

Transmission Site Design Documentation

Fiber Link Hub RTN MD7030



Phase: 1

Telenor Myanmar

IBS Telenor

Ericsson's GSM System

Radio TRM OptiX RTN950

ERICSSON 			
CAPTION LIST		Document List	1
Document No. 001 53-IPA 166 0087 Uen			
Date 2018-10-18	Rev. A		
 Telenor Myanmar MD7030 Mandalay Radio TRM OptiX RTN950 MD7030 - FIBER LINK		Site Documents	2
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		Others	10

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege		001 51-IPA 166 0087 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D/ Manoj Kumar A		2018-10-18	A	MD7030 Telenor_A

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950
MD7030 - FIBER LINK

	<u>Document name</u>	<u>Document number</u>	<u>Rev.</u>
	SITE	001 53-IPA 166 0087 Uen	A
	INSTALLATION DOCUMENT		
1	DOCUMENT LIST	001 51-IPA 166 0087 Uen	A
2	SITE DOCUMENTS		
2.1	Configuration Data TRM	2/127 04-IPA 166 0087 Uen	A
2.2	Situating Plan	153 38-IPA 166 0087 Uen	A
2.3	Site Layout Information	153 12-IPA 166 0087 Uen	A
2.4	Cable way Drawing	193 24-IPA 166 0087 Uen	A
3	PLANT SPECIFICATION		
3.1	Plant Specification (TRM)	2/127 11-IPA 166 0087 Uen	A
4	CABLING DIAGRAM		
4.2	Cabling Diagram (signal and antenna)	2/193 18-IPA 166 0087 Uen	A
4.3	Block Diagram (TRM Cross Connect)	3/193 18-IPA 166 0087 Uen	A
4.4	Allocation Drawing (TRM Rack-Layout)	4/193 18-IPA 166 0087 Uen	A
5	EXTERNAL ALARM		
5.1	Allocation Table	Refer to RBS - SID Site Folder	
6	CHECK LISTS		
6.1	Installation Check List	153 11-IPA 166 0087 Uen	A
6.2	OHS Check List	176 27-IPA 166 0087 Uen	A
7	TEST DOCUMENTS		
7.1	Test Report (RTN950 Functional)	3/153 83-IPA 166 0087 Uen	A
8	ACCEPTANCE CERTIFICATE	179 61-IPA 166 0087 Uen	A
9	PRODUCT LIST		
9.1	Product List (TRM)	2/153 83-IPA 166 0087 Uen	A
10	OTHERS		
10.1	Site Photos		A
10.2	SMR		A
10.3	Link Budget		

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EMZ Jovito Ege		2/127 04-IPA 166 0087 Uen		
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ETV Minh Nguyen D/ Manoj Kumar A		2018-10-18	A	MD7030 Telenor_A

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950
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1 GENERAL

- | | | |
|-----|------------------------------|------------------------------------|
| 1.1 | Geographical coordinates | N 21° 58' 15.67" - E 96° 5' 14.41" |
| 1.2 | Region | Mandalay |
| 1.3 | Address | Mandalay |
| | | Mandalay |
| 1.4 | Type of Site | IBS |
| 1.5 | Tower Height | 0 m |
| 1.6 | Transmission connection type | GE (Electrical) |

2 POWER CONSUMPTION

- | | | |
|-----|--|------|
| 2.1 | Total power consumption (W)
(Power for IDU) | 250w |
|-----|--|------|

NOTE: REFER TO ATTACHED IPRAN AT LAST SHEETS

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EMZ Jovito Ege		153 38-IPA 166 0087 Uen		
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Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950

