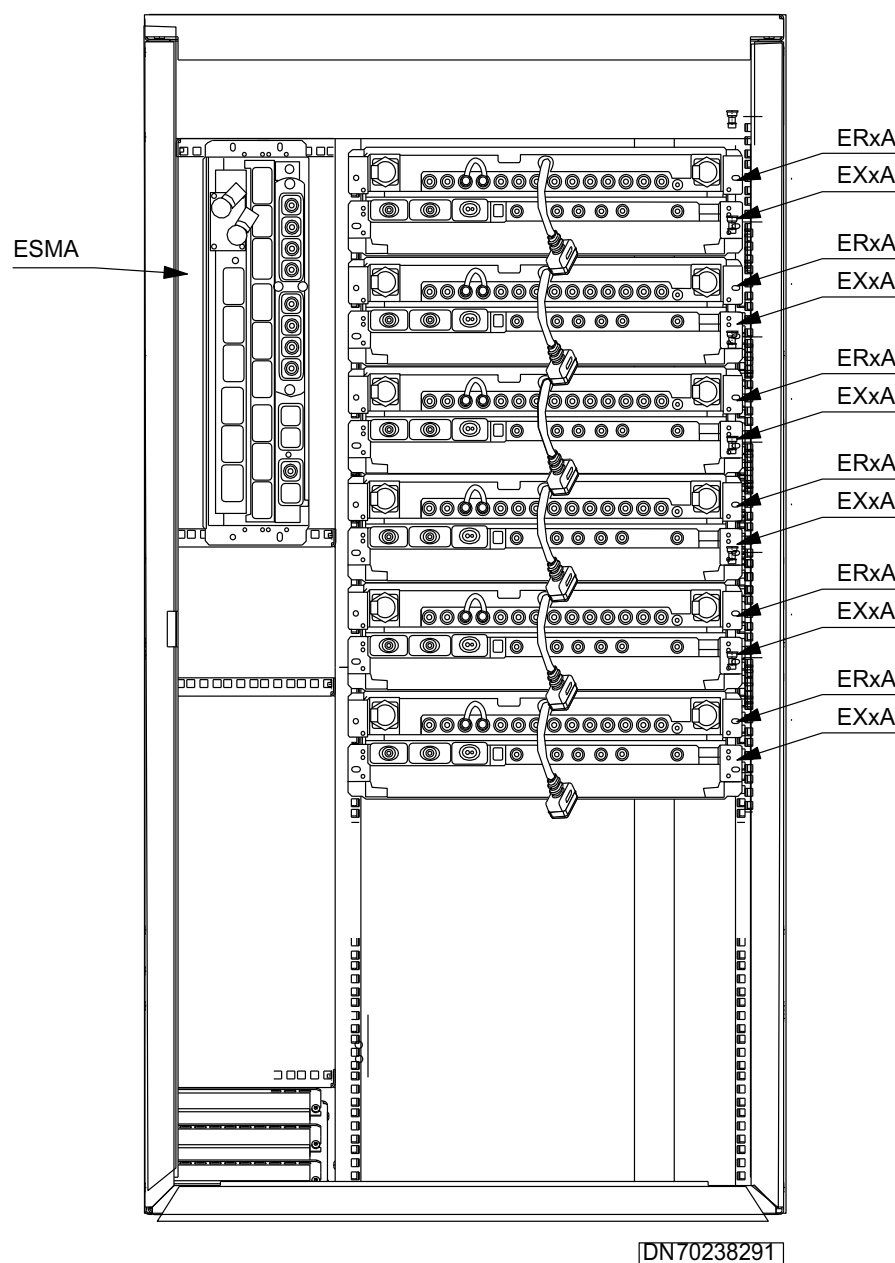


Figure 107. Module installation order in a 2+2+2 and 2+2+2 dual band configuration in FCOA

6

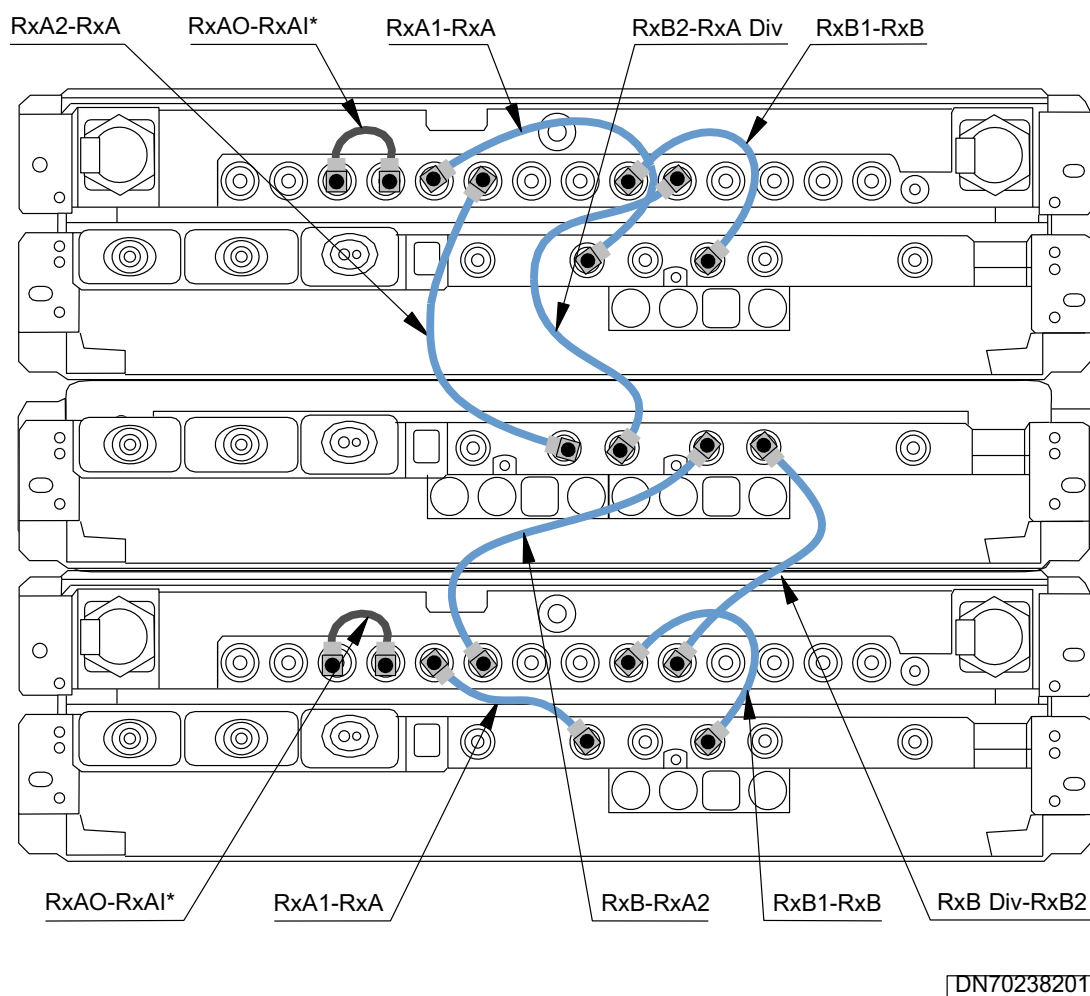
Cost-optimised 3+3 configuration

A cost-optimised 3+3 Flexi EDGE configuration can be installed in a stack, in Flexi Cabinet for Indoor (FCIA) and Flexi Cabinet for Outdoor (FCOA).

