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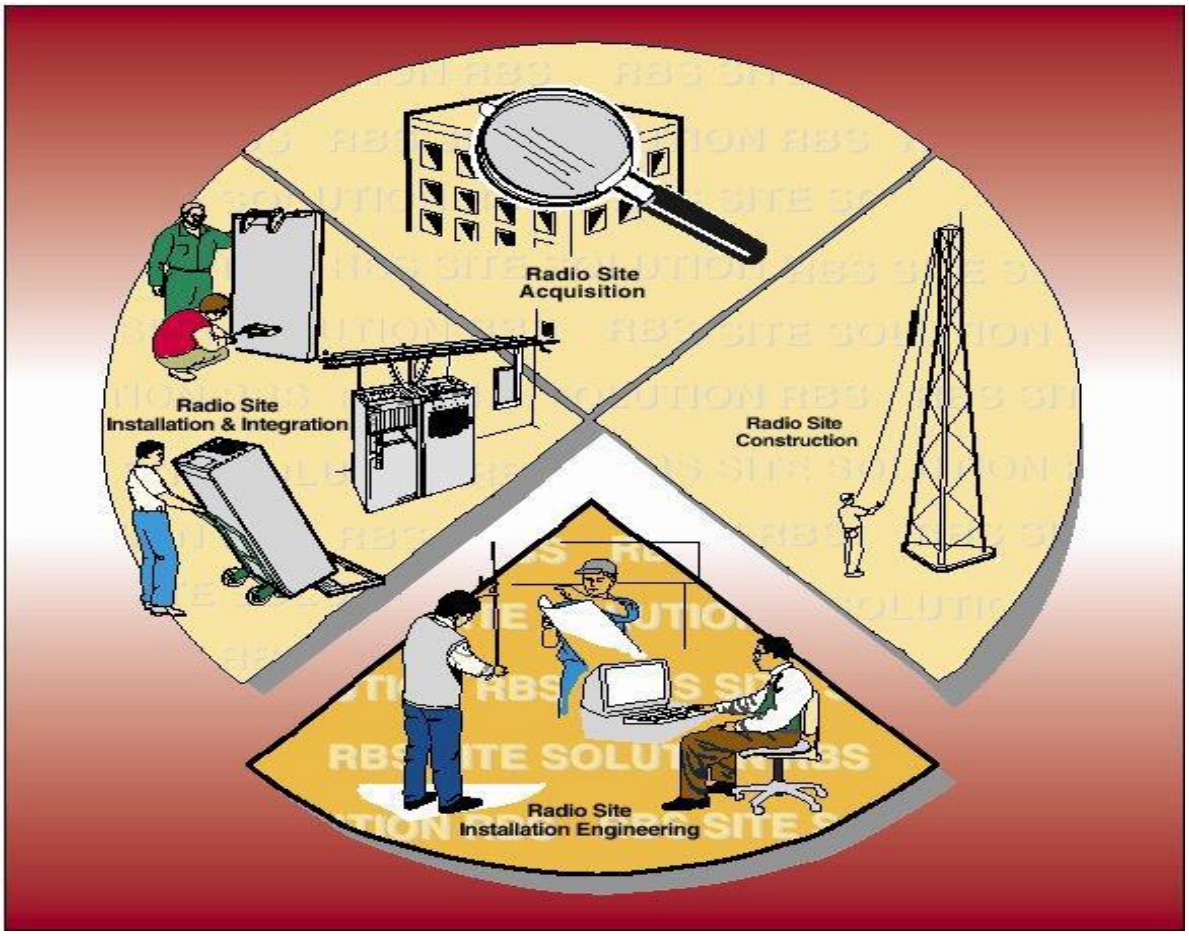

Transmission Site Design Documentation

NE: KY0032 **FE:** KY0023

Phase: 1

Telenor Myanmar

GBT

Radio TRM OptiX RTN950

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CAPTION LIST

Document No.
001 53-IPA 165 3770 Uen

Date	Rev.
2015-05-11	A

SITE

DESIGN

DOCUMENT

telenor

Telenor Myanmar

KY0032

Kayah

Radio TRM OptiX RTN950

KY0032 - KY0023

Document List	**1**
Site Documents	**2**
Plant Specification	**3**
Cabling Diagram	**4**
External Alarm	**5**
Check Lists	**6**
Test Documents	**7**
Acceptance Certificate	**8**
Product List (Trm)	**9**
Others	**10**

