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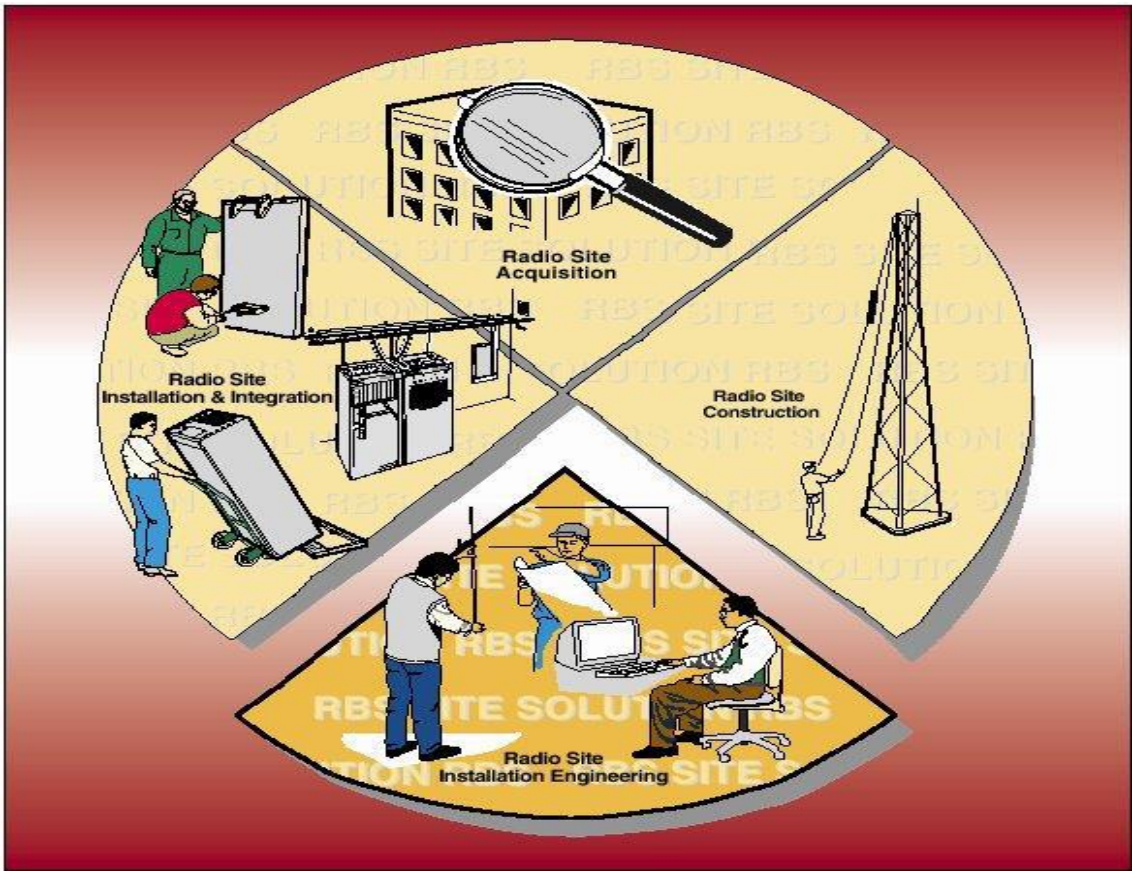
telenor



Transmission Site Design Documentation

NE: KA1231 **FE:** KA1230

Phase: 1

Telenor Myanmar

Ericsson's GSM System

Radio TRM OptiX RTN950

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CAPTION LIST

Document No.
001 53-IPA 166 2047 Uen

Date
2019-03-19

Rev.
A

SITE

INSTALLATION

DOCUMENT

Telenor Myanmar

KA1231

Kayin

Radio TRM OptiX RTN950

KA1231 - KA1230

ATTENTION
This documentation must be updated on site. All the documents must be corrected, where changes have occurred, and signed by the Installation Supervisor.

This documentation must then be returned to Installation Engineering for hand-over to Customer.

