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ADVANCED ELECTRONIC SOLUTIONS

AVIATION SERVICES

COMMUNICATIONS AND CONNECTIVITY

MISSION SYSTEMS

CN-008 E500 Test Setup (MK3)

July 2016



主要内容

- E500硬件架构
- 控制电脑设置
- E500上电
- 预调试
- 附录



E500硬件架构



硬件架构

重量和尺寸

- **29 U cabinet:** 1 x AC + 3 Cell Units
- **38 U cabinet:** 1 x AC + 6 Cell Units

Table 2 Weights and dimensions — 29 U cabinet

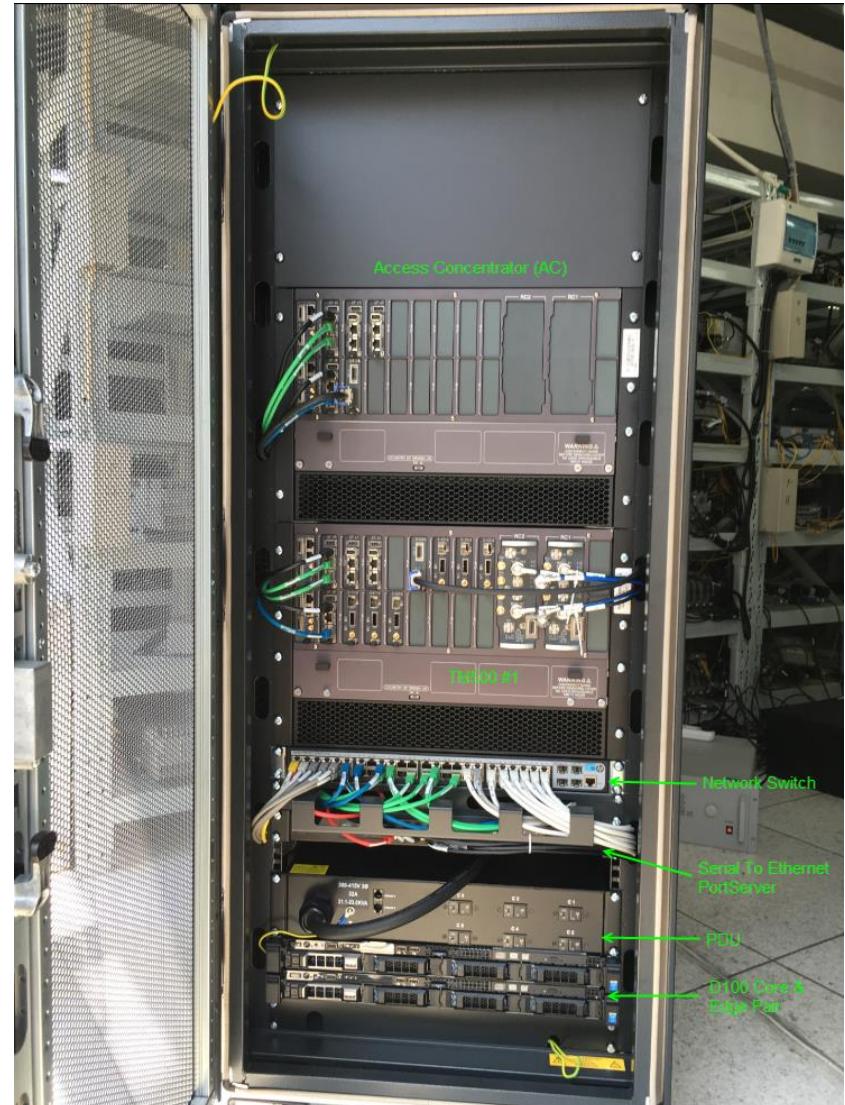
Height	150 cm	59 inch
Width	61 cm	24 inch
Depth	114 cm	45 inch
Weight	Typically 250 kg	Typically 550 pounds

Table 3 Weights and dimensions — 38 U cabinet

Height	188.5 cm	75 inch
Width	61 cm	24 inch
Depth	114 cm	45 inch
Weight	Typically 400 kg	Typically 900 pounds

硬件架构

29 U Cabinet Overview



硬件架构

29 U Cabinet Overview

- E500机柜主要包含如下硬件
 - Access Concentrator (AC) x 1
 - Cell Unit (HW104 TM500) x 3
 - Aeroflex SRIO Controller (ASC)
 - Serial To Ethernet PortServer
 - D1000 Core & Edge Pair
 - Network Switch
 - Power Distribution Unit (PDU)