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DOCUMENT LIST

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		001 51-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

	Document name	Document number	Rev.
	SITE DESIGN DOCUMENT	001 53-IPA 165 3770 Uen	A
1	**DOCUMENT LIST**	001 51-IPA 165 3770 Uen	A
2	**SITE DOCUMENTS**		
2.1	Configuration Data TRM	2/127 04-IPA 165 3770 Uen	A
2.2	Situating Plan	153 38-IPA 165 3770 Uen	A
3	**PLANT SPECIFICATION**		
3.1	Plant Specification (TRM)	2/127 11-IPA 165 3770 Uen	A
4	**CABLING DIAGRAM**		
4.2	Cabling Diagram (signal and antenna)	2/193 18-IPA 165 3770 Uen	A
4.3	Block Diagram (TRM Cross Connect)	3/193 18-IPA 165 3770 Uen	A
4.4	Allocation Drawing (TRM Rack-Layout)	4/193 18-IPA 165 3770 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 165 3770 Uen	A
6.2	OHS Check List	176 27-IPA 165 3770 Uen	A
7	**TEST DOCUMENTS**		
7.1	Test Report (RTN950 Functional)	3/153 83-IPA 165 3770 Uen	A
8	**ACCEPTANCE CERTIFICATE**	179 61-IPA 165 3770 Uen	A
9	**PRODUCT LIST**		
9.1	Product List (TRM)	2/153 83-IPA 165 3770 Uen	A
10	**OTHERS**		
10.1	Site Photos		A
10.2	SMR		A
10.3	Link Budget		A

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		2/127 04-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

1 GENERAL

1.1	Geographical coordinates	N 19º 40' 38.42" - E 97º 12' 34.31"
1.2	Region	Kayah
1.3	Address	Oatayaryone Kyaung Tite N0.4,Lanma Zaypaing ward, Loikaw
1.4	Type of Site	Green Field
1.5	Tower Height	42 m
1.6	Transmission connection type	GE (Electrical)

2 SITE DATA

2.1	Switch/Router type	RTN950
2.2	NE ID	11891
2.3	NE Parameter IP Address	129.7.46.115
2.4	Loop back IP Address	10.7.16.2
2.5	Subnet Mask	255.255.0.0
2.6	Default Gateway	10.7.66.241

3 HOP DATA

The following below are transmission links to far-end sites

To Site	Azimuth	RSL (dBm)	Path length (km)	Frequency Band	Sub-band	System Cofig.	Ant. Size (m)	Traffic Capacity
KY0023	130.80°	-37.01	2.17	18G	Sb2	1+0 Int	0.3	66M

4 RADIO

			To site KY0023
4.1	Link number		KY0032-KY0023
4.2	ODU type		18G_XMC2_ 64 QAM 14 M 66M
4.3	ODU weight (kg)		4.5kg
4.4	ODU dimension (WxHxD mm)		228×228×75
4.5	No. of ODU		1
4.6	Operating voltage range		48VDC ±15%
4.7	Power consumption for one ODU		≤36w
4.8	Frequency Band		18G
4.9	ODU sub-band		Sb2
4.10	Frequency (MHz) TX Ch.	NE	49H 19383.75V
		FE	49L 18373.75V
4.11	Output power (dBm)		22
4.12	Bandwidth/Modulation		14 M / 64 QAM
4.13	RX threshold criteria		1E-6 BER
4.14	Maximum receive signal (dBm)		-77.50
4.15	Receive signal (dBm)		-37.01
4.16	Polarization		Vertical

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		2/127 04-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

5 ANTENNA

5.1	Antenna type	Single Pol.
5.2	No. of Antennas	1
5.3	Antenna Height (m)	40
5.4	Antenna Gain, Mid (dBi)	33.70
5.5	Return loss (dBi)	17.69
5.6	Weight of antenna (kg)	9.5
5.7	Wind Forces, Axial (N)	430
5.8	Wind Forces, Side (N)	235