Geographical coordinates
Address

N 21° 58' 15.67" - E 96° 5' 14.41"
Mandalay

LINK ID: MD7030 FIBER LINK



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Project: **Telenor Myanmar**
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Radio TRM OptiX RTN950
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Item	Description	Item Code	Quantity
1	INDOOR UNIT OPTIX RTN 950(V100R006)		
	RTN 950 Assembly Chassis(-48V)	02113174	1 Unit
	RTN950 IDU Required Delivery Accessory, Installation Material (Without Power C	02239644	1 PC
	TDM/Hybrid/Packet/Routing system control and Cross-connect Board	03055091	2 PCS
	Power Cable,3m,4mm^2	04150466	1 PC
	2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	03021MXJ	1 PC
	2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	03021MXJ	1 PC
	Fixed Optical Attenuator,1260nm~1620nm-5dB-LC/PC-45dB	45030021	2 PCS
	Optical transceiver,eSFP,1310nm,1.25Gb/s,-9~-3dBm,-20dBm,LC,Single Mode,1	34060473	2 PCS
	Patch cord-FC/PC-LC/PC-Single mode-G.652D-2mm-10m-PVC-Yellow	14130197	4 PCS
2	ODF-GPX147-GRP-12A 19'&ETSI installation		
	Splicing & termination module-12 cores-Contain 12 cores splicing & termination tr	02080894	1 PC
	Optical adapter-FC/PC-FC/PC-Silvery white-Shell: Metal-Sleeve:Zirconia-Square	14130073	12 PCS
3	Cabinet		

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		File	
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Project: Telenor Myanmar Radio TRM OptiX RTN950
Site: MD7030

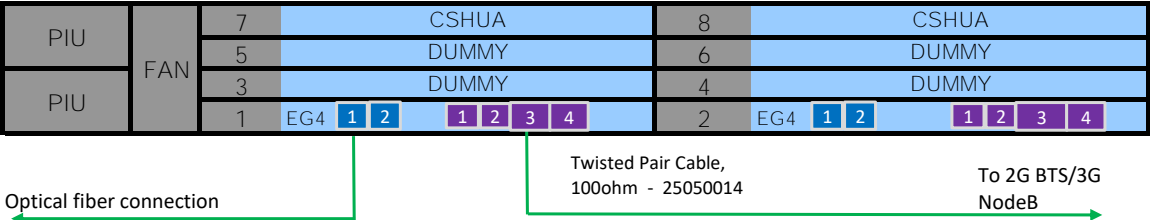
A. Radio TRM OptiX RTN950 LAYOUT

SITE A (NE) MD7030 CONFIGURATION: 1 x L3

Scenario4: Last Mile MW site
Cabling Rule : 1.Configure 1*EG4 per IDU ; 2.3rd port connect to RAN ; 3.IF board installed slot priority:Slot 5 , Slot 3 , Slot 6 , Slot 4

- GE Fiber
- GE Copper

RTN950n:IDU 1 -L3 CS601



NOTE: Please indicate existing site directions & cabling as per actual site installation.

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		File	
		MD7030 Telenor_A	

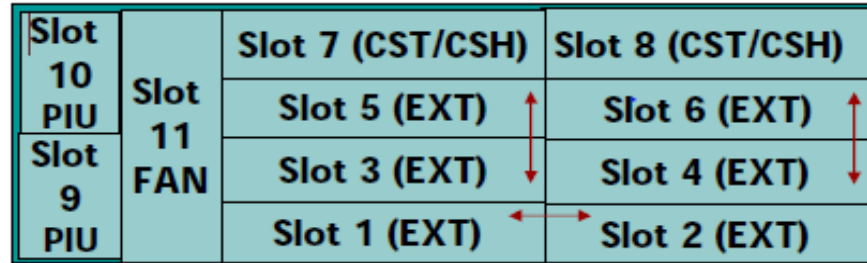
Project: Telenor Myanmar
Site: MD7030

Radio TRM OptiX RTN950

A. Radio TRM OptiX RTN950 LAYOUT

SITE A (NE) MD7030 CONFIGURATION: 1 x L3

SITE A (NE) HuB RTN950



SITE B (Fiber Link)

