



## OSMINE Layout Rules

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In this appendix, “OPT-BST” refers to the OPT-BST, OPT-BST-E, OPT-BST-L cards, and to the OPT-AMP-L and OPT-AMP-17-C cards when they are provisioned in OPT-LINE (optical booster) mode. “OPT-PRE” refers to the OPT-PRE card and to the OPT-AMP-L and OPT-AMP-17-C cards provisioned in OPT-PRE (preamplifier) mode.

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### OSMINE Layout Rules for Software Release 9.2.1

The following table lists the OSMINE layout rules for various configurations and their card placements for Software Release 9.2.1.

Table 1: OSMINE Layout Rules for Software Release 9.2.1

Configuration	Card Placement	Condition
Hub node 32 channel (100GHz)	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —32 MUX-OS Slot 5 and 6 —32 DMX-O Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 and 13 —32 DMX-O Slot 14 and 15 —32 MUX-O Slot 16 —Pre Slot 17 —Booster (A)	Node containing the following: <ul style="list-style-type: none"> <li>• pre and booster units.</li> <li>• 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
OADM node	Slot 1 —Booster Slot 2 —Pre Slot 3 —AD-xC Slot 4 —AD-xC Slot 5 —AD-xC Slot 6 —MS-ISC Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —MS-ISC Slot 13 —AD-xC Slot 14 —AD-xC Slot 15 —AD-xC Slot 16 —Pre Slot 17 —Booster (A)	Nodes: <ul style="list-style-type: none"> <li>• containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
Line Amplifier mode	Slot 1 —Booster Slot 2 —Pre Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —BLANK Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —BLANK Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —Pre Slot 17 —Booster (A)	Nodes: <ul style="list-style-type: none"> <li>• containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
Line Site with OPT-RAMP-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —BLANK or TXP Slot 5 —BLANK or TXP Slot 6 —BLANK or TXP Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —BLANK or TXP Slot 13 —BLANK or TXP Slot 14 —BLANK or TXP Slot 15 —Booster Slot 16 and 17 —OPT-RAMP-C	Nodes: <ul style="list-style-type: none"> <li>• containing pre units.</li> <li>• not containing booster units.</li> </ul>

Configuration	Card Placement	Condition
OSC Regenerator site	Slot 1 —OSC-CSM Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —BLANK Slot 7 —TCC2P Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 —BLANK Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —OSC-CSM	Nodes not containing pre and booster units
32 channel ROADM/Hub node	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —32-WSS Slot 5 —32-DMX Slot 6 —MS-ISC Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —MS-ISC Slot 13 —32-DMX Slot 14 and 15 —32-WSS Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
40 channel ROADM/Hub node	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WSS Slot 5 —40-DMX Slot 6 —MS-ISC Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —MS-ISC Slot 13 —40-DMX Slot 14 and 15 —40-WSS Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
40 channel HUB/ROADM with OPT-RAMP-C	NC shelf Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —MS-ISC-100T Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC-100T Slot 13 —40-DMX Slot 14 and 15 —40-WSS Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	<ul style="list-style-type: none"> <li>• OPT-RAMP-C or OPT-RAMP-CE on both sides.</li> <li>• OPT-RAMP-CE can replace OPT-RAMP-C cards.</li> </ul>
	Subtended Opt shelf Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —BLANK or TXP Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or TXP Slot 13 —40-DMX Slot 14 and 15 —40-WSS Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	

Configuration	Card Placement	Condition
40 channel HUB/ROADM with OPT-RAMP-C	NC shelf Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —MS-ISC-100T Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC-100T Slot 13 —40-DMX Slot 14 and 15 —40-WSS Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	<ul style="list-style-type: none"> <li>• OPT-RAMP-C or OPT-RAMP-CE on one side only.</li> <li>• OPT-RAMP-CE can replace OPT-RAMP-C.</li> </ul>
	Subtended shelf Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WSS Slot 5 —40-DMX Slot 6 —BLANK or TXP Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or TXP Slot 13 —BLANK or TXP Slot 14 —BLANK or TXP Slot 15 —BLANK or TXP Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	

Configuration	Card Placement	Condition
40 channel HUB with 40-MUX-C	Slot 1 —Booster Slot 2 —Pre Slot 3 —40-DMX-C Slot 4 —40-MUX-C Slot 5 —BLANK or TXPs Slot 6 —MS-ISC Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —MS-ISC Slot 13 —BLANK or TXPs Slot 14 —40-MUX-C Slot 15 —40-DMX-C Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.
32 channel Terminal Site (Half of Hub node)	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —32-WSS Slot 5 —32-DMX Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	Nodes containing pre and booster units.