6 POWER CONSUMPTION

6.1	Total power consumption (W) (Power for IDU)	250w

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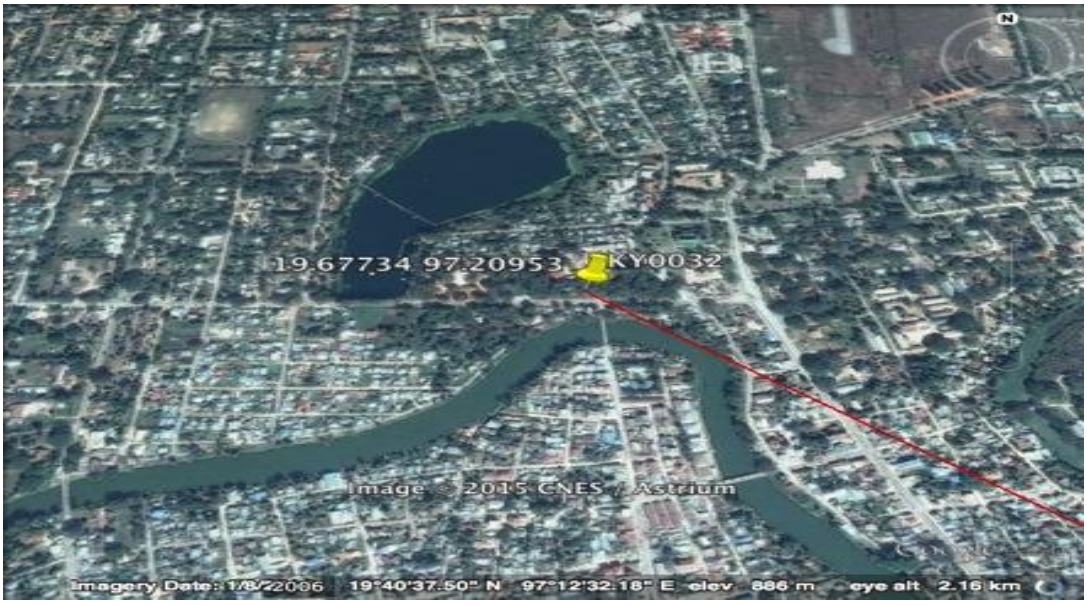
SITUATING PLAN 1(1)

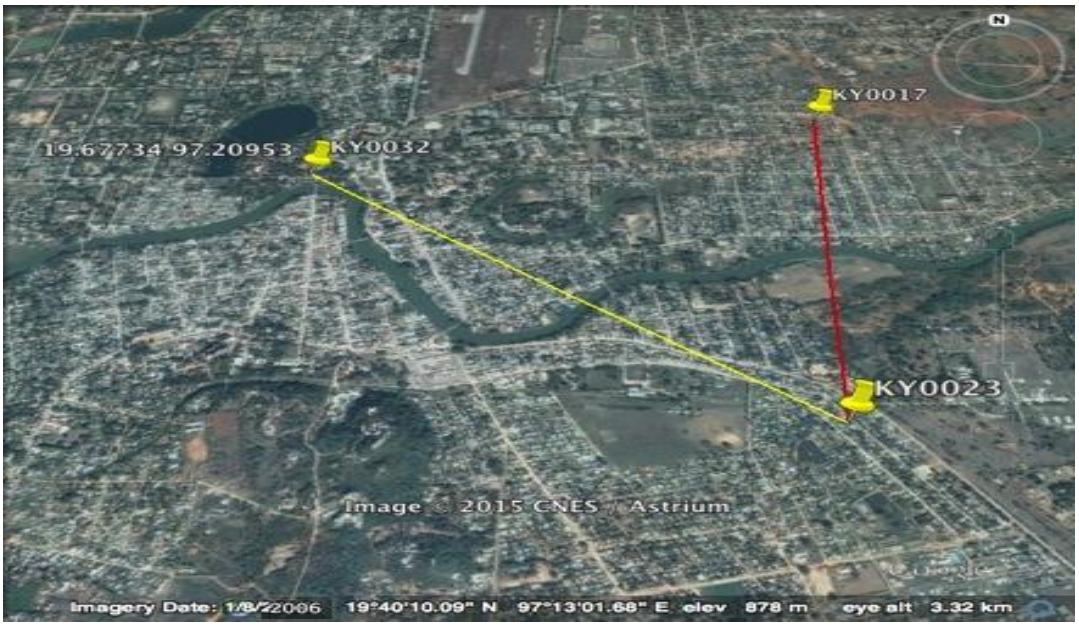
Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		153 38-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032**