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DOCUMENT LIST

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		001 51-IPA 166 2047 Uen		
Doc respons/Approved	**Checked**	**Date**	**Rev.**	**File**
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

	Document name	Document number	Rev.
	SITE INSTALLATION DOCUMENT	001 53-IPA 166 2047 Uen	A
1	**DOCUMENT LIST**	001 51-IPA 166 2047 Uen	A
2	**SITE DOCUMENTS**		
2.1	Configuration Data TRM	2/127 04-IPA 166 2047 Uen	A
2.2	Situating Plan	153 38-IPA 166 2047 Uen	A
3	**PLANT SPECIFICATION**		
3.1	Plant Specification (TRM)	2/127 11-IPA 166 2047 Uen	A
4	**CABLING DIAGRAM**		
4.1	Cabling Diagram (signal and antenna)	2/193 18-IPA 166 2047 Uen	A
4.2	Block Diagram (TRM Cross Connect)	3/193 18-IPA 166 2047 Uen	A
4.3	Allocation Drawing (TRM Rack-Layout)	4/193 18-IPA 166 2047 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 2047 Uen	A
6.2	OHS Check List	176 27-IPA 166 2047 Uen	A
7	**TEST DOCUMENTS**		
7.1	Test Report (RTN950 Functional)	3/153 83-IPA 166 2047 Uen	A
8	**ACCEPTANCE CERTIFICATE**	179 61-IPA 166 2047 Uen	A
9	**PRODUCT LIST**		
9.1	Product List (TRM)	2/153 83-IPA 166 2047 Uen	A
10	**OTHERS**		
10.1	Site Photos		
10.2	SMR		
10.3	Link Budget		

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		2/127 04-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

1 GENERAL

1.1	Geographical coordinates	N 15º 56' 7.79" - E 98º 12' 31.7"
1.2	Region	Kayin
1.3	Address	Kasat Village, Kasat Village Gp, Kyarinnseikkyi
1.4	Type of Site	Green Field
1.5	Tower Height	55 m
1.6	Transmission connection type	GE (Electrical)

NOTE: REFER TO ATTACHED IPRAN AND LINK BUDGET AT SECOND TO LAST SHEETS

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SITUATING PLAN 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		153 38-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

Geographical coordinates N 15º 56' 7.79" - E 98º 12' 31.7"

Address Kasat Village, Kasat Village Gp, Kyarinnseikkyi
Myanmar

LINK ID: KA1231 - KA1230

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PLANT SPECIFICATION (TRM) 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		2/127 11-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

Item	Description	Item Code	Quantity	
1	**ANTENNA EQUIPMENT (Antenna with accessories)**			
	1.2m 13GHz HP,Dual Polarization Antenna	52431379	2	sets
2	**RADIO EQUIPMENT (ODU)**			
	ODU (13G_2+0_D_1.2m)			
	ODU,RTN XMC,13G,-2,266MHz SB B=L H ,12863MHz,12982MHz,without doc,WR-75,H01	52413096	2	Units
	ODU,RTN XMC,13G,-2,266MHz,SB B,H H ,13129MHz,13248MHz,without doc,WR-75,H01	52413097	2	Units
3	**OUTDOOR INSTALLATION**			
	IF/ODU Installation Accessories(5D)	02230CJP	4	PCS
	RTN 600 IFX Board Delivery Accessories	02238083	4	PCS
	Coaxial Cable ,Copper-clad Aluminium Wire,50ohm,7.6mm,4.8mm,1.8mm,Black,5D	25070149	**260**	m
4	**INDOOR UNIT OPTIX RTN 950(V100R006)**			
	Versatile Dual IF Board	03022VHK	2	PCS
	OPTIX RTN 950 (V100R006)	**NEAR END**		
	RTN 950 Assembly Chassis(-48V)	02113174	1	Unit
	RTN950 IDU Required Delivery Accessory, Installation Material (Without Power Cable)	02239644	1	Unit
	TDM/Hybrid/Packet/Routing system control and Cross-connect Board	03055091	2	PCS
	Power Cable,10m,4mm^2,2*TB2PIN+4*T4^2GY, H07Z-K-4^2BL+H07Z-K-4^2B,LSZH	04150591	1	Unit
	2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	03021MXJ	1	Unit
	OPTIX RTN910A	**NEAR END**		
	RTN 910A Basal Configuration 2*GE(RJ45)+2*GE(SFP) +16*E1(Native TDM) +2*IF Include IDU Installation Materials	02311FNL	1	Unit
	RTN950 IDU Required Delivery Accessory, Installation Material (Without Power Cable)	..02239644	1	Unit
	RTN 910A System 16*E1(Native TDM) /4*GE(RJ45) /2*GE(SFP) /2*IF 1DU Unit (-48VDC)	..02311FCA	1	Unit
	Power Cable,10m,2*4mm^2, Blue/Black, 2*EPC K-4^2BL +H07Z-K-4^2B,LSZH	..04151432	1	Unit
	Outsourcing cable,CAT6A Network cable, 3m,MP8,CC4P0.48S/FTPB(PANTONE 3005U),MP8	04050612	1	PC