Configuration	Card Placement	Condition
40 channel Terminal Site (Half of Hub node)	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WSS Slot 5 —40-DMX Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	Nodes containing pre and booster units.
40 channel Terminal Site with OPT-RAMP-C	NC shelf Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —MS-ISC-100T Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC-100T Slot 13 —40-DMX Slot 14 and 15 —40-WSS Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
40 channel Terminal Site with 40-MUX-C (Half Hub)	Slot 1 —Booster Slot 2 —Pre Slot 3 —40-DMX-C Slot 4 —40-MUX-C Slot 5 —BLANK or TXPs Slot 6 —MS-ISC Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 —MS-ISC Slot 13 —BLANK or TXPs Slot 14 —BLANK or TXPs Slot 15 —BLANK or TXPs Slot 16 —BLANK or TXPs Slot 17 —BLANK or TXPs	Nodes containing pre and booster units.
32 channel Gain Equalizer	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —32-WSS Slot 5 —BLANK or TXPs Slot 6 —BLANK or TXPs Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —BLANK or TXPs Slot 13 —BLANK or TXPs Slot 14 and 15 —32-WSS Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
40 channel Gain Equalizer with OPT-RAMP-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 and 5 —40-WSS-C Slot 6 —BLANK Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —BLANK Slot 13 and 14 —40-WSS-C Slot 15 —Booster Slot 16 and 17 —OPT-RAMP-C	Nodes: <ul style="list-style-type: none"> <li>• not containing pre units.</li> <li>• containing booster units.</li> </ul>
40 channel n-degree ROADM—Optical shelf	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WXC-C Slot 5 —40-MUX-C Slot 6 —40-DMX-C Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —40-DMX-C Slot 13 —40-MUX-C Slot 14 and 15 —40-WXC-C Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
40 channel 4-degree ROADM	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WXC-C Slot 5 —40-MUX-C Slot 6 —40-DMX-C Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —40-DMX-C Slot 13 —40-MUX-C Slot 14 and 15 —40-WXC-C Slot 16 —Pre Slot 17 —Booster	<ul style="list-style-type: none"> <li>• Maximum 30 shelves.</li> <li>• Nodes containing pre and booster units.</li> </ul>
40 channel 8-degree ROADM (Maximum 30 shelves)	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WXC-C Slot 5 —40-MUX-C Slot 6 —40-DMX-C Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —40-DMX-C Slot 13 —40-MUX-C Slot 14 and 15 —40-WXC-C Slot 16 —Pre Slot 17 —Booster	Nodes containing pre and booster units.

Configuration	Card Placement	Condition
n degree ROADM with OPT-RAMP-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —MS-ISC-100T Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC-100T Slot 13 —40-DMX-C Slot 14 —40-MUX-C Slot 15 and 16 —40-WXC-C Slot 17 —BLANK or TXP	<ul style="list-style-type: none"> <li>• MS-ISC-100T is optional.</li> <li>• NC shelf.</li> </ul>
	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —Pre Slot 5 —BLANK or TXP Slot 6 —BLANK or TXP Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or TXP Slot 13 —40-DMX-C Slot 14 —40-MUX-C Slot 15 and 16 —40-WXC-C Slot 17 —BLANK or TXP	<ul style="list-style-type: none"> <li>• MS-ISC-100T is optional.</li> <li>• Subtended ROADM shelf with OPT-RAMP-C or OPT-RAMP-CE.</li> </ul>
		<ul style="list-style-type: none"> <li>• Subtended TXP shelf.</li> <li>• Nodes not containing pre and booster units.</li> </ul>