For creating this configuration, you need:

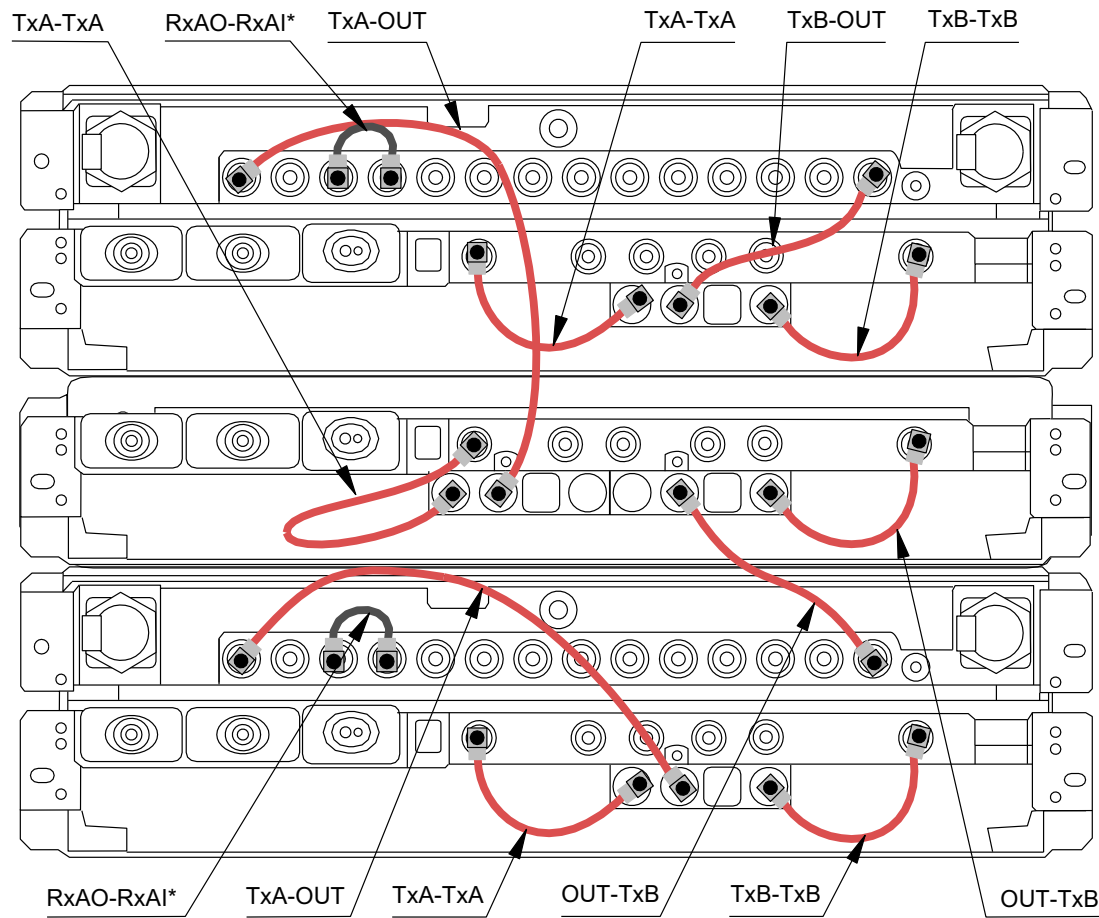
- one System Module (ESMA)
- three Dual TRX Modules (EXxA)
- two Dual Duplexer Modules (ERxA)
- four Wideband Combiner Sub-modules (EWxA)

The following figures show the RF cabling.



*) RxAO-RxAI is pre-installed

Figure 108. RX cables in a cost-optimized 3+3 configuration



DN70238213

*) RxAO-RxAI is pre-installed

Figure 109. TX cables in a cost-optimised 3+3 configuration

7

Flexi EDGE/WCDMA BTS multimode configurations

Overview

Nokia Flexi EDGE BTS and Nokia Flexi WCDMA BTS modules can be installed into the same stack or cabinet. Common installation kits and accessories can be used.

The same connection types and power supply types can be used. Flexi EDGE BTS and Flexi WCDMA BTS utilise the same Flexi power modules and can share the same site support system.

The BTSs can be interconnected with the $n \times E1/T1$ or Nokia FlexBus connection. The BTSs share a common physical transmission connection, but separate logical E1/T1-level connection to the upper network layer (BSC and RNC).

Antenna line sharing with Nokia Flexi WCDMA BTS can be arranged with a diplexer for combining and splitting of different antenna signals, if different frequency bands are used for GSM/EDGE and WCDMA/HSPA traffic.

Creating Flexi EDGE/WCDMA BTS multimode configurations

The following figures show how to install Flexi EDGE and Flexi WCDMA modules in Flexi Cabinet for Indoor (FCIA) and Flexi Cabinet for Outdoor (FCOA) in a 1+1+1/2+2+2 EDGE and 1+1+1 WCDMA configurations. Flexi WCDMA modules are installed on the bottom of the cabinet, and Flexi EDGE modules on top. The stickers on the cabinets show the installation location for Flexi EDGE and Flexi WCDMA modules.

For detailed instructions on installing and cabling Flexi WCDMA modules, see *Nokia Flexi WCDMA Base Station*, Product Documentation.

For detailed instructions on installing and cabling Flexi EDGE modules, see the configuration-specific instructions.

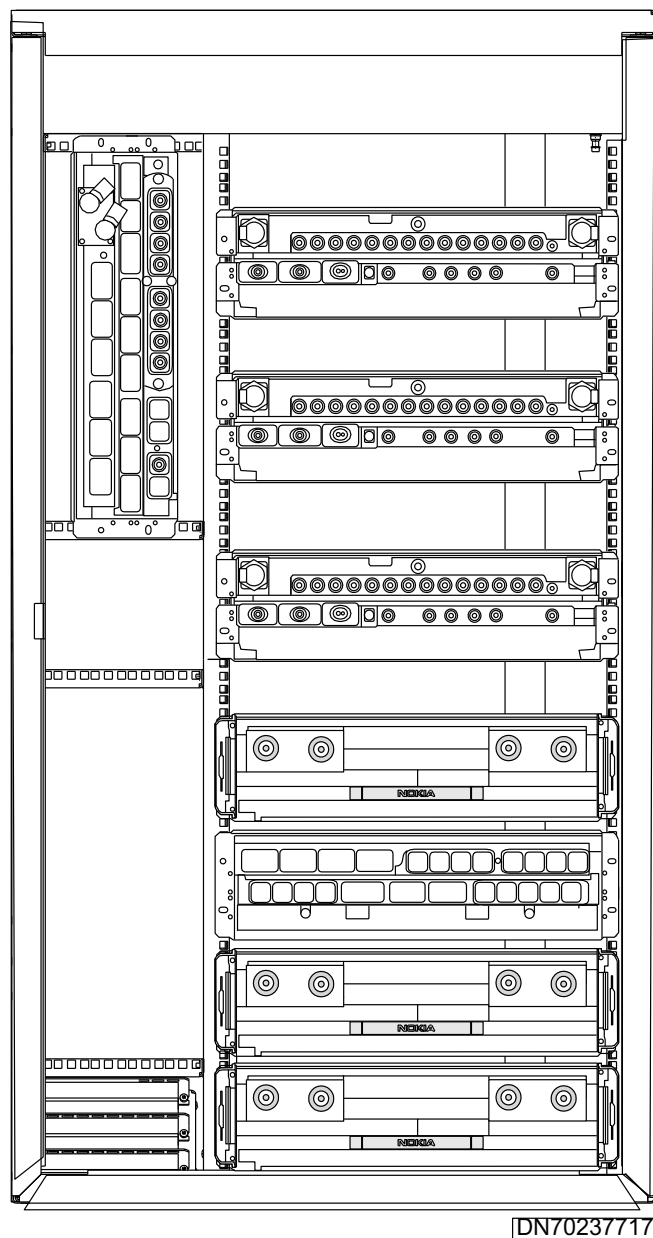


Figure 110. 1+1+1/2+2+2 EDGE and 1+1+1 WCDMA configuration in Flexi Cabinet for Outdoor (FCOA)

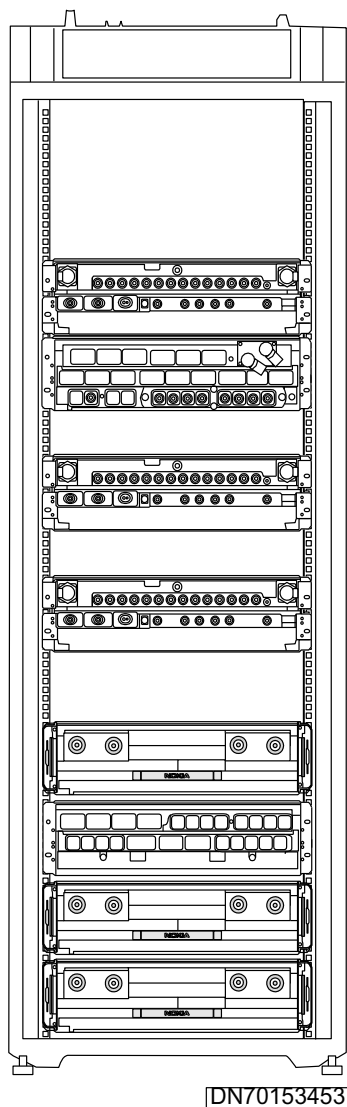


Figure 111. 1+1+1/2+2+2 EDGE and 1+1+1 WCDMA configuration in Flexi Cabinet for Indoor (FCIA)

8

Expanding to a 3+3+3/4+4+4 2-way 2UD (with EWxx) configuration

Before you start

For expanding from a 1+1+1/2+2+2 to a 3+3+3/4+4+4 configuration, you need

- three Dual TRX Modules (EXxA)
- six Wideband Combiner Sub-modules (EWxx)
- with stack installation, the Upgrade Cable Kit (EUCA) is needed.