Hub CX600

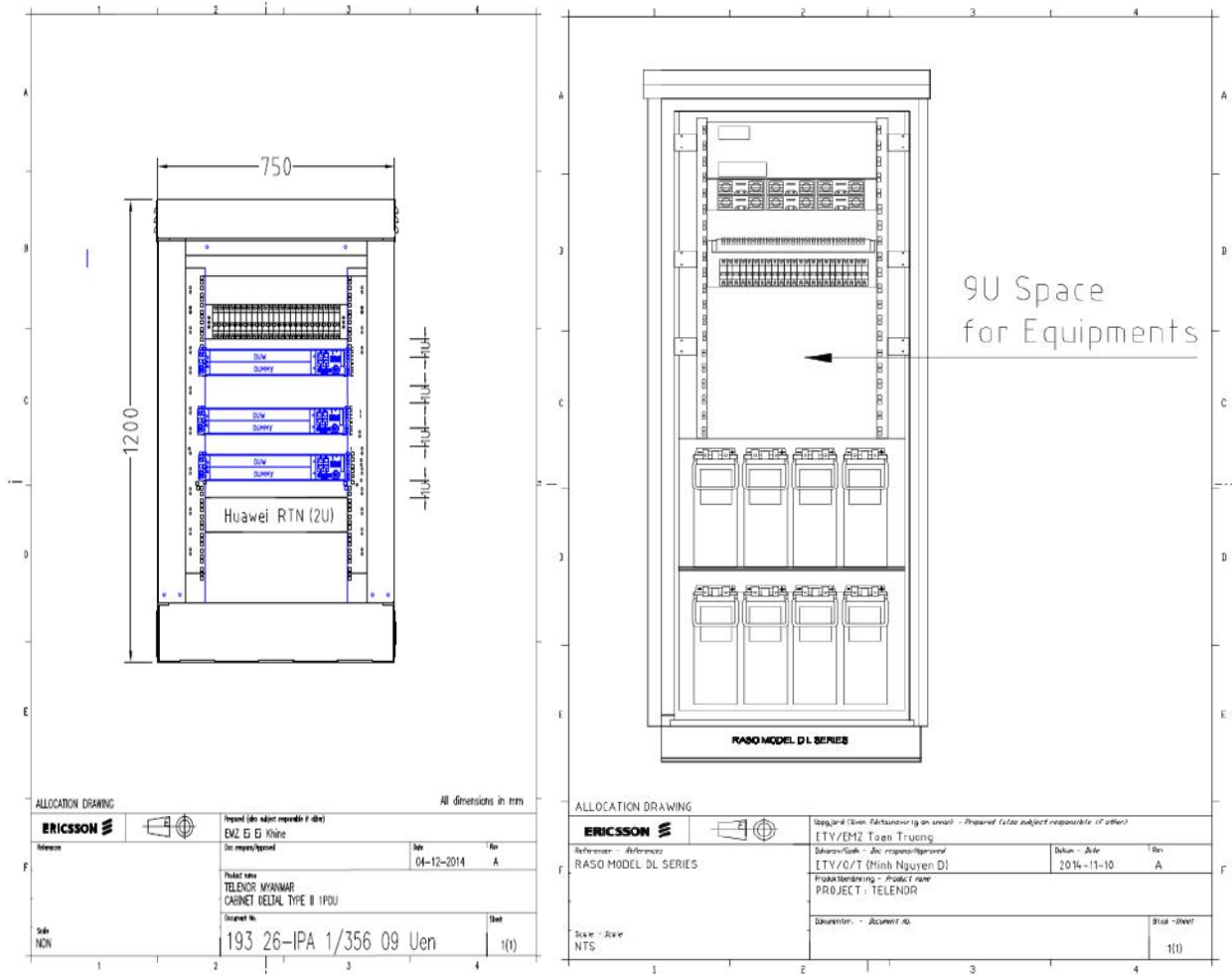
Note: Please paste the photo of which equipment interface with. ie. Hub CX600 or Hub ATN950B

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EMZ Jovito Ege		4/193 18-IPA 166 0087 Uen		
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Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950

A. RACK LAYOUT



*Please update on site configuration in actual. RTN and RBS did we used and reflect on final SDD.

Prepared (also subject responsible if other) EMZ Jovito Ege		Document No. 153 11-IPA 166 0087 Uen		
Doc respons/Approved ETV Minh Nguyen D/ Manoj Kumar A	Checked	Date 2018-10-18	Rev. A	File MD7030 Telenor_A

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950
MD7030 - FIBER LINK

INSTALLATION CHECK LIST

OK = Correctly installed, NOK = Not Correctly installed, N/A = Not applicable

A. TRM EQUIPMENT	OK	NOK	N/A	COMMENTS
1. Equipment clean and undamaged	✓			
2. Installed according to allocation drawing	✓			
3. Power cable connected to correct fuse	✓			
4. All cables in the front properly connected	✓			
5. All screws tightened to correct torque	✓			
6. Equipment labeled according to SID	✓			
7. Grounded, washers in place and bolts tightened	✓			
8. Grounding cable insulation undamaged	✓			
9. ODF installed according to allocation drawing	✓			

