DAS System Tune up procedure

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1 INTRODUCTION

This document is primarily written for those who are new to Comba ComFlex-4300 DAS system and wish to tune up the equipment. The document is applicable to below products from Comba.

Model number: MU-4300, HRU-4300

2 PREPARATION

This section will be discussing on:

- 1 Preparation for those who are going to operate the equipment;
- 2 How to connect to equipment for setting;
- 3 LED Indicator description;

2.1 PERSONAL PREPARATION

1 - The following checklist will help to make sure relevant personnel get ready before operation.

The personnel preparation list:

a. Only trained or qualified personnel is recommended for performing tuning with equipment. Operating person should be with necessary knowledge of electronic, RF, and familiar with local regulation, rules.

b. Personnel shall read through the manual/instructions/guide carefully before operation.

c. Check if there is warning/alert sign on the equipment to avoid possible danger.

d. Wear proper cloth. If necessary, equip with PPE (Personal Protective Equipment).

e. Before operation, procedures and data recording form should be prepared.

2 - Package inspection

Visual inspect the external product package, and check internal items according to packing list. Prepare ample space and easy accessible to socket-outlet. For tools reference please find in manual.

3 - Tools preparation

Please prepare tools/cables and measuring instruments ready before hand-on. For tools recommendation, please refer to product user manual.

Handling Precautions

This covers a range of activities including lifting, lowering, pushing, pulling, carrying, moving, holding or restraining an object, animal or person. It also covers activities that require the use of force or effort, such as pulling a lever, or operating power tools.

Caution, Electrostatic Discharge (ESD)

Before removing the antistatic bag from repeater, enough caution shall be taken to avoid ESD. The Anti-static Wrist Strap is recommended.

2.2 EQUIPMENT CONNECTION

2.2.1 GROUNDING CONNECTION

The equipment must be grounded securely. Connect a copper wire to the grounding terminal on the mounting tab/enclosure, and connect the other end to a protective ground (i.e. building earth point). An internationally acceptable coloring code of the ground connection wire is green/yellow.



2.2.2 MU CONNECTION

Step1: Connect the MU OP (optical) port to one of the HRU OP port. (NOTE: requires Single Mode fiber with SC/APC connectors; MAXIMUM OPTICAL LOSS = 6.5dBo)

Step 2: For duplex application, connect the MU TX/RX port to the RF Source (BTS or BDA). For simplex application, connect the MU TX/RX port to the RF Source downlink, and then connect MU RX port with RF Source uplink.



Figure 1: Fiber Optical and RF Port Connection

Step 3: Connect the power cable to the power supply port (100-240VAC, 1Amp maximum).



Figure 2: MU Power Connection (Rear Panel)

2.2.3 HRU CONNECTION

Step1: Connect the HRU OP (optic) port to one of the OP port located on MU front panel.

Step 2: Connect ANT port to a broadband antenna.

Step 3: Connect DC 28V port to HRU Power Supply Unit DC 28V port.

Step 4: Connect power cable on PSU with the public power grid (110~220VAC, 14Amp maximum).





Figure 3: HRU Fiber Optical and RF Port Connection



Figure 4: PSU Power Port Connection

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2.2.4 CHECKLIST BEFORE POWERING

Users *MUST* check the following items before powering on MU and HRU.

	Table 1: Check list
ltem	Check List
Grounding	Make sure MU and HRU are well grounded.
Power	 The utility voltage is within 100~240VAC. DC cable of PSU is well connected with HRU.
RF connection	RF cables are well connected.
Optical connection	Optical cables are well connected.The optical link between MU and HRU is normal.
VSWR	• The VSWR of antenna port must less than 1.5.

2.2.5 VERIFY NORMAL OPRATION

Verify normal operation upon powering up the equipment.

LED Indicator	Normal Status	Indication
PWR	Steady green	Power indicator. If LED is off, it indicates the system has no power.
RUN	Flashing green (1 time/sec)	MU operation indicator. After initialization (1~2 minutes), the LED should flash at once per sec. If other flashing rate occurs, MU operates abnormally.
ALM	off	Alarm indicator. If LED is RED, there is an alarm.
OP	Steady green	Located on Fiber Optical Unit (FOU), it is an indicator for receive optical power. If LED is off, it indicates the receiving optical power is less than -10dBm.

Table 2 MU LED Indications

Table 3: HRU LED Indications

LED Indicator	Normal Sta- tus	Indication
PWR	Steady green	Power indicator. If LED is off, it indicates the system has no power.
RUN	Flashing green (1 time/sec)	HRU operation indicator. After initialization (1~2 minutes), the LED will flash once per sec. If other flashing rate oc- curs, HRU operates abnormally.
ALM	off	Alarm indicator. If LED is RED, there is an alarm.
OP	Steady green	Located on Fiber Optical Unit (FOU), it is an indicator of Receiving optical power. If LED is off, it indicates the receiving optical power is less than -10dBm.