Geographical coordinates N 19º 40' 38.42" - E 97º 12' 34.31"
Address Oatayaryone Kyaung Tite N0.4,Lanma Zaypaing ward, Loikaw



LINK ID: KY0032 - KY0023



Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		2/127 11-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

Item	Description	Item Code	Quantity	
1	**ANTENNA EQUIPMENT (Antenna with accessories)**			
	0.3m 18GHz HP,Single Polarization Antenna	52431114	2	sets
2	**RADIO EQUIPMENT (ODU)**			
	ODU (18G_1+0_S_0.3m)			
	ODU,RTN XMC,18G,-2,1010/1008MHz,SB B=L H,18180MHz,18700MHz,Without doc,WR-42,H01	52413078	1	Unit
	ODU,RTN XMC,18G,-2,1010/1008MHz,SB B=H H,19190MHz,19710MHz,Without doc,WR-42,H01	52413079	1	Unit
3	**OUTDOOR INSTALLATION**			
	Coaxial Cable ,Copper-clad Aluminium Wire,50ohm,7.6mm,4.8mm,1.8mm,Black,5D	25070149	130	m
	IF/ODU Installation Accessories(5D)	02230CJP	2	PCS
	RTN 600 IFX Board Delivery Accessories	02238083	2	PCS
4	**INDOOR UNIT OPTIX RTN 950(V100R006)**			
	RTN 950 Assembly Chassis(-48V)	02113174	1	Unit
	Versatile IF Board	03021PFK	2	PCS
	TDM/Hybrid/Packet/Routing system control and Cross-connect Board	03055091	2	PCS
	2*GE(SFP/RJ45)+2*GE(RJ45) Gigabit Ethernet Board with switch function	03021MXJ	1	PC
	Twisted-Pair Cable,100ohm	25050014	10	m
	RTN950 IDU Required Delivery Accessory, Installation Material (Without Power Cable)	02239644	1	PC
	Power Cable,3m,4mm^2	04150466	1	PC

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BLOCK DIAGRAM (TRM Cross Connect) 1 (1)

Prepared (also subject responsible if other)	Document No.		
EMZ Jovito Ege / G. Dela Cruz	3/193 18-IPA 165 3770 Uen		
Doc respons/Approved	Date	Rev.	File
Minh Nguyen D	2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032**

A. Radio TRM OptiX RTN950 LAYOUT

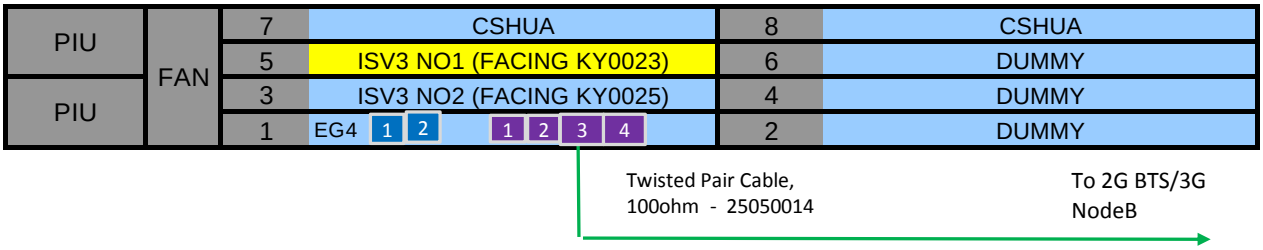
SITE A (NE) **KY0032** **CONFIGURATION:** **1 x L3**