Configuration	Card Placement	Condition
	Slot 1 —BLANK or TXP Slot 2 —BLANK or TXP Slot 3 —BLANK or TXP Slot 4 —BLANK or TXP Slot 5 —BLANK or TXP Slot 6 —BLANK or TXP Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or TXP Slot 13 —BLANK or TXP Slot 14 —BLANK or TXP Slot 15 —BLANK or TXP Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	
	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —40-WXC-C Slot 5 —40-MUX-C Slot 6 —40-DMX-C Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —40-MUX-C Slot 13 —40-DMX-C Slot 14 and 15 —40-WXC-C Slot 16 —Pre Slot 17 —Booster	<ul style="list-style-type: none"> <li>• Subtended ROADM shelf without OPT-RAMP-C or OPT-RAMP-CE.</li> <li>• Nodes containing pre and booster units.</li> </ul>

Configuration	Card Placement	Condition
PSM channel Protection	TXP shelf (Sample 1) Slot 1 —PSM Slot 2 —TXP Slot 3 —PSM Slot 4 —TXP Slot 5 —PSM Slot 6 —TXP Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —PSM Slot 13 —TXP Slot 14 —PSM Slot 15 —TXP Slot 16 —PSM Slot 17 —TXP	<ul style="list-style-type: none"> <li>• TXP can be one slot or two slot.</li> <li>• Focus on 10-DME, 10-DMEX, 4x2.5 MUXP, and 40G.</li> </ul>
	TXP shelf (Sample 2) Slot 1 —PSM Slot 2 and 3 —TXP Slot 4 —PSM Slot 5 and 6 —TXP Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —PSM Slot 13 —TXP Slot 14 —PSM Slot 15 —TXP Slot 16 —PSM Slot 17 —TXP	

Configuration	Card Placement	Condition
40 channel ROADM/ HUB—40-SMR1-C	Sh1 - Option 1 Slot 1 —Booster Slot 2 —40-SMR1-C Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —40-SMR1-C Slot 17 —Booster	Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
		Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>



Configuration	Card Placement	Condition
	Sh1 - Option 2 Slot 1 —40-SMR1-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —40-SMR1-C	

Configuration	Card Placement	Condition
40 channel ROADM/HUB—40-SMR1-C	Slot 1 —40-SMR2-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —40-SMR2-C	Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
40 channel ROADM/HUB with OPT-RAMP-C – 40-SMR1-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —40-SMR1-C Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —40-SMR1-C Slot 15 —Booster Slot 16 and 17 —OPT-RAMP-C	Nodes: <ul style="list-style-type: none"> <li>• not containing pre units.</li> <li>• containing booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
40 channel Terminal Site—40-SMR1-C	Shelf 1 - Option A Slot 1 —Booster Slot 2 —40-SMR1-C Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	Nodes: <ul style="list-style-type: none"> <li>• not containing pre units.</li> <li>• containing booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
		Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
	Shelf 1 - Option B Slot 1 —40-SMR1-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	

Configuration	Card Placement	Condition
40 channel Terminal Site—40-SMR2-C	Shelf 1 - Option C Slot 1 —40-SMR2-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
40 channel Terminal Site with OPT-RAMP-C – 40-SMR1-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —40-SMR1-C Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	Nodes: <ul style="list-style-type: none"> <li>• not containing pre units.</li> <li>• containing booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
40 channel 4-degree ROADM—40-SMR 1-C	Slot 1 —40-SMR2-C Slot 2 —40-SMR2-C Slot 3 —OSC-CSM Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —OSC-CSM Slot 16 —40-SMR2-C Slot 17 —40-SMR2-C	<ul style="list-style-type: none"> <li>• This 4-degree node may also be configured with the 4-degrees spanning two, three, or four shelves.</li> <li>• 40-SMR1-C and OSC-CSM are supported only for management supervisory channel capability.</li> </ul>

Configuration	Card Placement	Condition
40 channel Gain Equalizer— 40-SMR1-C	Option A Slot 1 —Booster Slot 2 —40-SMR1-C Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —40-SMR1-C Slot 17 —Booster	Nodes: <ul style="list-style-type: none"> <li>• not containing pre.</li> <li>• containing booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
		Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
	Option B Slot 1 —40-SMR1-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —40-SMR1-C	