Use only necessary RF Cable length on site.
Please return to warehouse excess coaxial cables.

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CABLING DIAGRAM 1(1)

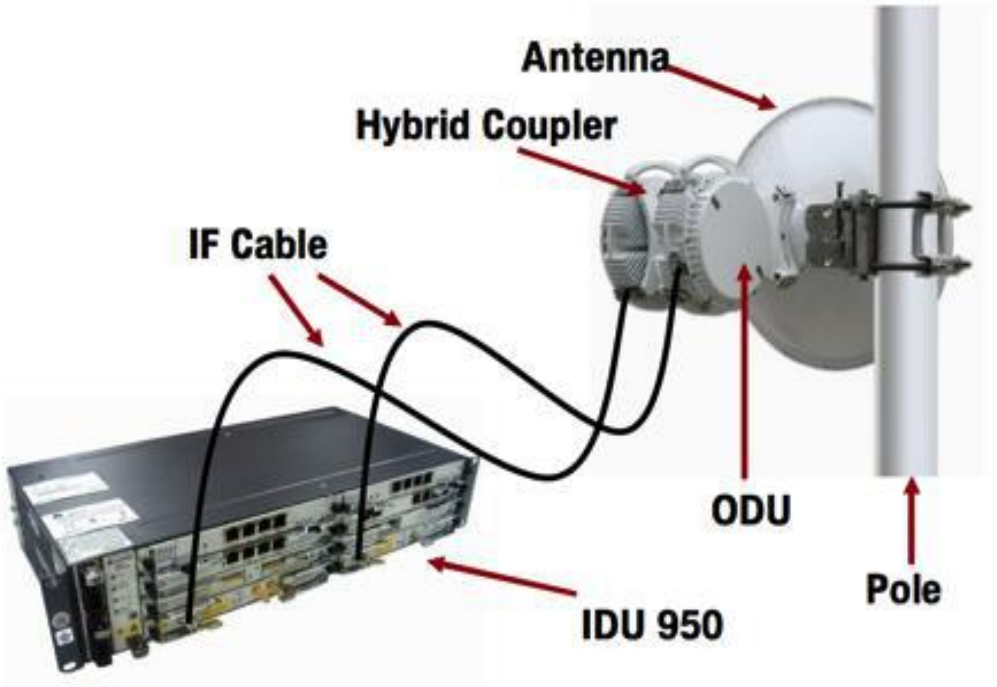
Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		2/193 18-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

2+0 ANTENNA CONFIGURATION

Far-end Direction:	KA1230	
Antenna Size:	1.2	m
Antenna Height (m):	43	m
Azimuth:	117.93	°

Equipment Components



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BLOCK DIAGRAM (TRM CROSS CONNECT)

Prepared (also subject responsible if other)	Document No.		
EMZ Ye Sit naing	3/193 18-IPA 166 2047 Uen		
Doc respons/Approved	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu	2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

A. Radio TRM OptiX RTN950 LAYOUT

SITE A (Near-End) **KA1231** **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 CSG01

PIU	FAN	7	CSHUA	8	CSHUA
		5	DUMMY	6	DUMMY
PIU		3	ISM6 NO1 - FACING KA1230	4	DUMMY
		1	EG4 1 2 1 2 3 4	2	DUMMY

Twisted Pair Cable,
100ohm - 25050014

To 2G BTS/3G
NodeB

OptiX RTN 950 L3 - CSG01

PIU/ 01	FAN	7	CSHUA	8	CSHUA
		5	Facing _____	6	Facing _____
PIU/ 00		3	Facing _____	4	Facing _____
		1	1 2 1 2 3 4	2	1 2 1 2 3 4

NOTE:

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

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BLOCK DIAGRAM (TRM CROSS CONNECT)