Summary

The figures below show the module installation order in a 1+1+1/2+2+2 and 3+3+3/4+4+4 configurations (stack, FCIA and FCOA installation).

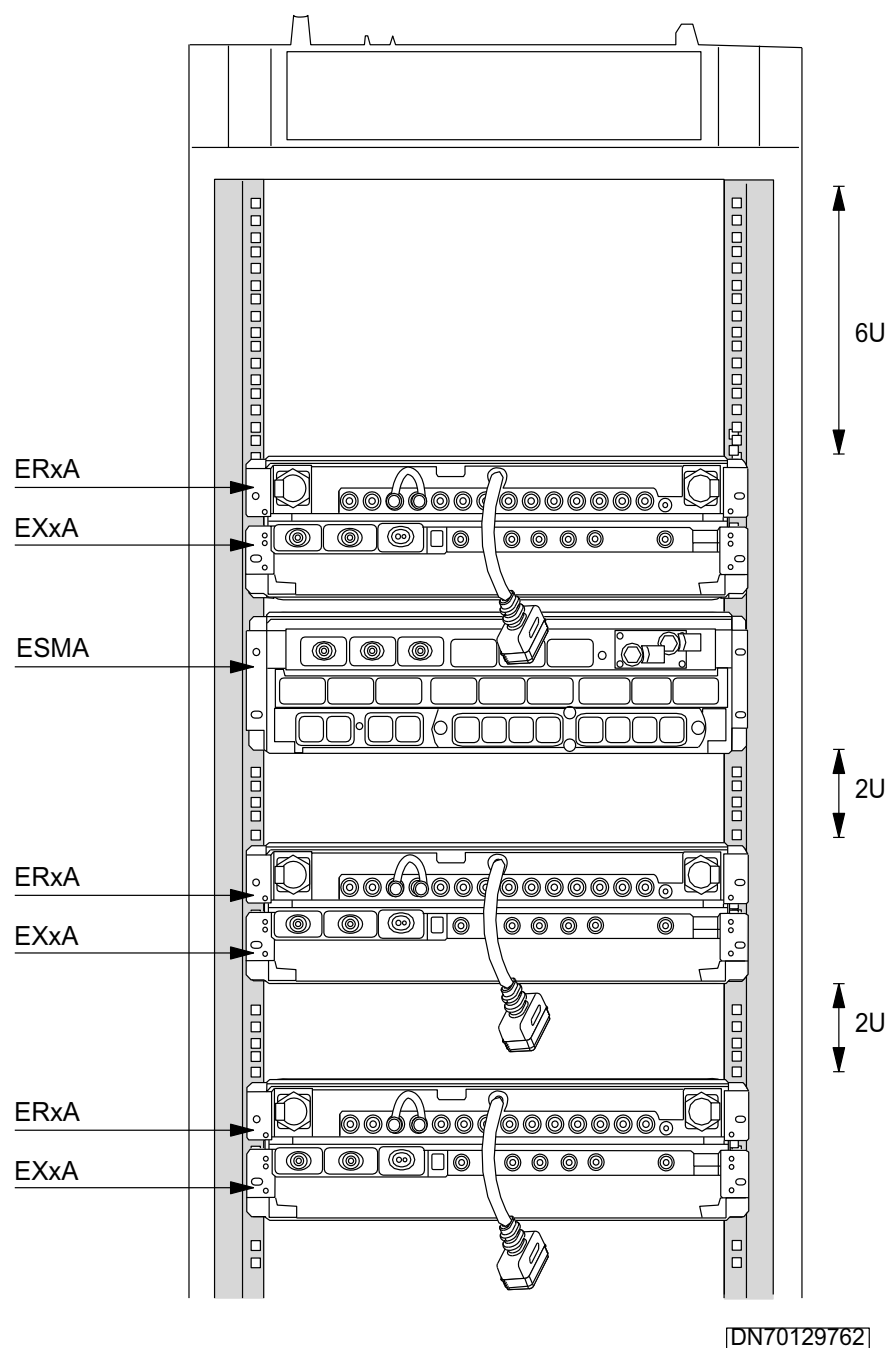


Figure 112. Modules in 1+1+1/2+2+2 configuration in FCIA

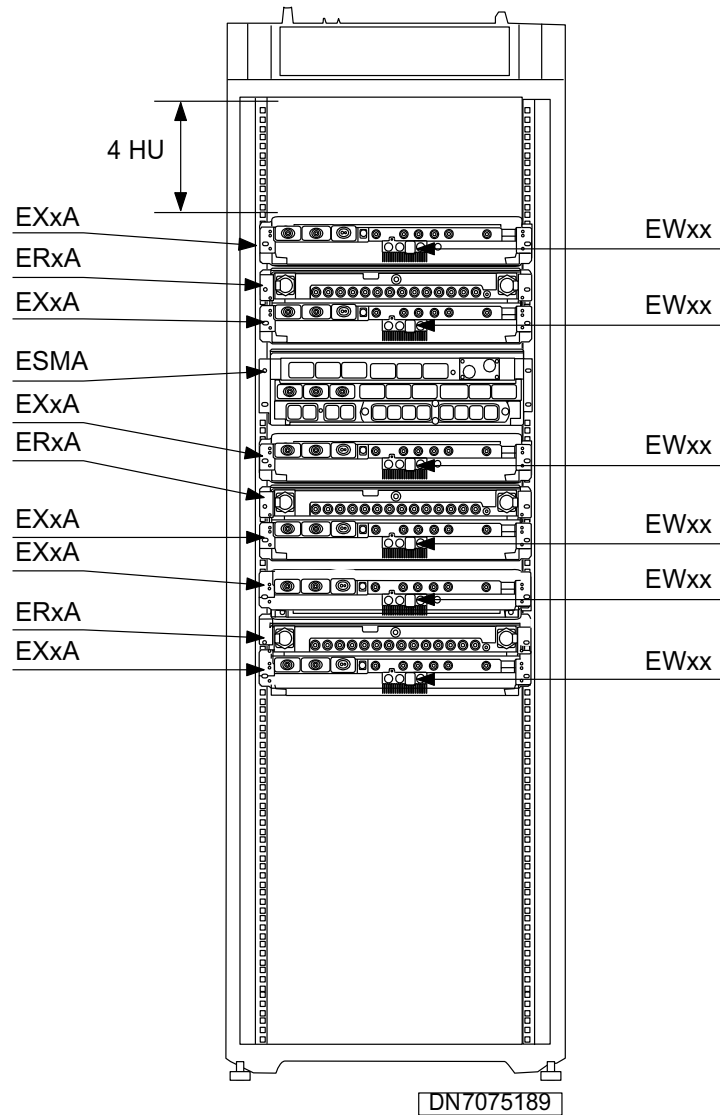


Figure 113. Modules in 3+3+3/4+4+4 configuration in FCIA

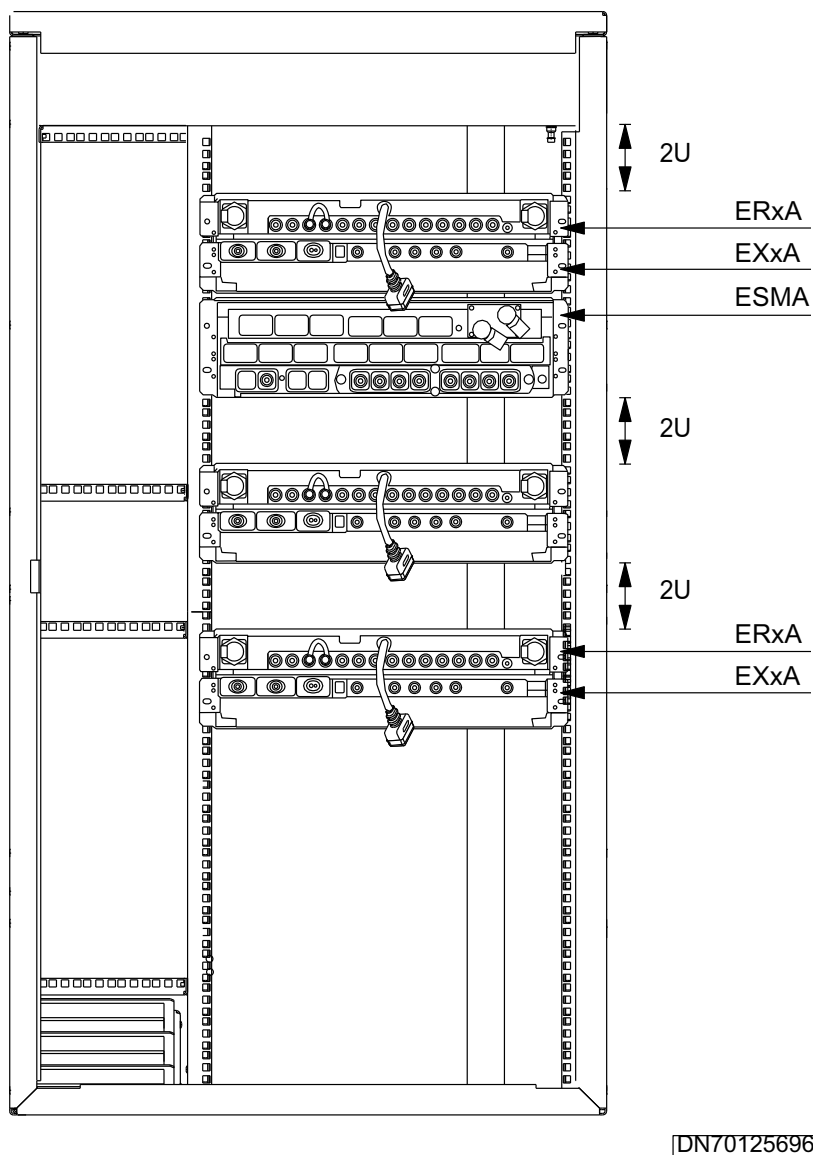


Figure 114. Modules in 1+1+1/2+2+2 configuration in FCOA

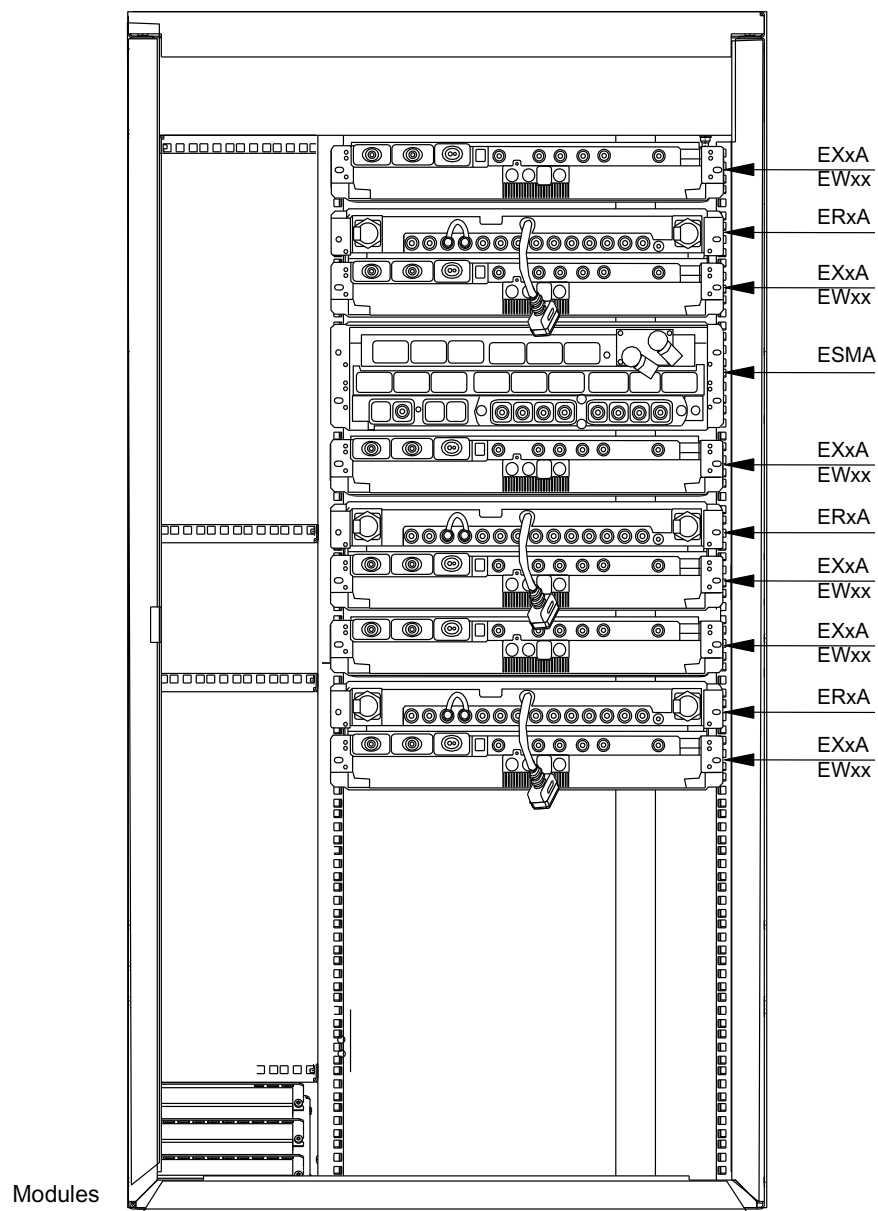