B. TRM & ALRM CABLE	OK	NOK	N/A	COMMENTS
1. Electrical transmission cables connected	✓			
2. Electrical transmission cables labeled	✓			
3. Minimum bending radius followed for optical	✓			

D. CONCLUDING ROUTINES	OK	NOK	N/A	COMMENTS
1. SID marked for as-built	✓			
2. Labeling of the external cables	✓			
3 Site area cleaned	✓			

All installation activities have been completed [**NO**] [**YES**] (if no, specify below)

Problems/Comments (Refer to applicable activity numbers)

Responsible Engineer (Ericsson)

Name

Signature

Date

Accepted by (Telenor)

Name

Signature

Date

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EMZ Jovito Ege		176 27-IPA 166 0087 Uen		
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Project: **Telenor Myanmar**
 Site: **MD7030**

Radio TRM OptiX RTN950

MANPOWER	NOS.
1 Site Supervisor	1
2 Team Leader	1
3 Technician	1
4 Laborers	3
5 Others	

EQUIPMENT USED	NOS.
1 Rope	1
2 Pulley	1
3 GPS	1
4 Tool Kits	1
5 Laptop	1
6	

EQUIPMENT USED	NOS.
7	
8	
9	
10	
11	
12	

WORK ACTIVITIES:

Health & Safety Observation/Check list	OK	NOK	N/A	Comments
1 Safety Shoe	✓			
2 Safety Gloves	✓			
3 Safety Helmets	✓			
4 Safety Belts	✓			
5 Arrangement for Emergency Evacuation	✓			
6 Arrangement for Emergency Communication	✓			
7 Arrangement for First Aid	✓			
8 Arrangement for Toilets / Washing		✓		
9 Site Safety Protection		✓		
10 Security Guard at site	✓			

OTHER MATTERS / ISSUES:

OHS confirmed by (ASP):
 Print Name: _____
 Signature: _____
 Date: _____

Checked and Verified by: Ericsson Myanmar Co. Ltd.
 Print Name: _____
 Signature: _____
 Date: _____

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EMZ Jovito Ege		3/153 83-IPA 166 0087 Uen	
Doc respons/Approved	Checked	Date	Rev.
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Project: **Telenor Myanmar**
 Site: **MD7030**

Radio TRM OptiX RTN950
MD7030 - FIBER LINK

NETWORK ADDRESSES (DCN)

		Address	OSPF Area
Agent IP Address			
Ethernet	IP Address		
	IP Net Mask		
Default gateway			
Interface			

Port	Setup				VLAN ID
Lan1	<input type="checkbox"/> Disable	<input type="checkbox"/> In Band			
Lan2	<input type="checkbox"/> Local Access Only	<input type="checkbox"/> In Band	<input type="checkbox"/> Out of Band	<input type="checkbox"/> Drop Node	

COMMISSIONING CHECKS

- 1 Configurations in compliance with the Link documentation
 - 1.1 Synchronization ☒ Enabled ☐ Disabled
- 2 Radio parameters

2.1 Set TX and RX frequencies	
2.2 RF channel number	
2.3 TX Power set by webLct	
- 3 ATPC

☐ Manual ☐ Automatic (ATPC) Range (dB)

 - 3.1 TX Power
 - 3.2 ATPC PRX threshold High Low
- 4 Modulation / Bandwidth and ACM
 - 4.1 Reference Modulation
 - 4.2 Reference RF Bandwidth
 - 4.3 ACM engine ☒ Enabled ☐ Disabled
 - 4.4 TX power ramp up to ☒ Enabled ☐ Disabled
 - 4.5 Upper Modulation
 - 4.6 Lower Modulation
 - 4.7 ACM Table

<input type="checkbox"/> 4QAM-st	<input type="checkbox"/> 4QAM
<input type="checkbox"/> 16QAM-st	<input type="checkbox"/> 16QAM
<input type="checkbox"/> 32QAM	<input type="checkbox"/> 64QAM
<input type="checkbox"/> 128QAM	<input type="checkbox"/> 256QAM
<input type="checkbox"/> 512QAM	<input type="checkbox"/> 1024AM

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EMZ Jovito Ege		3/153 83-IPA 166 0087 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D/ Manoj Kumar A		2018-10-18	A	MD7030 Telenor_A

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950
MD7030 - FIBER LINK

5 Received signal level

5.1	RSL in reference mod. ⁽¹⁾	
5.2	RSL in max. mod. ⁽¹⁾	

⁽¹⁾ Checked by WebLCT indication

6 RX quality Link

6.1	Maximum Modulation with ACM ⁽³⁾	
6.2	S/N max. Mod. in ACM RX ⁽²⁾⁽³⁾	

⁽²⁾ In case of ACM enabled, indicate S/N measure related to the upper modulation scheme

in compliance with the project report.