Prepared (also subject responsible if other)	Document No.		
EMZ Ye Sit naing	3/193 18-IPA 166 2047 Uen		
Doc respons/Approved	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu	2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

A. Radio TRM OptiX RTN950 LAYOUT

SITE B (Far-End) **KA1230** **CONFIGURATION:** **1 x L3**

RTN950N:IDU 1 -L3 CSG01

PIU	FAN	7	CSHUA	8	CSHUA
		5	DUMMY	6	DUMMY
PIU		3	ISM6 NO1 - FACING KA1231	4	DUMMY
		1	EG4 1 2 1 2 3 4	2	DUMMY

Twisted Pair Cable,
100ohm - 25050014

To 2G BTS/3G
NodeB

NOTE:

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

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ALLOCATION DRAWING (TRM RACK LAYO 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		4/193 18-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

A. RACK LAYOUT

CABLE SPACE
DCDU1 (1U)
DCDU2 (1U)
DCDU3 (1U)
BBU (2U)
EMUA (1U)
RTN950 (L3)
SPARE SPACE (1U)
SPARE SPACE (1U)
SPARE SPACE (1U)
SPARE SPACE (1U)
SPARE SPACE (1U)
SPARE SPACE (1U)

TP48200E

*** Please update on site configuration. How many RTN and RBS Installed in actual.

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Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		153 11-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

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	**OK**			
2. Installed according to allocation drawing	**OK**			
3. Power cable connected to correct fuse	**OK**			
4. All cables in the front properly connected	**OK**			
5. All screws tightened to correct torque	**OK**			
6. Equipment labeled according to SID	**OK**			
7. Grounded, washers in place and bolts tightened	**OK**			
8. Grounding cable insulation undamaged	**OK**			
9. ODF installed according to allocation drawing	**OK**			

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

C. ANTENNA SYSTEM - MW	**OK**	**NOK**	**N/A**	**COMMENTS**
1. Antenna(s) installed in accordance with SID	**OK**			
2. Bearing, Polarization in accordance with SID	**OK**			
3. All screws of antenna support(s) tightened	**OK**			
4. ODU installed correctly	**OK**			
5. Kit for separate installation correctly fitted	**OK**			
6. Power cable properly connected	**OK**			
7. DCN cable checked (if present)	**OK**			
8. Electrical transmission cables connected	**OK**			
9. Grounded, washers in place and bolts tightened	**OK**			

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

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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CHECK LIST (OHS) 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		176 27-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

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

EQUIPMENT USED	NOS.
1	
2	
3	
4	
5	
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	**OK**			
2	Safety Gloves	**OK**			
3	Safety Helmets	**OK**			
4	Safety Belts	**OK**			
5	Arrangement for Emergency Evacuation	**OK**			
6	Arrangement for Emergency Communication	**OK**			
7	Arrangement for First Aid	**OK**			
8	Arrangement for Toilets / Washing				
9	Site Safety Protection	**OK**			
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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TEST REPORT (RTN950 Functional)

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		3/153 83-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

NETWORK ADDRESSES (DCN)

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

Port	Setup	VLAN ID
Lan1	☐ Disable ☐ In Band	
Lan2	☐ Local Access Only ☐ In Band ☐ Out of Band ☐ 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
3.1 TX Power ☐ Manual ☐ Automatic (ATPC) Range (dB) .....
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 ..... QAM
4.6 Lower Modulation ..... QAM
4.7 ACM Table ☐ 4QAM-st ☐ 4QAM ☐ 16QAM-st ☐ 16QAM ☐ 32QAM ☐ 64QAM ☐ 128QAM ☐ 256QAM ☐ 512QAM ☐ 1024AM

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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Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		179 61-IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

NETWORK ELEMENT ACCEPTANCE CERTIFICATE

This is to certify that Ericsson Radio Systems AB has delivered, installed and tested the Network Elements on site **KA1231** as defined in PO_NS_000019 and PO_NS_000019

PO RBS: PO_NS_000019
PO TRM: PO_NS_000019
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	Documents Number
Test Report (OptiX TRN950 Functional)	3/153 83-IPA 166 2047 Uen rev A

Date: .....

for

Telonor
(The Buyer)

Name: .....

Title: .....

for

Ericsson Myanmar
(The Vendor)

Name: .....