硬件架构

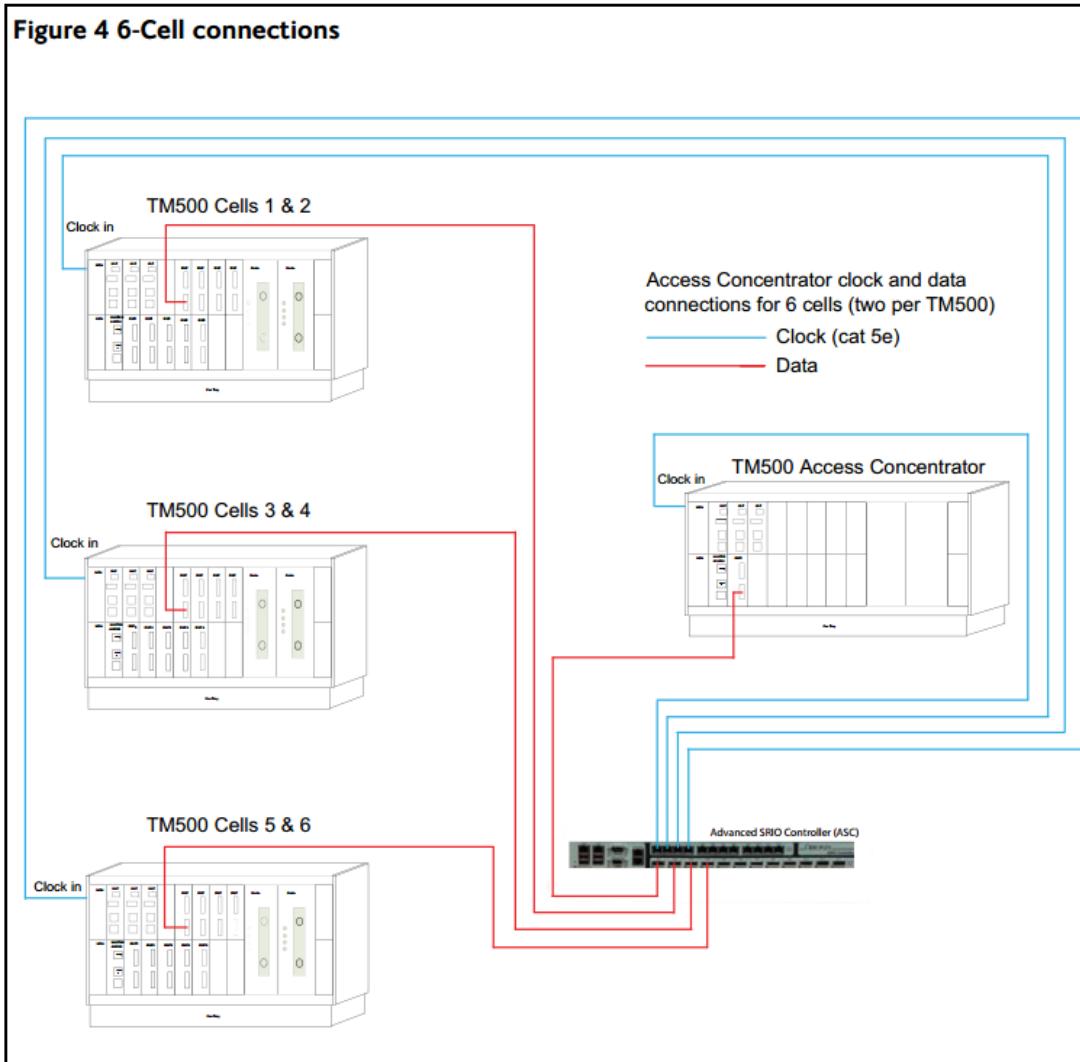
29 U Cabinet Overview

	IP	Username	Password
E500 Control PC	192.168.10.100		
PortServer	192.168.10.3	PORT 2001 ~ 2014	
PDU	192.168.10.4	admin	PDU500
ASC	192.168.10.9	tm500	
D1000 Edge	192.168.10.200	diverAdmin	diversifEye
Network Switch	192.168.10.254	admin	September21