Configuration	Card Placement	Condition
	Option C Slot 1 —40-SMR2-C Slot 2 —BLANK Slot 3 —BLANK Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —40-SMR2-C	Nodes: <ul style="list-style-type: none"> <li>• not containing pre and booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>
40 channel Gain Equalizer with OPT-RAMP-C – 40-SMR1-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —Booster Slot 4 —40-SMR1-C Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —40-SMR1-C Slot 15 —Booster Slot 16 and 17 —OPT-RAMP-C	Nodes: <ul style="list-style-type: none"> <li>• not containing pre units.</li> <li>• containing booster units.</li> <li>• not containing 32-channel MUX-O and 32-channel DMX-O units.</li> </ul>

Configuration	Card Placement	Condition
40 channel n-degree ROADM — omnidirectional colored side	Slot 1 —40-MUX-C Slot 2 —40-DMX-C Slot 3 —Pre Slot 4 —Pre Slot 5 and 6 —40-WXC-C Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —Any Other Side Slot 11 —TCC2 Slot 12 —Any Other Side Slot 13 —Any Other Side Slot 14 —Any Other Side Slot 15 —Any Other Side Slot 16 —Any Other Side Slot 17 —Any Other Side	Any other side can equip another omnidirectional side: <ul style="list-style-type: none"> <li>• Slot 12 and 13: 40-WXC-C</li> <li>• Slot 14: Pre</li> <li>• Slot 15: Pre</li> <li>• slot 16: DMX</li> <li>• slot 17: MUX</li> </ul>
40 channel colorless terminal site configuration	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —80-WXC-C Slot 5 and 6 —80-WXC-C Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 and 13 —80-WXC-C Slot 14 and 15 —80-WXC-C Slot 16 —BLANK Slot 17 —BLANK	Slot 16 can equip 40-DMX and slot 17 can equip 40-MUX to replace passive Odd (MD-40-ODD). They are connected to L1 MUX/DMX (port EAD 1). WXC Role: <ul style="list-style-type: none"> <li>• Slot 3: L1 MUX</li> <li>• Slot 5: L1 DMX</li> <li>• Slot 12: L2 MUX</li> <li>• Slot 14: L2 DMX</li> </ul>

Configuration	Card Placement	Condition
40 channel n-degree ROADM—WXC - colorless side	Slot 1 —Booster Slot 2 —Pre Slot 3 and 4 —80-WXC-C Slot 5 and 6 —80-WXC-C Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 and 13 —40-WXC-C Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	<ul style="list-style-type: none"> <li>• 80 WXC is connected to the Add/Drop port of the 40-WXC-C card as a colorless MUX and DMX.</li> <li>• Add and drops ports from the 80-WXC-C can be OCH or OMS.</li> </ul>
40 channel n-degree ROADM-colorless and omnidirectional side	Slot 1 and 2 —80-WXC-C Slot 3 and 4 —80-WXC-C Slot 5 —Pre Slot 6 —Pre Slot 7 —TCC2P Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 and 13 —40-WXC-C Slot 14 —BLANK Slot 15 —BLANK Slot 16 —BLANK Slot 17 —BLANK	<ul style="list-style-type: none"> <li>• Passive MD can be subtended to L1 MUX/DMX.</li> <li>• 80 WXC are connected to the pre amplifiers as colorless omnidirectional MUX and DMX.</li> <li>• Add and drop ports from the 80-WXC-C can be OCH or OMS.</li> </ul> <p>WXC Role:</p> <ul style="list-style-type: none"> <li>• Slot 1: MUX</li> <li>• Slot 3: DMX</li> </ul> <p>Additional cards:</p> <ul style="list-style-type: none"> <li>• Slot 14: MUX to extend add ports &gt; 9.</li> <li>• Slot 16: DMX to extend drop ports &gt; 9.</li> </ul>

Configuration	Card Placement	Condition
40 channel–non DWDM	Standalone shelf Slot 1 —Booster or TXP Slot 2 —BLANK or Pre or Booster TXP Slot 3 —BLANK or Pre or Booster TXP Slot 4 —BLANK or Pre or Booster TXP Slot 5 —BLANK or Pre or Booster TXP Slot 6 —BLANK or Pre or Booster TXP Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or Pre or Booster TXP Slot 13 —BLANK or Pre or Booster TXP Slot 14 —BLANK or Pre or Booster TXP Slot 15 —BLANK or Pre or Booster TXP Slot 16 —BLANK or Pre or Booster TXP Slot 17 —Booster or TXP	Standalone transponder shelves can be added.