Figure 115. Modules in 3+3+3/4+4+4 configuration in FCOA

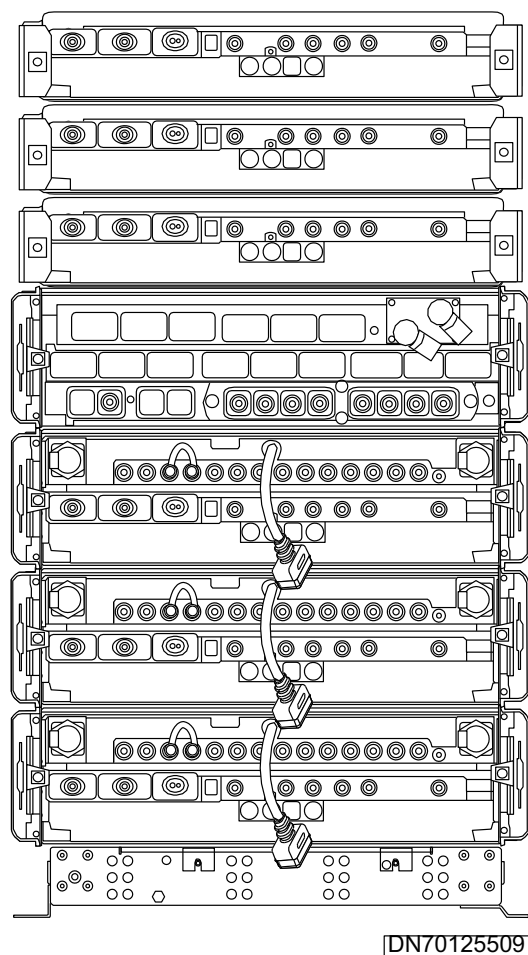


Figure 116. Modules in 3+3+3/4+4+4 stacked expansion



Steps

1. If front covers are used, remove the front covers from the System Module and Dual TRX Module in the sector being expanded.
2. Install the new Dual TRX Module.
3. If front covers are used, install the cable entries on the new Dual TRX Module.
4. Install the Wideband Combiner Sub-modules.