Title: .....

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PRODUCT LIST

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		2/153 83-IPA 166 2047 Uen		
Doc respons/Approved	**Checked**	**Date**	**Rev.**	**File**
ETV Minh Nguyen D / Hung Vu		2014-09-18	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231** **KA1231 - KA1230**

UNIT	PRODUCT CODE	REV	SERIAL No.	MFG.DATE
TRANSMISSION EQUIPMENT				
ODU,RTN XMC,**13G**, SB B=L	52413096		215241309610H5000075	
12863MHz,12982MHz			215241309610G1000352	
ODU,RTN XMC,**13G**, SB B=H	52413097		215241309710FB000152	
13129MHz,13248MHz			215241309710H6000087	
ANTENNA				
13G, Microwave Antenna				
1200mm, Dual Pol	52431379		21524313793AG7002101	NEAR-END
			21524313793AG7002093	FAR-END
RTN 950(V100R006)				
NEAR-END RTN				
RTN 950 Assembly Chassis(-48V)	2113174		2102311FCACNHB000503	
RTN 950 FAN UNIT	TND1FAN06		030LKH6THB900083	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNHB004554	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNHB004556	
Slot 1 - EG4	03021MXJ		021MXJCNFA001342	
Slot 2 - ISV3	03021PFK			
Slot 3 - ISM6	03022VHK		022VHK10H8002817	
Slot 4 - ISV3	03021PFK			
Slot 5 - ISV3	03021PFK			
Slot 6 - ISV3	03021PFK			
Slot 7 - CSHU 1	03055091		210305509110FA002554	
Slot 8 - CSHU 2	03055091		210305509110FA002555	
FAR-END RTN				
RTN 910A Basal Configuration 2*GE(RJ45)+	02311FNL			
RTN 910A FAN UNIT	xxxxxxxx			
Slot 1 - CSHR	..02311FCA			
Slot 3 - ISM6	03022VHK		022VHK10HB002604	
Slot 4 - ISM6	03022VHK			

SITE PHOTO

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

NEAR END

Tower View

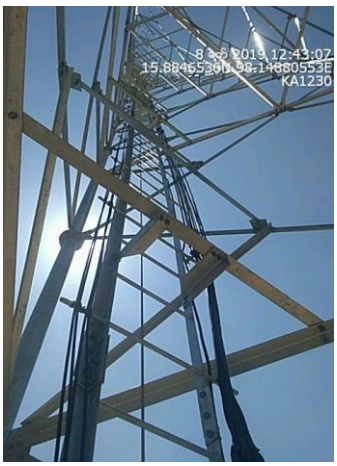
Vertical Cable Ladder

Horizontial Cable Ladder

FAR END

Tower View

Vertical Cable Ladder



Horizontial Cable Ladder

SITE PHOTO

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**

Site: **KA1231**

Antenna

Antenna

Mounting bracket

Mounting bracket

MW Antenna side strut from 0.9 m

MW Antenna side strut from 0.9 m

SITE PHOTO

Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

Label Outdoor

Label Outdoor

Grouding IF Cable at Top

Grouding IF Cable at Bottom

SITE PHOTO

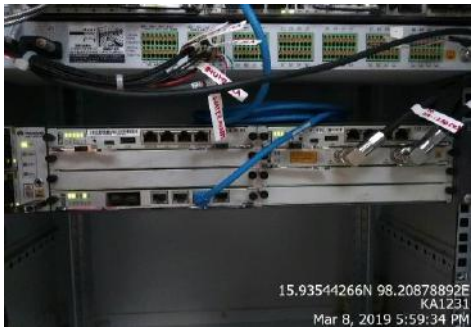
Prepared (also subject responsible if other)		Document No.		
EMZ Ye Sit naing		IPA 166 2047 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
ETV Minh Nguyen D / Hung Vu		2019-03-19	A	KA1231 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KA1231**

Cabinet (Open)

Cabinet (Open)

RTN



RTN

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SITE MATERIAL REQUEST (SMR)

telenor

Proposed:	Project Manager:	Requester Name:	Request Date:	Rev:	A
EMZ Ye Sit Naing	Manoj Kumar	Sajjan Kumar	February 5, 2019	Facing Sites	KA1230
Customer reference no./Main Project: TELENOR MYANMAR	SMR ID:	Requester Tel: 09790302934	Site ID (Candidate): KA1231		
Delivery date:	ASP Name:	ASP Telephone no.:	Site Type: GBT	Region:	Kayin