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

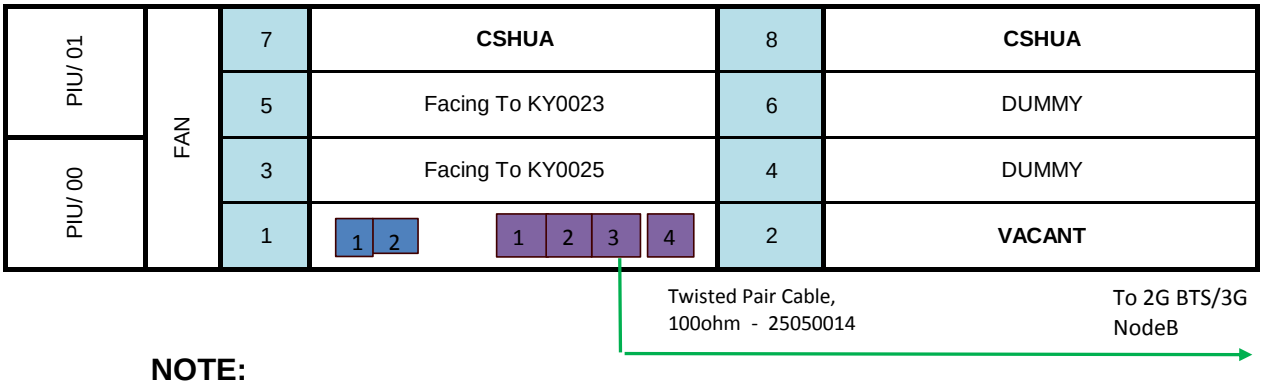
GE Fiber

GE Copper

RTN950N:IDU 1 -L3 CSG01



OptiX RTN 950 L3 - CSG01



NOTE:

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

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ALLOCATION DRAWING (TRM Rack Layout) 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		4/193 18-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032**

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

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		153 11-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

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 Jovito Ege / G. Dela Cruz		176 27-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032**

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

EQUIPMENT USED	NOS.
1 Digital Multimeter	2
2 Digital Tilt Meter	1
3 Mirror Compus	1
4 Hammer Dril	1
5 Heat Gun	1
6 Hexagon Key Set	1 Set

EQUIPMENT USED	NOS.
7 Screw Driver Set	1 Set
8 Knife	2
9 Cable Cutter	2
10 Tie Cutter	2
11 U-ring Wrench -8~32	1 Set
12 Socket Sets	1 Set

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			**OK**	
9	Site Safety Protection	**OK**			
10	Security Guard at site			**OK**	

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 Jovito Ege / G. Dela Cruz		3/153 83-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

NETWORK ADDRESSES (DCN)

		Address	OSPF Area
Agent IP Address			
Ethernet	IP Address	129.7.46.115	
	IP Net Mask	255.255.0.0	
Default gateway		10.7.66.241	
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	19383.75 and 18373.75
2.2	RF channel number	14
2.3	TX Power set by webLct	22

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 64QAM

4.2 Reference RF Bandwidth 14M-66M

4.3 ACM engine ☑ Enabled ☐ Disabled

4.4 TX power ramp up to ☑ Enabled ☐ Disabled

4.5 Upper Modulation 1024 QAM

4.6 Lower Modulation 16 QAM

4.7 ACM Table

☐ 4QAM-st ☐ 4QAM
☐ 16QAM-st ☐ 16QAM
☐ 32QAM ☑ 64QAM
☐ 128QAM ☐ 256QAM
☐ 512QAM ☐ 1024AM

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		3/153 83-IPA 165 3770 Uen		
Doc respons/Approved	**Checked**	**Date**	**Rev.**	**File**
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

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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PRODUCT LIST

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		2/153 83-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