⁽³⁾ Checked by WebLCT indication, in compliance with the project report

7 Web LCT Measurements Resolution = 3dB

☒ OK

☐ NOK

8 Set Active manual operation timeout = 2 s

☒ OK

☐ NOK

Remarks: _____

Responsible Engineer (Ericsson)

Name	Signature	Date
------	-----------	------

Accepted by (Telenor)

Name	Signature	Date
------	-----------	------

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EMZ Jovito Ege / G. Dela Cruz		2/153 83-IPA 166 0087 Uen	
Doc respons/Approved	Checked	Date	Rev.
ETV Minh Nguyen D/ Manoj Kumar A		2018-10-18	A
		File	
		MD7030 Telenor_A	

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950
MD7030 - FIBER LINK

<u>UNIT</u>	<u>PRODUCT CODE</u>	<u>REV</u>	<u>SERIAL No.</u>	<u>MFG.DATE</u>
TRANSMISSION EQUIPMENT				
RTN 950(V100R006)				
RTN 950 Assembly Chassis(-48V)	2113174		2102113174P0G6000187	
RTN 950 FAN UNIT	TND1FAN06		030LKHP0G6000208	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNG6026728	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNG6026730	
Slot 1 - EG4	03021MXJ		021MXJCNG1001339	
Slot 2 - EG4	03021MXJ		021MXJCNG6003828	
Slot 7 - CSHU 1	03055091		210305509110G6000656	
Slot 8 - CSHU 2	03055091		210305509110G6000654	
ODF				
Splicing & termination module-12 cores- Contain 12 cores splicing & termination tray 1 pcs-1U*483*260mm-Purple grey-Steel sheet- 19"&ETSI installation-GPX147-GRP-12A	02080894		21020808943DHC001065	

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ETV Minh Nguyen D/ Manoj Kumar A		2018-10-18	A	MD7030 Telenor_A

Project: **Telenor Myanmar**
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Radio TRM OptiX RTN950
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1) RTN Chassis



2) TRM Rack Layout

Cabinet (Open)



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		File	
		MD7030 Telenor_A	

Project: **Telenor Myanmar**
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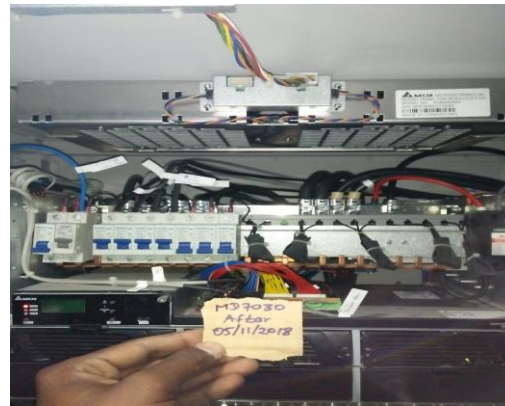
Radio TRM OptiX RTN950
MD7030 - FIBER LINK

ODF



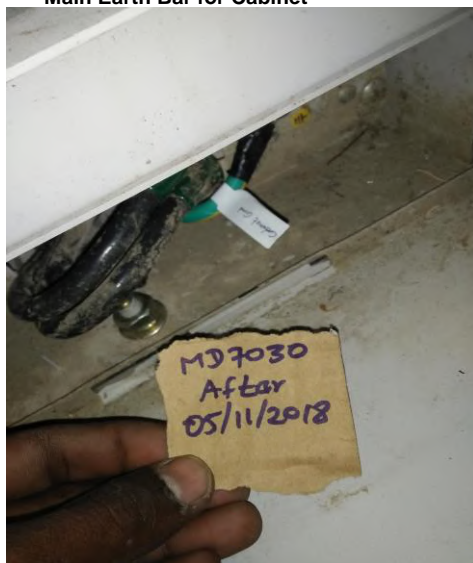
Grounding Cable

Power Cable



Main Earth Bar for Cabinet

Earth Bar Cabinet



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Doc respons/Approved ETV Minh Nguyen D/ Manoj Kumar A	Checked	Date 2018-10-18	Rev. A	File MD7030 Telenor_A