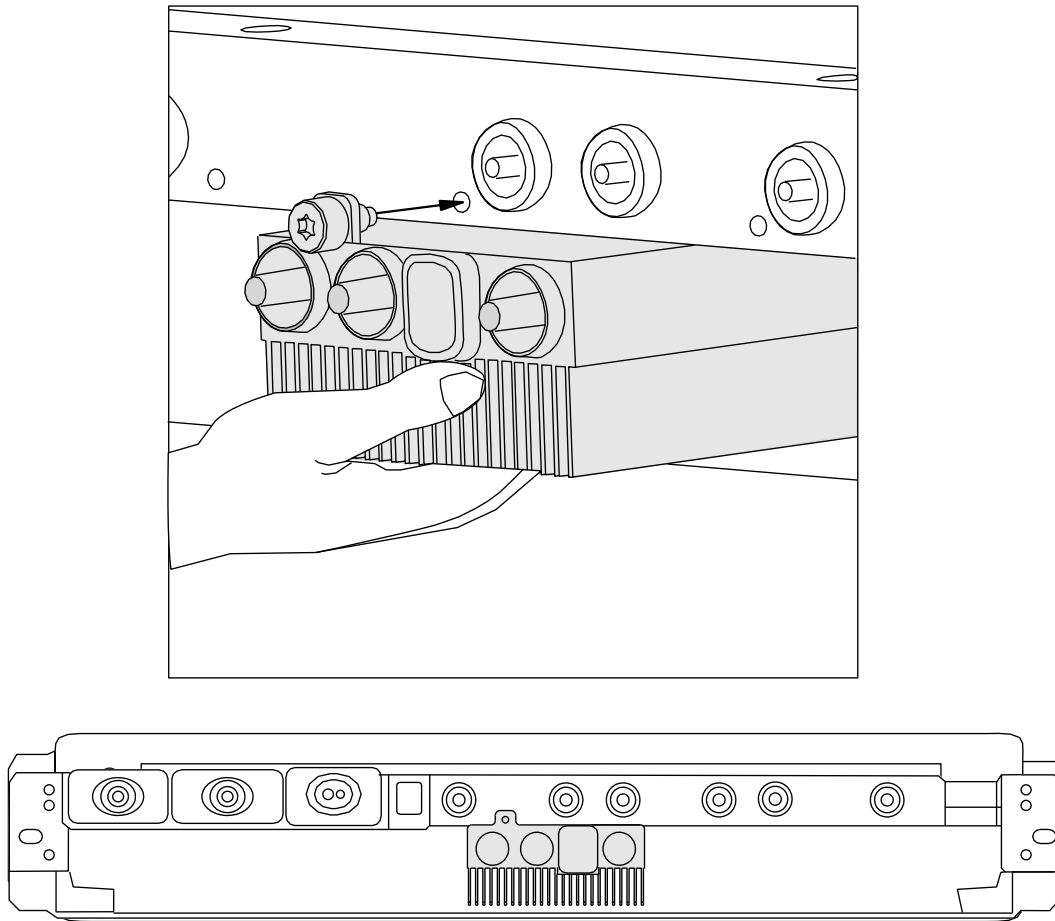


Figure 117. Installing Wideband Combiner Sub-module

5. **Connect the bus cable for the new Dual TRX Module.**
6. **Notify the appropriate personnel and block the sector with Nokia Flexi EDGE BTS Manager.**

Alternatively, you can request a sector lock from the BSC.
7. **Wait for stable yellow LED to be displayed on the existing Dual TRX Module.**
8. **Using Nokia Flexi EDGE BTS Manager, disable power to the System Module port on the existing and new Dual TRX Modules.**
9. **Connect the power cable for the new Dual TRX Module.**

10. Connect the RF cables as shown in the figure below.

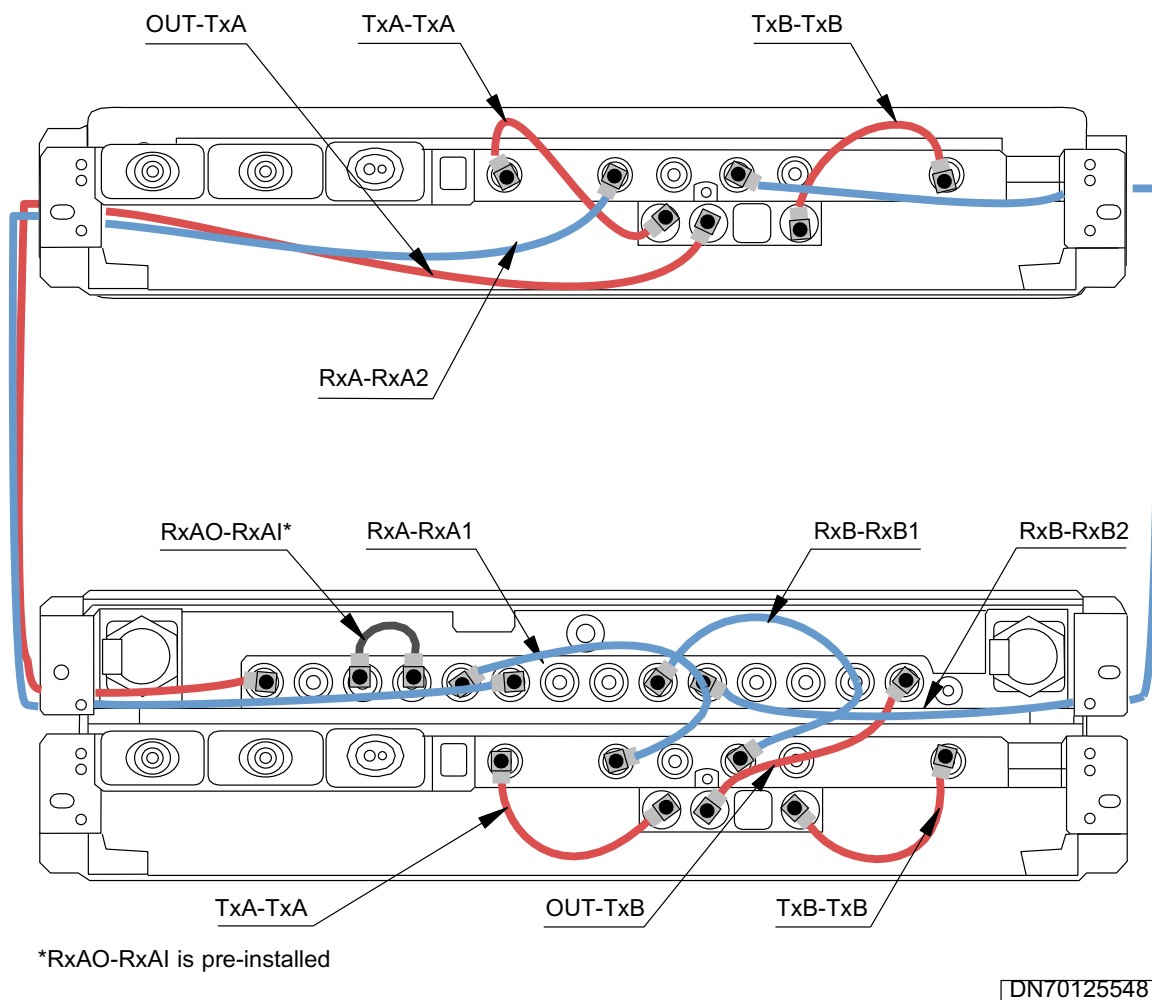


Figure 118. RF cables in 3+3+3/4+4+4 2-way 2UD expansion

Table 5. Connecting TX cables

Number	Cable	From - to
1	994931	TxA (ERxA) - TxA (EWxx)
2	994931	TxB (ERxA) - TxB (EWxx)
3	994931	OUT (EWxx) - TxB (ERxA)
4	994931	TxA (EXxA) - TxA (EWxx)

Table 5. Connecting TX cables (cont.)

5	994931	TxB (EXxA) - TxB (EWxx)
6	994936	OUT (EWxx) - TxA (ERxA)

Table 6. Connecting RX cables

<i>Number</i>	<i>Cable</i>	<i>From - to</i>
7	994936	RxA (EXxA) - RxA1 (ERxA)
8	994936	RxB (ERxA) - RxB4 (EXxA)
9	994931	RxA (ERxA) - RxA2 (EXxA)
10	994931	RxB (ERxA) - RxB1 (EXxA)

11. Enable power to the Dual TRX Modules.

12. Unblock the sector with Nokia Flexi EDGE BTS Manager.

Alternatively, you can request to unlock the sector from the BSC.

13. Reset the sector with Nokia Flexi EDGE BTS Manager.

14. If front covers are used, re-install them.

9

Optional power modules (FPDA and FPMA) in Flexi EDGE BTS configurations

The following table shows the number of power modules needed in Flexi EDGE BTS configurations if AC or 24 VDC power supply options are used. The power modules are:

- Flexi Power DC/DC Module 24 V (FPDA) and
- Flexi Power Module (FPMA) with AC/DC 230 V Sub-modules (FPAA)

Table 7. Number of power modules needed

<i>Configuration</i>	<i>Number of FPDAs</i>	<i>Number of FPMAs</i>
1+1+1/2+2+2 2UD bypass	1	1 FPMA with 2 FPAA's
3+3+3/4+4+4 2UD 2-way	2	1 FPMA with 4 FPAA's

The following figures show the installation location of the power modules for the 1+1+1/2+2+2 and 3+3+3/4+4+4 configurations, for each installation type.