Site Address: Kasat Village, Kasat Village Gp, Kyarinnseikkyi **P/L No.:**

Remarks: SMR is based on Configuration_Connectivity_South_February_5_V1_12AM, New link.(NOTE: XPIC Accessories are LOM)

No.	Model PO	Part Number/ Product Code (WH)	Package No.	PO No.	DESCRIPTION	QTY	UOM	Remarks
RTN 950(V100R006) FOR NEAR-END SITE KA1231					**IDU Non Hub (L3) RTN950B_10M**			**NE RTN950B**
1	SL9K2URACK01	02113174	LOOSE PICKING		RTN 950 Assembly Chassis(-48V)	1	PC	RTN950 Materials for NEAR-END
	SL9IDU-Accessories	02239644	LOOSE PICKING		RTN950 IDU Required Delivery Accessory, Installation Material (Without Power Cable)	1	PC	RTN950 Materials for NEAR-END
	SL91CSHUA	03055091	LOOSE PICKING		TDM/Hybrid/Packet/Routing system control and Cross-connect Board	2	PCS	RTN950 Materials for NEAR-END
	04150591	04150591	LOOSE PICKING		Power Cable,10m,4mm^2,2*TB2PIN-I+4*T4^2GY,H07Z-K-4^2BL+H07Z-K-4^2B,LSZH	1	PC	RTN950 Materials for NEAR-END
	SL91EG4	03021MXJ	LOOSE PICKING		2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	1	PC	EG4 Card Total 1Pc for NEAR-END
RTN 950(V100R006) FOR FAR-END SITE KA1230					**RTN910A/IDU Solution (no patch chord)**			**FE RTN910A/IDU Solution (no patch chord)**
	SL9K2URACK01	RTN_910B			RTN910A/IDU Solution (no patch chord)	1	PC	RTN950 Materials for FAR-END
	C0CAT6A03	04050612	LOOSE PICKING		Outsourcing cable,CAT6A Network cable,3m,MP8,CC4P0.48S/FTPB(PANTONE 3005U),MP8	1	PC	RTN950 Materials for FAR-END
Access MW FROM: KA1231 FACING TO: KA1230					**Versatile Dual IF Board**			
	ISM6	**03022VHK**			**Versatile Dual IF Board**	**2**	PCS	2 FOR NEAR_END/ 2 FAR-END INCLUDED IN ODU BOX
Access MW FROM: KA1231 FACING TO: KA1230					**ODU (13G_2+0_D_1.2m)**			
2	TEODU200	52413096	LOOSE PICKING		Microwave Outdoor Unit,RTN XMC,13G,-2,266MHz,Sub Band B,Low site,H ,12863MHz,12982MHz,without doc,WR-75,H01	2	PCS	LOW BAND ODU KA1230
	TEODU200	52413097	LOOSE PICKING		Microwave Outdoor Unit,RTN XMC,13G,-2,266MHz,Sub Band B,High site,H ,13129MHz,13248MHz,without doc,WR-75,H01	2	PCS	HIGH BAND ODU KA1231
	IFODU-5D01	02230CJP	LOOSE PICKING		IF/ODU Installation Accessories(5D)	4	PCS	2 FOR NEAR_END/ 2 FAR END INCLUDED IN ODU BOX
	A13D12HAC	52431379			Microwave Antenna,A13D12HAC,13G,1200mm,HP,Dual Polarization,Direct(XMC)/Separate(All RTN ODU) Mount,41.6dBi,1.3deg,30dB,With English doc,C3	**2**	PCS	1 ANT.NEAR-END/1 ANT.FAR- END
	RF CABLE-5D	25070149			Coaxial Cable ,Copper-clad Aluminium Wire,50ohm,7.6mm,4.8mm,1.8mm,Black,5D	260	M	140M FOR NEAR-END/ 120M FOR FAR-END

#N/A

Warehouse Signature Date/Time	Receiver signature Date/Time	Trucker signature Date/Time