Project: **Telenor Myanmar**
Site: **MD7030**

Radio TRM OptiX RTN950

NETWORK ELEMENT ACCEPTANCE CERTIFICATE

This is to certify that Ericsson Radio Systems AB has delivered, installed and tested the Network Elements on site **MD7030** as defined in PO_NS_0000XX and PO_NS_0000XX

PO RBS: PO_NS_0000XX
PO TRM: PO_NS_0000XX
PO Antenna:

The Network element acceptance has been performed in accordance with the procedures described in above mentioned contract. Further reference should be made to the acceptance documents. The Network element passed the acceptance with remarks per attached test report.

TEST DOCUMENTS
Test Report (OptiX RTN950 Functional)

Documents Number
3/153 83-IPA 166 0087 Uen rev A

Date:

for

for

Telenor
(The Buyer)

Ericsson Myanmar
(The Vendor)

Name:

Title:

Name:

Title:



SITE MATERIAL REQUEST (SMR)



Proposed: EMZ Ye Sit Naing	Project Manager: Manoj Kumar A/Gautam Goel	Requester Name: Gautam Goel/Tin Hnin Pwint Phyu	Request Date: October 17, 2018	Rev: A				
Customer reference no./Main Project TELENOR MYANMAR	SMR ID:	Requester Tel: +91 8802314466	Site ID (Candidate): MD7030	Facing Sites				
Delivery date:	ASP Contact person:	ASP Telephone no.:	Site Type: IBS	Region:	Mandalay			
Site Address: -				P/L No.:				
Remarks: SMR is based on IPRAN_North_BOQ_20181017, released by Ms. Tin Hnin Pwint Phyu(TND). 1RTN,EG4-2Pcs,eSFP1G(10km)-2pcs, LC-FC-4pcs,Atten(5dB)-2Pcs,ODF1x12Cores only.								
No.	Model PO	Part Number/ Product Code (WH)	Package No.	PO No.	DESCRIPTION	QTY	UOM	Remarks
RTN950 (V100R006) FOR SITE MD7030						RTN950/IDU Solution 10M		
	SL9K2URACK01	RTN950_10M			RTN950/IDU Solution 10M	1	PC	RTN950 Materials
	SL91EG4	03021MXJ	LOOSE PICKING		2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	1	PC	Additional EG4 card
RTN950 (V100R006) FOR SITE MD7030						Optical transceiver,eSFP		
	eSFP-1310nm-1000Base-Lx SM	34060473	LOOSE PICKING		Optical transceiver,eSFP,1310nm,1.25Gb/s,-9~-3dBm,-20dBm,LC,Single Mode,10km	2	PCS	for MD7030_CSG01H
RTN950 (Optical Patch cord) FOR SITE MD7030						OPTICAL PATCHCORD & Fixed Optical Attenuator		
	SS-OP-LC-FC-S-10	14130197	LOOSE PICKING		Patch cord-FC/PC-LC/PC-Single mode-G.652D-2mm-10m-PVC-Yellow	4	PCS	for MD7030_CSG01H
	SS-OP-ATN-LC-5	45030021	LOOSE PICKING		Fixed Optical Attenuator,1260nm~1620nm-5dB-LC/PC-45dB	2	Pcs	Attenuator(5dB)
RTN950 (19 Inches & ETSI installation) FOR SITE MD7030						Huawei ODF-12 cores		
2	GPX147-GRP-12A	02080894	LOOSE PICKING		Splicing & termination module-12 cores-Contain 12 cores splicing & termination tray 1 pcs-1U*483*260mm-Purple grey-Steel sheet-19" & ETSI installation-GPX147-GRP-12A	1	PC	1xODF (12 cores)
	Optical adapter-FC/PC-FC/PC	14130073	LOOSE PICKING		Optical adapter-FC/PC-FC/PC-Silvery white-Shell: Metal-Sleeve: Zirconia-Square	12	Pcs	12 Optical adapter-FC-FC
Warehouse Signature				Receiver signature		Trucker signature		
Date/Time				Date/Time		Date/Time		