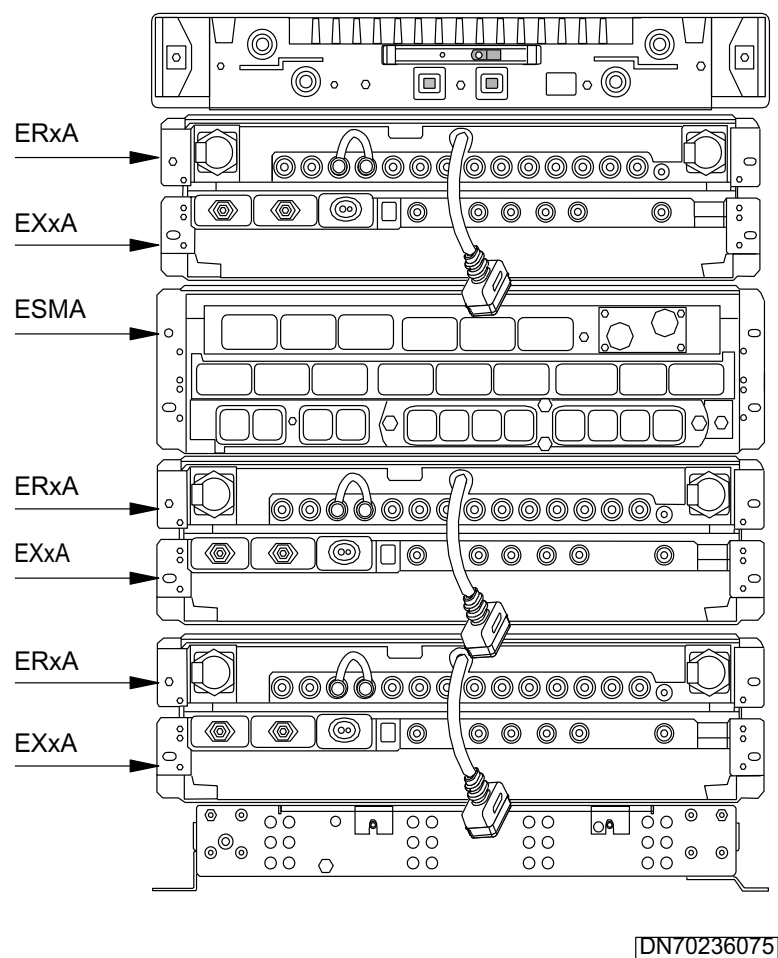


Figure 119. 1+1+1/2+2+2 configuration in a stack, with FPDA

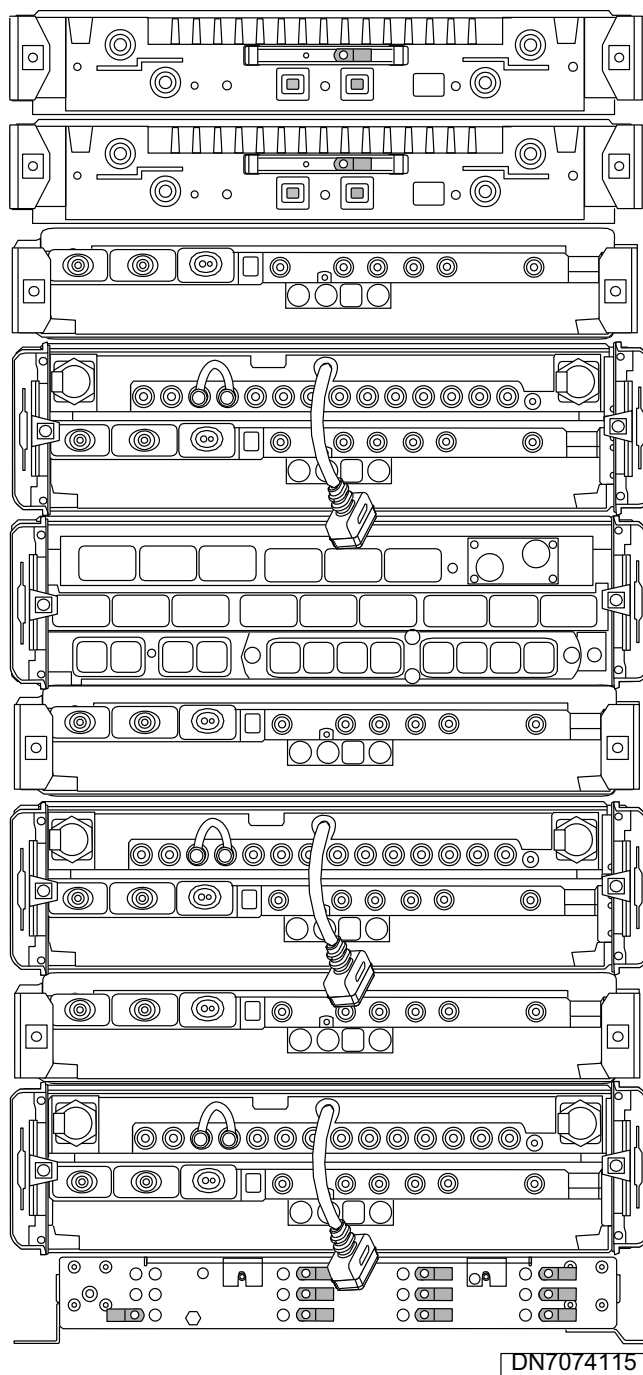


Figure 120. 3+3+3/4+4+4 configuration in a stack, with FPDAs

Note that in 3+3+3/4+4+4 stack configuration, it is also possible to place the power modules directly above the System Module (ESMA).

Wall installation

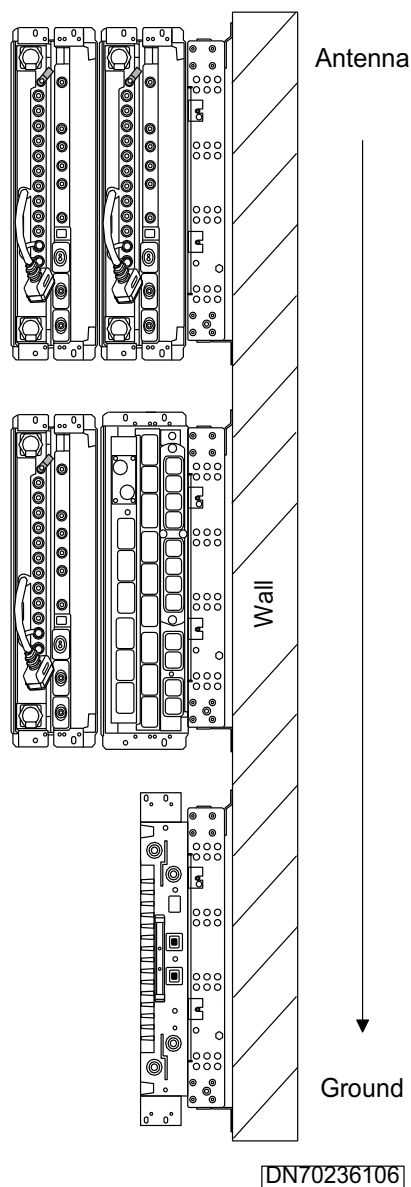
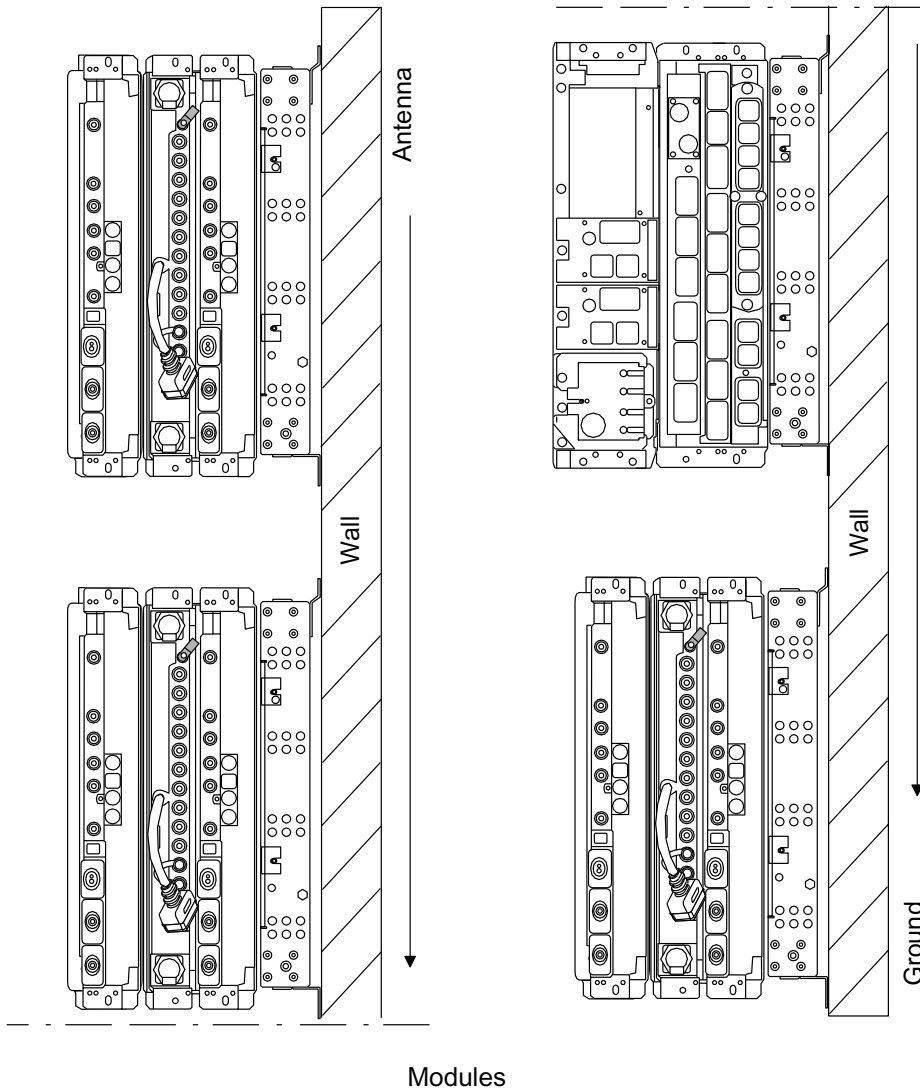