	Control IP	Traffic IP (I2)	I3	Username	Password
E500				tm500	
TM500 #1	192.168.10.10	10.99.0.1	192.168.10.12	tm500_1	tm500
TM500 #2	192.168.10.20	10.99.0.2	192.168.10.22	tm500_2	
TM500 #3	192.168.10.30	10.99.0.3	192.168.10.32	tm500_3	
TM500 #7 (AC)	192.168.10.70	10.99.0.7	192.168.10.72	tm500_7	

硬件架构

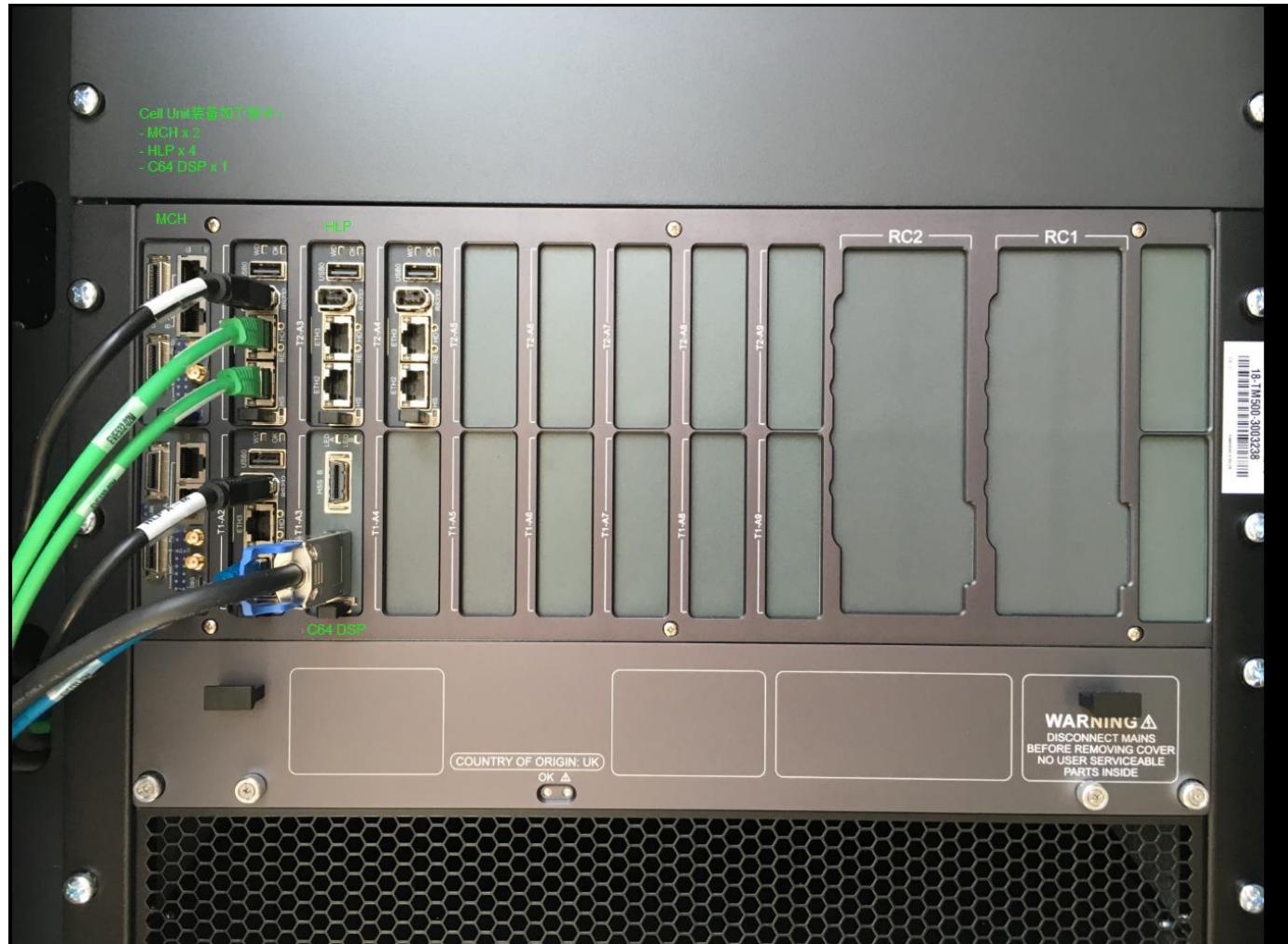
29 U Cabinet 6-Cell Connections



硬件架构

Access Concentrator (AC)