Configuration	Card Placement	Condition
40 channel n-degree ROADM – 40-SMR2-C – Two- colored omnidirectional side	Slot 1 —BLANK Slot 2 —BLANK Slot 3 —40-SMR2-C Slot 4 —40-SMR2-C Slot 5 —BLANK Slot 6 —BLANK Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —BLANK Slot 13 —BLANK Slot 14 —BLANK Slot 15 —BLANK Slot 16 —40-SMR2-C Slot 17 —40-SMR2-C	<ul style="list-style-type: none"> <li>• 40-SMR2-C cards in slot 3 and 4 are connected to passive omnidirectional MUX/DMX.</li> <li>• Optical safety must be disabled on 40-SMR2-C in slot 3 and 4.</li> </ul>
40 channel n-degree ROADM— 40-SMR2-C—Single- colorless omnidirectional side	Slot 1—BLANK Slot 2 and 3 —80-WXC-C Slot 4 and 5 —80-WXC-C Slot 6 —40-SMR2-C Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —OSC-CSM Slot 13 —BLANK Slot 14 —BLANK Slot 15 —40-SMR2-C Slot 16 —40-SMR2-C Slot 17 —40-SMR2-C	<ul style="list-style-type: none"> <li>• Additional shelf with 80-WXC-C cards to extend Add and Drop ports &gt; 9 (to equip L2 MUX and DMX).</li> <li>• 80 WXC are connected to the Line ports of the 40-SMR2 cards in slot 5 as colorless omnidirectional MUX and DMX.</li> <li>• Optical safety of the 40-SMR2 cards in Slot 5 must be disabled.</li> </ul> <p>WXC Role:</p> <ul style="list-style-type: none"> <li>• Slot 2: L1 MUX</li> <li>• Slot 4: L1 DMX</li> </ul>

Configuration	Card Placement	Condition
40 channel 4-degree ROADM – 40-SMR2-C –colorless side	Slot 1 —40-SMR2-C Slot 2 and 3 —80-WXC-C Slot 4 and 5 —80-WXC-C Slot 6 —BLANK Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —Any Other Side Slot 11 —TCC2P Slot 12 —Any Other Side Slot 13 —Any Other Side Slot 14 —Any Other Side Slot 15 —Any Other Side Slot 16 —Any Other Side Slot 17 —Any Other Side	80 WXC are connected to the Add/Drop port of the 40-SMR2 card in slot 1 as colorless MUX and DMX. WXC Role: <ul style="list-style-type: none"> <li>• Slot 1: MUX</li> <li>• Slot 3: DMX</li> </ul>
40 channel n-degree ROADM — 40-SMR2-C – two- colorless omnidirectional side chassis	Slot 1 —BLANK Slot 2 and 3 —80-WXC-C Slot 4 and 5 —80-WXC-C Slot 6 —40-SMR2-C Slot 7 —TCC2P Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2P Slot 12 —40-SMR2-C Slot 13 and 14 —80-WXC-C Slot 15 and 16 —80-WXC-C Slot 17 —BLANK	WXC Role: <ul style="list-style-type: none"> <li>• Slot 2,15: L1 MUX</li> <li>• Slot 3,13: L1 DMX</li> </ul>

Configuration	Card Placement	Condition
40 channel ROADM/HUB with OPT-RAMP-C – 40-SMR2-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —40-SMR2-C Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —40-SMR2-C Slot 16 and 17 —OPT-RAMP-C	<ul style="list-style-type: none"> <li>• MS-ISC may or may not be present.</li> <li>• Without 15216MD (MD-40-ODD), this layout becomes a gain equalizer.</li> </ul>

Configuration	Card Placement	Condition
40 channel 4-degree ROADM with OPT-RAMP-C – 40-SMR2-C	Slot 1 and 2 —OPT-RAMP-C Slot 3 —40-SMR2-C Slot 4 —BLANK Slot 5 —BLANK Slot 6 —MS-ISC Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —MS-ISC Slot 13 —BLANK Slot 14 —BLANK Slot 15 —40-SMR2-C Slot 16 and 17 —OPT-RAMP-C	NC shelf. Nodes not containing: <ul style="list-style-type: none"> <li>• pre and booster units.</li> <li>• MUX/DMX units.</li> </ul>
	Slot 1 and 2 —OPT-RAMP-C Slot 3 —40-SMR2-C Slot 4 —BLANK Slot 5 —BLANK Slot 6 —BLANK Slot 7 —TCC2 Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2 Slot 12 —BLANK Slot 13 —BLANK Slot 14 —BLANK Slot 15 —40-SMR2-C Slot 16 and 17 —OPT-RAMP-C	Subtended shelf. Nodes not containing: <ul style="list-style-type: none"> <li>• pre and booster units.</li> <li>• MUX/DMX units.</li> </ul>