Figure 121. 1+1+1/2+2+2 configuration on a wall, with FPDA



DN70226118

Figure 122. 3+3+3/4+4+4 configuration on a wall, with FPMA

Pole installation

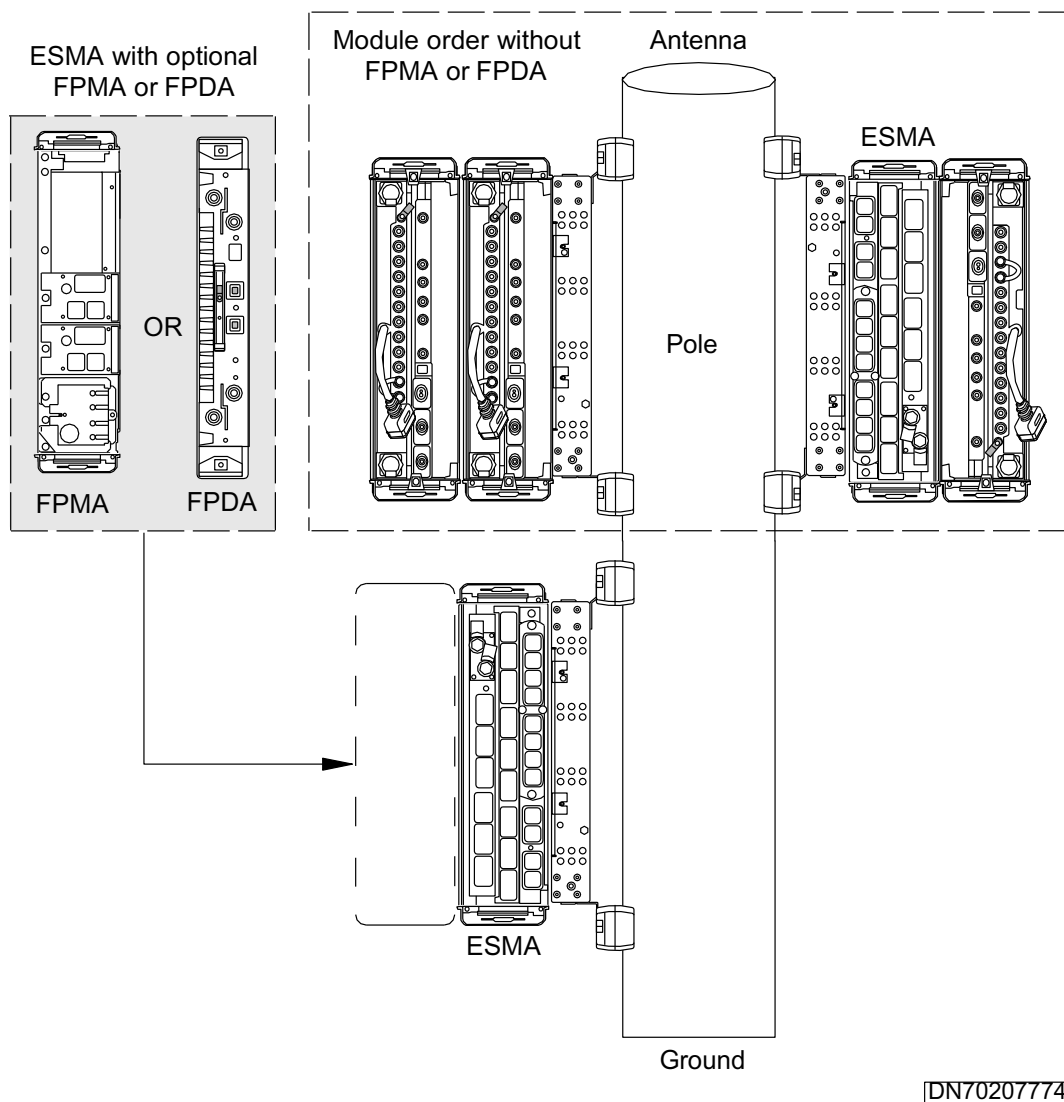


Figure 123. 1+1+1/2+2+2 configuration on a pole, with FPDA/FPMA

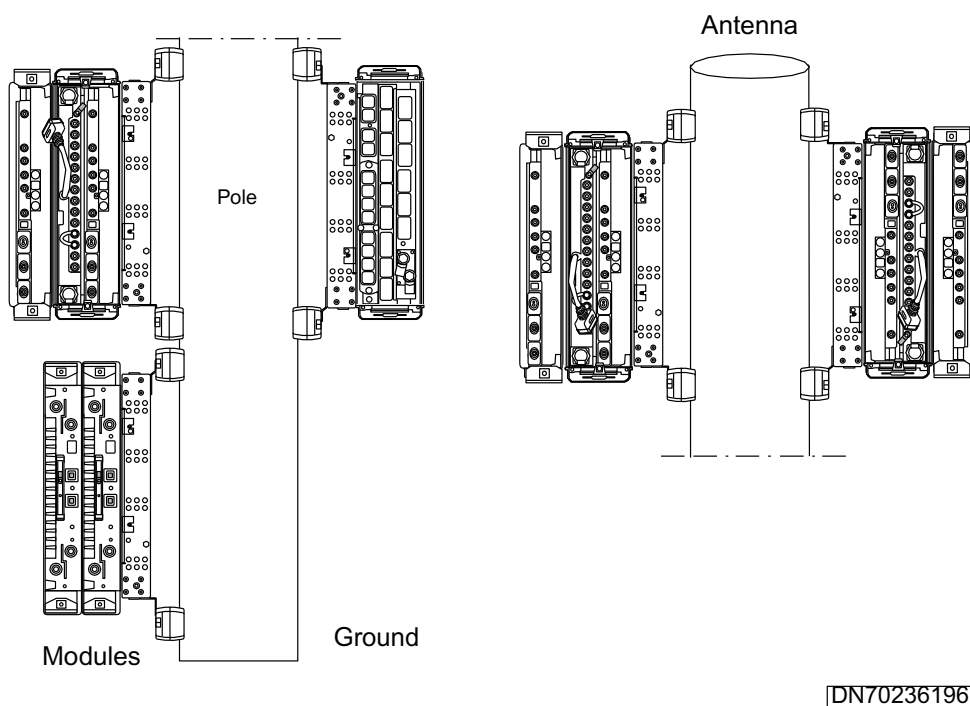
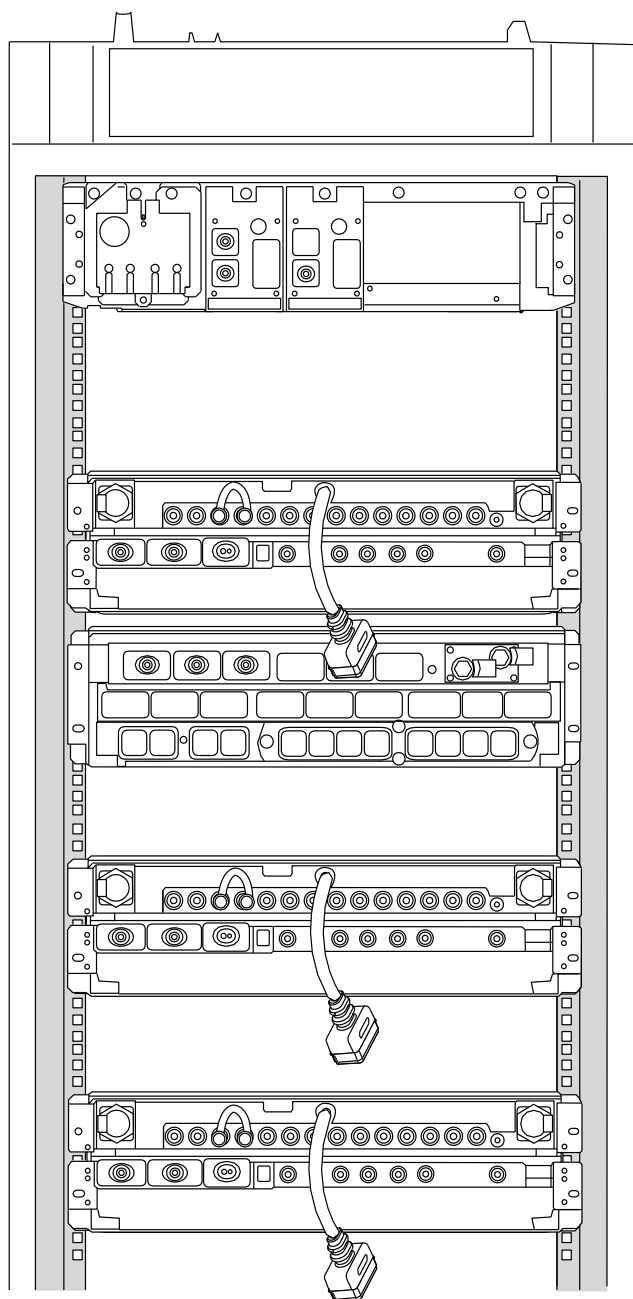