	KA1231	KA1230
Latitude	15 56 07.79 N	15 53 05.06 N
Longitude	098 12 31.70 E	098 08 55.90 E
True azimuth (°)	228.82	48.81
Vertical angle (°)	-0.26	0.20
Elevation (m)	38.74	16.00
Antenna model	A13D12HAC (TR)	A13D12HAC (TR)
Antenna file name	a13d12hac	a13d12hac
Antenna gain (dBi)	41.60	41.60
Antenna height (m)	54.00	43.00
Connector loss (dB)	1.50	1.50
Miscellaneous loss (dB)	1.50	1.50
Frequency (MHz)	13000.00	
Polarization	Vertical	
Path length (km)	8.53	
Free space loss (dB)	133.36	
Atmospheric absorption loss (dB)	0.42	
Net path loss (dB)	56.59	56.59
Radio model	13G_XMC2_QPSK_14M_21M	13G_XMC2_QPSK_14M_21M
Radio file name	13gxmc214mqpsk	13gxmc214mqpsk
Emission designator	14M0D7W	14M0D7W
TX channel assignments	13G_14M_13H 13192.00V	13G_14M_13L 12926.00V
	13G_14M_13H 13192.00H	13G_14M_13L 12926.00H
XPD fade margin - multipath (dB)	29.40	29.40
Geoclimatic factor	5.590E-006	
Path inclination (mr)	3.96	
Fade occurrence factor (Po)	1.309E-004	
Polarization	Vertical	
Rain region	ITU Region P	

	TX power (dBm)		RX threshold level (dBm)		EIRP (dBm)		Receive signal (dBm)		Thermal fade margin (dB)		Flat fade margin - multipath (dB)	
256QAM 89Mbps	15.00	15.00	-72.00	-72.00	53.60	53.60	-41.59	-41.59	30.41	30.41	9.84	9.84
128QAM 78Mbps	15.00	15.00	-75.00	-75.00	53.60	53.60	-41.59	-41.59	33.41	33.41	12.85	12.85
64QAM 66Mbps	15.00	15.00	-78.00	-78.00	53.60	53.60	-41.59	-41.59	36.41	36.41	15.85	15.85
32QAM 53Mbps	15.00	15.00	-81.00	-81.00	53.60	53.60	-41.59	-41.59	39.41	39.41	18.86	18.86
16QAM 42Mbps	**15.00**	**15.00**	**-84.00**	**-84.00**	**53.60**	**53.60**	**-41.59**	**-41.59**	**42.41**	**42.41**	**21.86**	**21.86**
16QAMS 36Mbps	15.00	15.00	-86.00	-86.00	53.60	53.60	-41.59	-41.59	44.41	44.41	23.86	23.86
QPSK 21Mbps	15.00	15.00	-91.50	-91.50	53.60	53.60	-41.59	-41.59	49.91	49.91	29.36	29.36

	Worst month multipath		Annual multipath		Annual rain		Total annual		Time in mode (%)	
256QAM 89Mbps	99.9986	99.9986	99.9998	99.9998	99.9768	99.9768	99.9765	99.9765	99.9765	99.9765
128QAM 78Mbps	99.9993	99.9993	99.9999	99.9999	99.9860	99.9860	99.9859	99.9859	0.0094	0.0094
64QAM 66Mbps	99.9997	99.9997	99.9999	99.9999	99.9909	99.9909	99.9909	99.9909	0.0049	0.0049
32QAM 53Mbps	99.9998	99.9998	99.9999	99.9999	99.9937	99.9937	99.9937	99.9937	0.0028	0.0028
16QAM 42Mbps	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**99.9954**	**99.9954**	**99.9954**	**99.9954**	**0.0017**	**0.0017**
16QAMS 36Mbps	99.9999	99.9999	99.9999	99.9999	99.9962	99.9962	99.9962	99.9962	0.0008	0.0008
QPSK 21Mbps	99.9999	99.9999	99.9999	99.9999	99.9975	99.9975	99.9975	99.9975	0.0014	0.0014

IPRAN Low Level Design

Site ID	KA1231
Node_ID	KA1231_CSG60H
Node Role	CSG
Date	14/02/2019 12:36
Responsible	Khin Moh Moh Lwin