Configuration	Card Placement	Condition
40 channel n-degree ROADM — 40-SMR2-C – 2 Colored omnidirectional side with OPT-RAMP-C or OPT-RAMP-CE	Slot 1 —BLANK Slot 2 —BLANK Slot 3 —40-SMR2-C Slot 4 —40-SMR2-C Slot 5 —BLANK Slot 6 —BLANK Slot 7 —TCC2P Slot 8 —OSCM Slot 9 —AIC-I Slot 10 —OSCM Slot 11 —TCC2P Slot 12 —40-SMR2-C Slot 13 and 14 —OPT-RAMP-C Slot 15 —40-SMR2-C Slot 16 and 17 —OPT-RAMP-C	<ul style="list-style-type: none"> <li>• 40-SMR2-C in slot 3 and 4 are connected to passive omnidirectional MUX/DMX.</li> <li>• Optical safety must be disabled on 40-SMR2-C card in slot 3 and 4.</li> </ul>
40 channel–Passive Mux/Demux terminal site	Slot 1 —Booster Slot 2 —BLANK or Pre or TXP Slot 3 —BLANK or TXP Slot 4 —BLANK or TXP Slot 5 —BLANK or TXP Slot 6 —BLANK or TXP Slot 7 —TCC2 Slot 8 —BLANK Slot 9 —AIC-I Slot 10 —BLANK Slot 11 —TCC2 Slot 12 —BLANK or TXP Slot 13 —BLANK or TXP Slot 14 —BLANK or TXP Slot 15 —BLANK or TXP Slot 16 —BLANK or TXP Slot 17 —BLANK or TXP	Standalone transponder shelves can be added.

## OSMINE Layout Rules for Software Release 9.2.1 and 9.6.0.x

The following table lists the OSMINE layout rules for various configurations and their card placements for Software Release 9.2.1 and 9.6.0.x.

**Table 2: OSMINE Layout Rules for Software Release 9.2.1 and 9.6.0.x**

Configuration	Card Placement	Condition
Line Site (M6)	With two amplifiers per side Slot 8 —TNC Slot 7 —Booster (B) Slot 6 —Pre (B) Slot 5 —BLANK Slot 4 —BLANK Slot 3 —Pre (A) Slot 2 —Booster (A) Slot 1 —TNC	Two sides accommodated in one chassis are placed in the order shown.
	With one amplifier per side Slot 8 —TNC Slot 7 —Amp-C (B) Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —Amp-C (A) Slot 1 —TNC	

Configuration	Card Placement	Condition
Transponder shelf (M6)	Slot 8 —TSC Slot 7 —TXP Slot 6 —TXP Slot 5 —TXP Slot 4 —TXP Slot 3 —TXP Slot 2 —TXP Slot 1 —TSC	TXP and MXP cards do not have any forcing based on direction or slot placement. Therefore, it follows the same rules as optimized configurations (non OSMINE configurations).
	Slot 8 —TSC Slot 6 and 7 —TXP Slot 4 and 5 —TXP Slot 3 and 2 —TXP Slot 1 —TSC	

Configuration	Card Placement	Condition
40 channel ROADM/HUB — 40-SMR1-C - M6		40-SMR1-C card configuration in a two-degree 40 channel ROADM/HUB with or without booster units.