Figure 124. 3+3+3/4+4 configuration on a pole, with FPDAs

FCIA installation



DN70129762

Figure 125. 1+1+1/2+2+2 configuration in FCIA, with FPMA

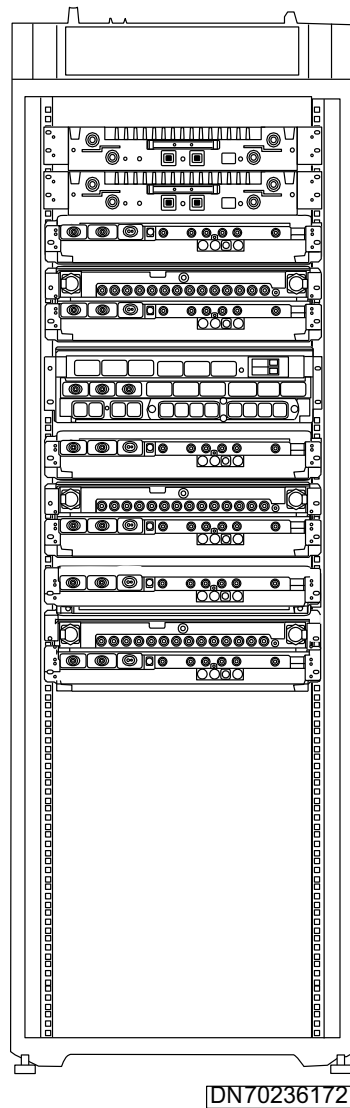


Figure 126. 3+3+3/4+4 configuration in FCIA, with FPDAs

FCOA installation

- If the System Module is on the vertical rack, install the power module on the vertical rack at the bottom.
- If the System Module is on the horizontal rack, install the power module(s) on the vertical rack on top.

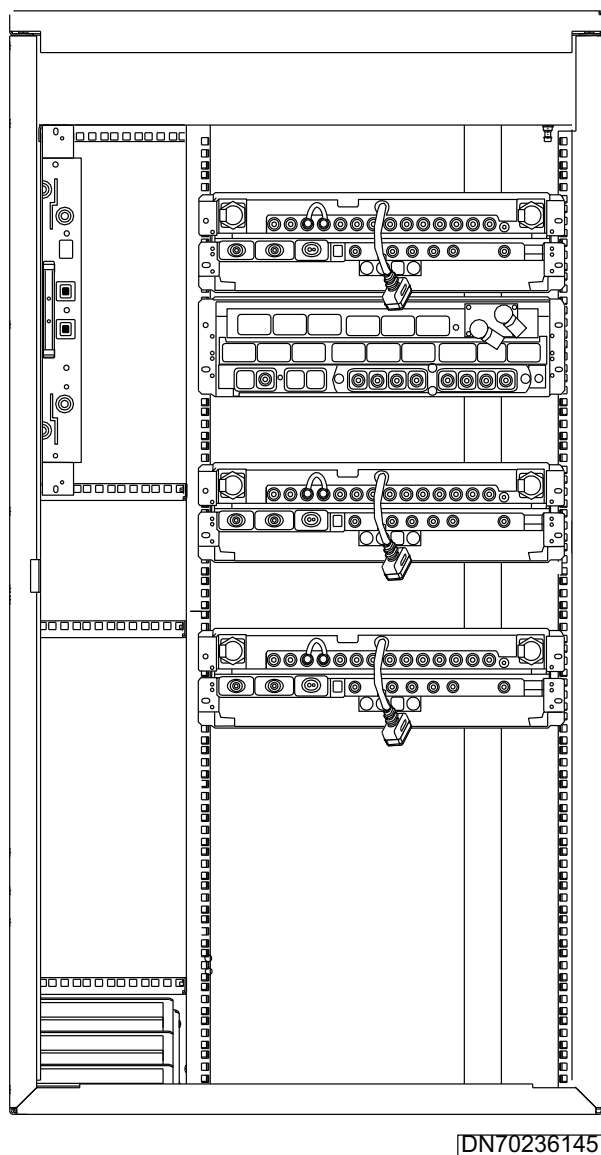


Figure 127. 1+1+1/2+2+2 configuration in FCOA, with FPDA (ESMA in horizontal rack)

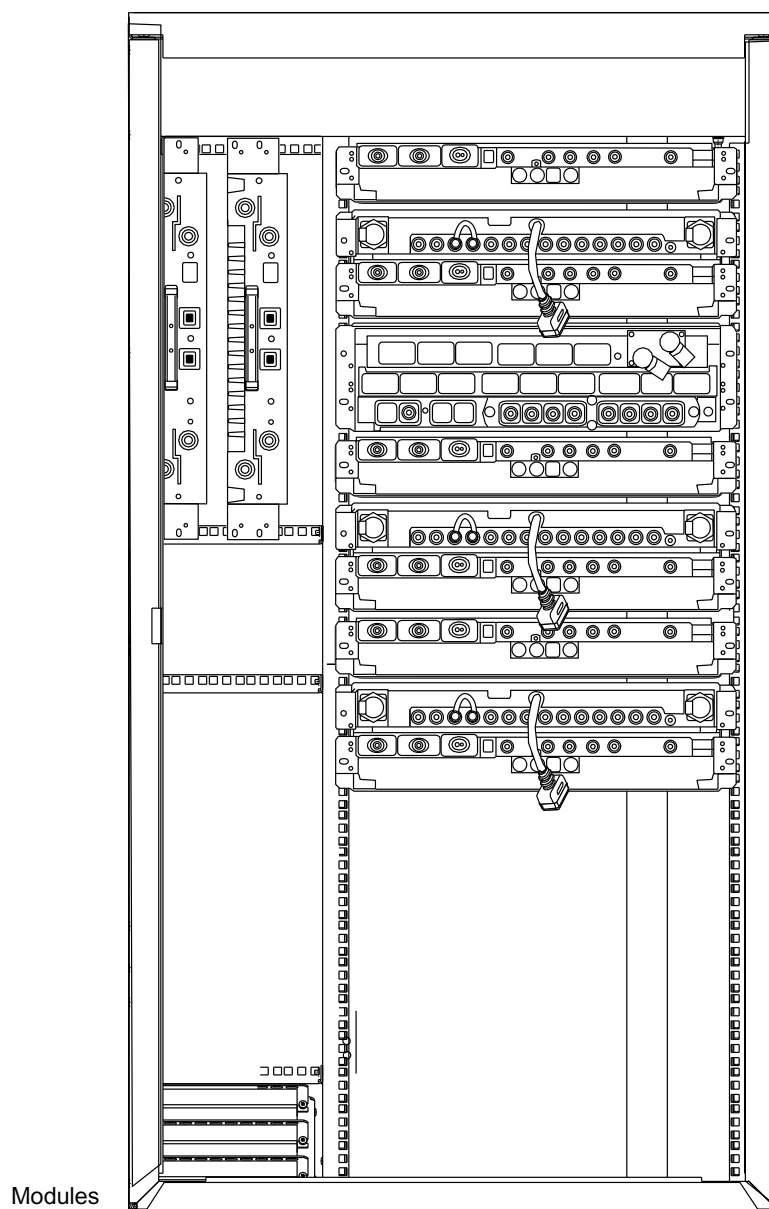


Figure 128. 3+3+3/4+4+4 configuration in FCOA, with FPDAs (ESMA in horizontal rack)