End of Section

3 WEB GUI OPERATION

ComFlex can be monitored and controlled by WEB GUI, follow below contents to archive system parameter setting and commissioning.

3.1 WEB GUI CONNECTION

Step 1: Connect MU OMT port to PC RJ45 port with the supplied Ethernet cable to set up a physical connection.

Step 2: Go to laptop Control Panel\Network and Internet\Local Area Connection. Right click it and click Properties. Then follow the steps shown in figure below.

	Disable		Connect using:	Xtreme 57xx Gigabit Co	
- - -	Status			rationic of an origodic oc	Lonrigure
<u></u>	Repair		This connection use:	s the following items:	
	Bridge Connections		🗹 📮 File and Prin	nter Sharing for Microsoft	Networks
	Create Shortcut		QoS Packe	t Scheduler	
Local Area Connection	Delete		• Internet Flo		~
	Rename		<		>
	Properties		Install	Uninstall	Properties
🔘 Obtain an IP address a	automatically				
─⊙ Use the following IP ad	ddress:				Aduspeed
IP address:	192.168	. 8 . 12			Advanced
Subnet mask:	255 . 255 .	. 255 . 0	V	ОК	Cancel
Default gateway:	192.168	. 8 . 1			

Figure 5: PC IP Address Setting

Step 3: Open browser (browser IE7.0, IE8.0, Chrome or Firefox, suggest disply resolution is 1024×768), input Web GUI IP address: 192.168.8.101, click [Enter].



Figure 6: Input IP Address

Step 2: Input User Name: admin; Password (default password: admin). Click [Log in].



Comba	
System Management Plat	form
username: admin	
password:	1
	Log In
Eigure Zuleput Lleer Ne	

Figure 7: Input User Name and Password

3.2 COMMISSIONING PROCEDURE

To complete the installation and commissioning, users need to follow the steps below.

		Commissioning	Firmware	Management	Logout
			Work Flow		
	Start	g 🛶 MU Calibration 🦛	RU Calibration	MU Setup KU S	Setup
Tips:					
Pleas	e click the "Start" button to p the process				
			[Start	
				Start	

Step 1: Click Menu bar [Commissioning] on home page, a work flow will show up.

Figure 8: Commissioning Procedure - Start

Step 2: Click **Start** to start RU device scan, this step will take about 1 minute.



Home	Devices	Commissioning			Mana	gement			Logout
			Worki	ng Flow			-		
	Start Params Setting	MU Calibration +	RUCa	libration	MU Setup		RU Setup	Fini	sn
Tins		RU	Serial Num	State		RU	Serial Num	State	
Scon	aing Einich	FF		Abnormal		FF		Abnormal	
Juan	ing i man	FF		Abnormal		02	T13080001	Normal	
		FF		Abnormal		03	T13080002	Normal	
		FF		Abnormal		04	T13080003	Normal	
		FF		Non Exist		FF		Non Exist	
		FF		Non Exist		FF		Non Exist	
		FF		Non Exist		FF		Non Exist	
		FF		Non Exist		FF		Non Exist	
		Sc	anning Before				Scanning After		
				Back	Next				

Figure 9: Commissioning Procedure – Device Scan

Step 3: Click Next to enter to Params Setting page. Click Modify, users can set the device information and system time.

	evices	Commissioning	Firmware	Management	Logout
			Work Flow		
Start 4	→ Params Setting ←	MU Calibration	RU Calibration	MU Setup RU S	etup 🔶 Finish
Tips:		Site	Dev Info	Date/Time	
1 Modify devices in	formation	MU		2013-09-26 11:24:01	Modify
2 After modification	n, please click	RU01		2013-09-26 11:25:56	Modify
"Next" button		RU02		2013-09-26 11:20:56	Modify
		RU03		2013-09-26 11:26:20	Modify
		RU04		2013-09-26 11:26:20	Modify
			Back	Nent	

Figure 10: Commissioning Procedure – Params Setting

Name	Current Value	Config Value
Dev Info		

Figure 11: Dev Info & Date/Time



Dev Info mainly used to record device location and Date/Time provide a time reference. Mouse click the Config Value of Date/Time to auto receive the computer time.

Step 4: Click to enter to MU Calibration page after finishing Parems Setting.

Step 5: Enter to HRU Calibration page after finishing MU Calibration.

NOTE1: Make sure the ANT port of HRU is connected with dummy load or antennas before Calibration. Several HRU can be calibrated simultaneously.

NOTE2: The maximum DL output power lever during the manufacturing process is 46 dBm per band of 40W product, and the tolerance is ± 1 dB, while 20W product is 43dBm per band and the tolerance is ± 1 dB. The UL output power lever is 25dBm per band, and the tolerance is ± 2 dB.

End of Section

End of Document