UNIT	PRODUCT CODE	REV	SERIAL No.	MFG.DATE
TRANSMISSION EQUIPMENT				
ODU,RTN XMC,**18G**, SB B=L	52413078		215241307810F3000545	
18180MHz,18700MHz				
ODU,RTN XMC,**18G**, SB B=H	52413079		215241307810F300025	
19190MHz,19710MHz				
ANTENNA				
18G, Microwave Antenna				
300mm, Single Pol	52431114		21524311143AF1U00742	
300mm, Single Pol	52431114		21524311143AF1U00752	
600mm, Single Pol	52431115			
600mm, Dual Pol	52431387			
900mm, Single Pol	52431151			
900mm, Dual Pol	52431388			
1200mm, Single Pol	52431116			
1200mm, Dual Pol	52431389			
RTN 950(V100R006)				
NEAR-END RTN				
RTN 950 Assembly Chassis(-48V)	2113174		2102113174P0F1001238	
RTN 950 FAN UNIT	TND1FAN06		022GSYWOF1002209	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNF1065194	
PIU UNIT PWR 48v, -60v	TND000PIU00		020KHXCNF1065181	
Slot 1 - EG4	03021MXJ		021MXJCNF2000602	
Slot 2 - EG4	03021MXJ			
Slot 2 - ISV3	03021PFK		021PFK10EA003823	
Slot 3 - ISV3	03021PFK			
Slot 4 - ISV3	03021PFK			
Slot 5 - ISV3	03021PFK			
Slot 6 - ISV3	03021PFK			
Slot 7 - CSHU 1	03055091		210305509110F3000136	
Slot 8 - CSHU 2	03055091		210305509110F3000141	
FAR-END RTN				
Slot 2 - ISV3	03021PFK			
Slot 3 - ISV3	03021PFK		021PFK10EA003812	
Slot 4 - ISV3	03021PFK			
Slot 5 - ISV3	03021PFK			
Slot 6 - ISV3	03021PFK			

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SITE PHOTO

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		IPA 165 3770 Uen		
Doc respons/Approved	**Checked**	**Date**	**Rev.**	**File**
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

Please take site photos of the following equipment

1) RTN Chassis (KY0032)

2) TRM Rack Layout

3) MW antenna on tower

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SITE PHOTO 1 (1)

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	B	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032** **KY0032 - KY0023**

Please take site photos of the following equipment

1) RTN Chassis (KY0032)

2) TRM Rack Layout

3) MW antenna on tower

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SITE MATERIAL REQUEST (SMR)

telenor

Proposed:	Project Manager:	Requester Name:	Request Date:	Rev:	A
EMZ Jovito Ege	Minh Nguyen D	Yeashir Arafat	April 22, 2015	Facing Sites	KY0023
Customer reference no./Main Project: TELENOR MYANMAR	SMR ID:	Requester Tel: 09795811224	Site ID (Candidate): KY0032		
Delivery date:	Sub Contact person:	Sub Telephone no.:	Site Type: GBT	Region:	Kayah

Site Address:	Oatayaryone Kyaung Tite N0.4,Lanma Zaypaing ward, Loikaw	P/L No.:	

Remarks: SMR is based on Configuration_Connectivity_April 22 V2 2PM

No.	Model PO	Part Number/ Product Code (WH)	Package No.	PO No.	DESCRIPTION	QTY	UOM	Remarks
RTN 950(V100R006) FOR KY0032					**IDU Non Hub (L3)**			
	SL9MSITE96	02310UTQ			RTN 950 Basal Configuration 2*CSHUA+2*GE(SFP/RJ45)+2*GE(RJ45) (Support Routing Function) Include IDU Installation Materials	1	PC	RTN950 Package of Materials for NEAR-END
	C0000FE00	25050014			Twisted-Pair Cable,100ohm,Category 5e UTP,0.51mm,24AWG,8Cores,PANTONE 430U,Use with Plug:14080082	10	M	RTN950 Package of Materials for NEAR-END
Access MW FROM: KY0032 FACING TO: KY0023					**ODU (18G_1+0_S_0.3m)**			
	SL91ISV3	03021PFK			Versatile IF Board	**2**	PCS	1 FOR NEAR_END/ 1 FAR-END INCLUDED IN ODU BOX
	ODU(XMC-2-18G)	52413078			Microwave Outdoor Unit,RTN XMC,18G,-2,1010/1008MHz,Sub Band B,Low site,H,18180MHz,18700MHz,Without doc,WR-42,H01	1	PC	LOW BAND ODU KY0023
	ODU(XMC-2-18G)	52413079			Microwave Outdoor Unit,RTN XMC,18G,-2,1010/1008MHz,Sub Band B,High site,H,19190MHz,19710MHz,Without doc,WR-42,H01	1	PC	HIGH BAND ODU KY0032
2	A18S03HAC	52431114			Microwave Antenna,A18S03HAC,18G,300mm,HP,Single Polarization,Direct(XMC)/Separate(All RTN ODU) Mount,34.2dBi,3.3deg,60dB,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	130	M	BOTH NEAR-END/FAR-END
	IFODU-5D01	02230CJP			IF/ODU Installation Accessories(5D)	2	PCS	2 FOR NEAR_END/ 2 FAR END INCLUDED IN ODU BOX
	XPIC-Accessories	02238083			RTN 600 IFX Board Delivery Accessories	2	PCS	2 FOR NEAR_END/ 2 FAR END INCLUDED IN ODU BOX