Basic NE Setting

DCN

Node Name	KA1231_CSG60H
Loopback IP	10.7.13.121
NEID	14114
Extend ID	7
NE Communication Parameter IP Address	129.7.55.34
NE Communication Parameter IP Mask	255.255.0.0
NE Communication Parameter Gateway IP Address	0.0.0.0
Gateway type	NON-GW
Gateway Node	MO0151_CSG02H
Gateway IP	10.7.188.169
Backup GNE	KA0187_CSG01H

Interface Setting

Port Configuration

Link Name	VPN Link_RAN_ABIS	
Site Name	KA1231	RBS
Port Category	Ethernet Virtual Port	
Port	1201	
Name	RAN_ABIS	
Port Type	VLAN Sub Interface	VLAN Sub Interface
Port Mode	L3	L3
VLAN	1201	1201
IP Address	10.13.212.149	10.13.212.150
Mask	255.255.255.252	255.255.255.252
Associated Board	1-EG4	
Associated Port	1-EG4-3	
Specify IP add	Manual	Manual
Encapsulation	802.1Q	802.1Q
Tag	Tag Aware	Tag Aware
Working Mode	Auto-Negotiation	Auto-Negotiation
MTU(bytes)	1522	1522
Traffic Policing Status	Disable	Disable
Traffic Policing Period(min)	-	-
Enable Tunnel	Disable	Disable
Max Resever Bandwith(Kbit/s)	1000000	1000000
TE Mesurement	10	10
Admin Group	0	0
Swithing Mode trigger by bit errors	SF	SF
Hold off time	0	0

Link Name	VPN Link_OM_M2000	
Site Name	KA1231	RBS
Port Category	Ethernet Virtual Port	
Port	1203	
Name	OM_M2000	
Port Type	VLAN Sub Interface	VLAN Sub Interface
Port Mode	L3	L3
VLAN	1203	1203
IP Address	10.13.203.149	10.13.203.150
Mask	255.255.255.252	255.255.255.252
Associated Board	1-EG4	
Associated Port	1-EG4-3	
Specify IP add	Manual	Manual
Encapsulation	802.1Q	802.1Q
Tag	Tag Aware	Tag Aware
Working Mode	Auto-Negotiation	Auto-Negotiation
MTU(bytes)	1522	1522
Traffic Policing Status	Disable	Disable
Traffic Policing Period(min)	-	-
Enable Tunnel	Disable	Disable
Max Resever Bandwith(Kbit/s)	1000000	1000000
TE Mesurement	10	10
Admin Group	0	0
Swithing Mode trigger by bit errors	SF	SF
Hold off time	0	0

Link Name	VPN Link_RAN_IuB	
Site Name	KA1231	RBS
Port Category	Ethernet Virtual Port	
Port	1202	
Name	RAN_IuB	
Port Type	VLAN Sub Interface	VLAN Sub Interface
Port Mode	L3	L3
VLAN	1202	1202
IP Address	10.13.221.149	10.13.221.150
Mask	255.255.255.252	255.255.255.252
Associated Board	1-EG4	
Associated Port	1-EG4-3	
Specify IP add	Manual	Manual
Encapsulation	802.1Q	802.1Q
Tag	Tag Aware	Tag Aware
Working Mode	Auto-Negotiation	Auto-Negotiation
MTU(bytes)	1522	1522
Traffic Policing Status	Disable	Disable
Traffic Policing Period(min)	-	-
Enable Tunnel	Disable	Disable
Max Resever Bandwith(Kbit/s)	1000000	1000000
TE Mesurement	10	10
Admin Group	0	0
Swithing Mode trigger by bit errors	SF	SF
Hold off time	0	0

Link Name	KA1231_CSG60H-KA1230_CSG60H-IGP Link	
Site Name	KA1231_CSG60H	KA1230_CSG60H
Port Category	Microwave port	
Port	3/1.3/1	4/1.4/2
Name	To-KA1230_CSG60H	To-KA1231_CSG60H
Port Type		
Port Mode	L3	L3
VLAN	1	1
IP Address 1	10.7.223.49	10.7.223.50
Mask 1	255.255.255.252	255.255.255.252
Associated Board	3-ISV3-1	K-ISV3-1
Associated Port	3/1.3/1	4/1.4/2
Specify IP add	Manual	Manual
Encapsulation	802.1Q	802.1Q
Tag	Tag Aware	Tag Aware
Working Mode	Auto-Negotiation	Auto-Negotiation