Configuration	Card Placement	Condition
	40 channel ROADM/HUB – 40-SMR1-C – M6 Shelf 1—Option A Slot 8 —TNC Slot 7 —Booster (B) Slot 6 —40-SMR1-C Slot 5 —BLANK Slot 4 —BLANK Slot 3 —40-SMR1-C Slot 2 —Booster (A) Slot 1 —TNC Shelf 1—Option B Slot 8 —TNC Slot 7 —40-SMR1-C Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR1-C Slot 1 —TNC Shelf 1—Option C Slot 8 —TNC Slot 7 —Booster (B) Slot 6 —40-SMR1-C Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR1-C Slot 1 —TNC Shelf 1—Option D Slot 8 —TNC Slot 7 —40-SMR2-C Slot 6 —BLANK Slot 5 —BLANK	

Configuration	Card Placement	Condition
	Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR2-C Slot 1 —TNC	
40 channel ROADM/HUB — 40-SMR2-C - M6	40 channel Terminal Site – 40-SMR2-C – M6 Shelf 1—Option A Slot 8 —TNC Slot 7 —BLANK Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —40-SMR1-C Slot 2 —Booster (A) Slot 1 —TNC	40-SMR2-C card configuration in a two-degree 40 channel ROADM/HUB with or without booster units.
	Shelf 1—Option B Slot 8 —TNC Slot 7 —BLANK Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR1-C Slot 1 —TNC	
	Shelf 1—Option C Slot 8 —TNC Slot 7 —BLANK Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR2-C Slot 1 —TNC	

Configuration	Card Placement	Condition
40 channel ROADM/HUB — 40-SMR1-C - M6	40 channel Gain Equalizer – 40-SMR1-C (M6)  Option A Slot 8 —TNC Slot 7 —Booster (B) Slot 6 —40-SMR1-C Slot 5 —BLANK Slot 4 —BLANK Slot 3 —40-SMR1-C Slot 2 —Booster (A) Slot 1 —TNC	40-SMR1-C card configuration in a two-degree 40 channel ROADM/HUB with or without booster units.
	Option B Slot 8 —TNC Slot 7 —40-SMR1-C Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR1-C Slot 1 —TNC	
	Option C Slot 8 —TNC Slot 7 —40-SMR2-C Slot 6 —BLANK Slot 5 —BLANK Slot 4 —BLANK Slot 3 —BLANK Slot 2 —40-SMR2-C Slot 1 —TNC	

Configuration	Card Placement	Condition
Omnidirectional side	40 channel n-degree ROADM—omnidirectional side Slot 8 —TNCSlot 7 —40-DMX-CSlot 6 —40-MUX-CSlot 5 —PreSlot 4 —PreSlot 3 and 2 —40-WXC-CSlot 1 —TNC	XC card are placed first. All other cards are placed in the default order.

## OSMINE Layout Rules for Software Release 9.6.0.x

The following table lists the OSMINE layout rules for various configurations and their card placements for Software Release 9.6.0.x.

**Table 3: OSMINE Layout Rules for Software Release 9.6.0.x**

Configuration	Card Placement	Condition
80 channel n degree R-OADM with Chianti	n-degree 80 channel ROADM – Optical shelf (M6) Slot 8 —TNCSlot 7 —BLANKSlot 6 —BLANKSlot 5 and 4 —80-WXC-CSlot 3 —PreSlot 2 —BoosterSlot 1 —TNC	One side per shelf.
80 channel n degree R-OADM	80 channel 8-degree ROADM (Maximum 50 shelves) Slot 8 —TNCSlot 7 —BLANKSlot 6 —BLANKSlot 5 and 4 —80-WXC-CSlot 3 —PreSlot 2 —BoosterSlot 1 —TNC	Optical shelves—M6 only. Client shelves—M6 and M12.



Configuration	Card Placement	Condition
80 or 40 channel if two sides can fit in the same shelf	Interconnecting 80- channel and 40- channel networks 40-WXC-C and 80-WXC-C Interconnecting Degrees (M6 shelf only) 80 channel 8-degree ROADM (Maximum 50 shelves) Shelf M6 Slot 8 —TNC or TSCSlot 7 —BoosterSlot 6 and 5 —40-WXC-Cslot 4 and 3 —40-WXC-Cslot 2 —BoosterSlot 1 —TNC or TSC	Two sides are managed in the same shelf.
	Shelf M6 Slot 8 —TNC or TSCSlot 7 —BoosterSlot 6 and 5 —80-WXC-Cslot 4 and 3 —80-WXC-Cslot 2 —BoosterSlot 1 —TNC or TSC Slot 5,6, and 7—Optional two degree in the same shelf.	