Note: 1 LINK FACING FAR END KY0023 Kanpat street,Dawthama ward,Loikaw

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

Link Budget_Rev.A (AM Enable)

	KY0032	KY0023
Latitude	19 40 38.42 N	19 39 52.38 N
Longitude	097 12 34.31 E	097 13 30.61 E
True azimuth (°)	130.80	310.81
Vertical angle (°)	-0.03	0.02
Elevation (m)	887.40	893.42
Antenna model	A18S03HAC (TR)	A18S03HAC (TR)
Antenna file name	a18s03hac	a18s03hac
Antenna gain (dBi)	33.70	33.70
Antenna height (m)	40.00	33.00
Connector loss (dB)	0.50	0.50
Miscellaneous loss (dB)	0.50	0.50
Frequency (MHz)	18000.00	
Polarization	Vertical	
Path length (km)	2.17	
Free space loss (dB)	124.29	
Atmospheric absorption loss (dB)	0.12	
Net path loss (dB)	59.01	59.01
Radio model	18G_XMC2_64QAM_14M_66M	18G_XMC2_64QAM_14M_66M
Radio file name	18gxmc214m64qam	18gxmc214m64qam
Emission designator	14M0D7W	14M0D7W
TX channel assignments	18G_14M_49H 19383.75V	18G_14M_49L 18373.75V
XPD fade margin - multipath (dB)	15.72	15.72
Geoclimatic factor	5.590E-006	
Path inclination (mr)	0.45	
Fade occurrence factor (Po)	7.024E-006	
Polarization	Vertical	

	TX power (dBm)		RX threshold level (dBm)		EIRP (dBm)		Receive signal (dBm)		Thermal fade margin (dB)		Flat fade margin - multipath (dB)	
256QAM 89Mbps	17.00	17.00	-71.50	-71.50	49.70	49.70	-42.01	-42.01	29.49	29.49	9.64	9.64
128QAM 78Mbps	17.00	17.00	-74.50	-74.50	49.70	49.70	-42.01	-42.01	32.49	32.49	12.66	12.66
64QAM 66Mbps	**22.00**	**22.00**	**-77.50**	**-77.50**	**54.70**	**54.70**	**-37.01**	**-37.01**	**40.49**	**40.49**	**15.70**	**15.70**

	Worst month multipath		Annual multipath		Annual rain		Total annual		Time in mode (%)	
256QAM 89Mbps	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999
128QAM 78Mbps	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	99.9999	0.0000	0.0000
64QAM 66Mbps	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**99.9999**	**0.0000**	**0.0000**

Multipath fading method - Rec. ITU-R P.530-7/ 8
Rain fading method - Rec. ITU-R P.530-8/13 (R837-5)

ERICSSON

ACCEPTANCE CERTIFICATE 1(1)

Prepared (also subject responsible if other)		Document No.		
EMZ Jovito Ege / G. Dela Cruz		179 61-IPA 165 3770 Uen		
Doc respons/Approved	Checked	Date	Rev.	File
Minh Nguyen D		2015-05-11	A	KY0032 Telenor_A

Project: **Telenor Myanmar** **Radio TRM OptiX RTN950**
Site: **KY0032**

NETWORK ELEMENT ACCEPTANCE CERTIFICATE

This is to certify that Ericsson Radio Systems AB has delivered, installed and tested the Network Elements on site **KY0032** 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 165 3770 Uen rev B

Date: .....

for

Telonor
(The Buyer)

Name: .....

Title: .....

for

Ericsson Myanmar
(The Vendor)

Name: .....

Title: .....