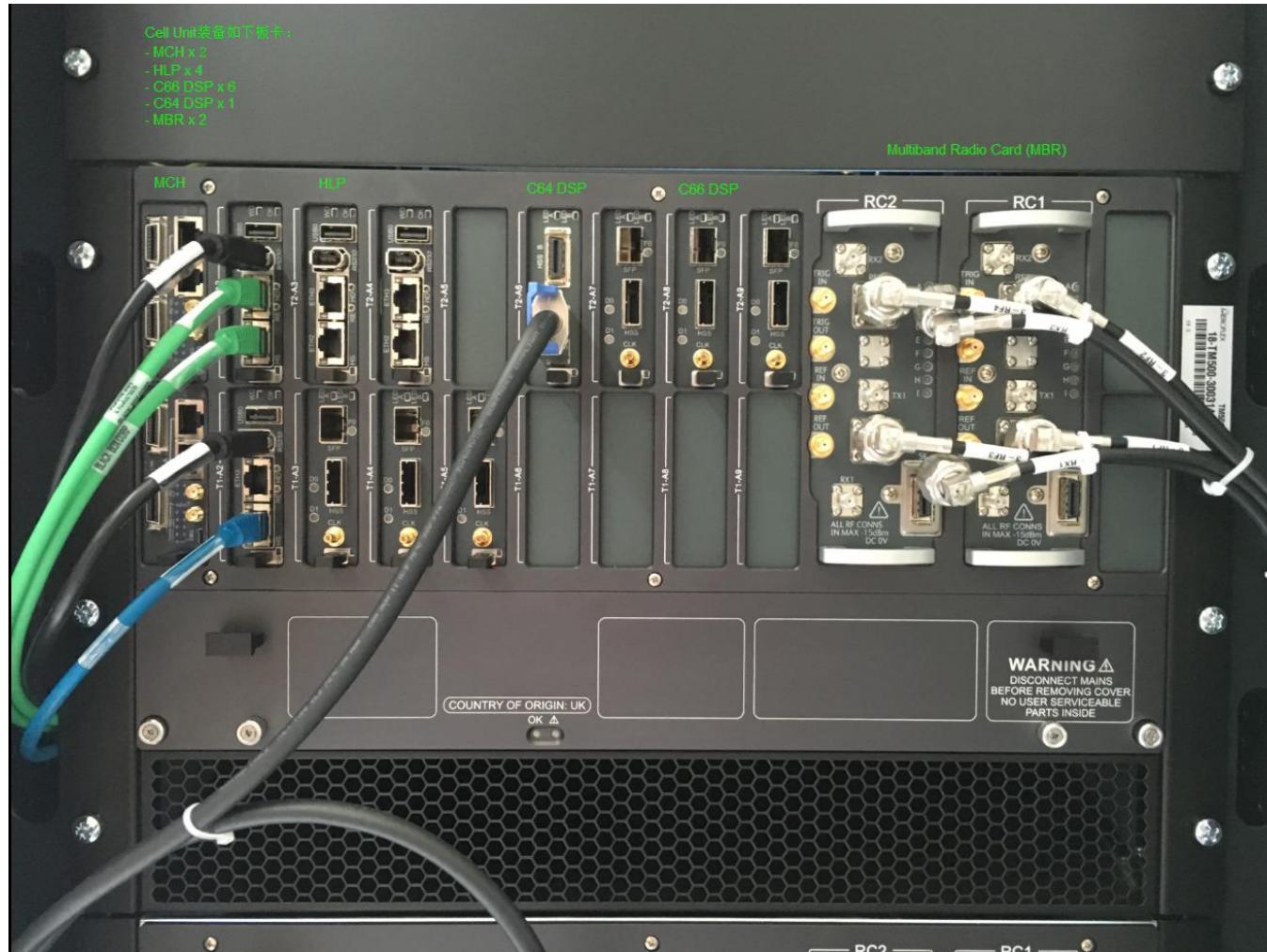
- AC (Access Concentrator): 用于集中控制其它Cell Units。



硬件架构

Cell Unit – HW104 TM500

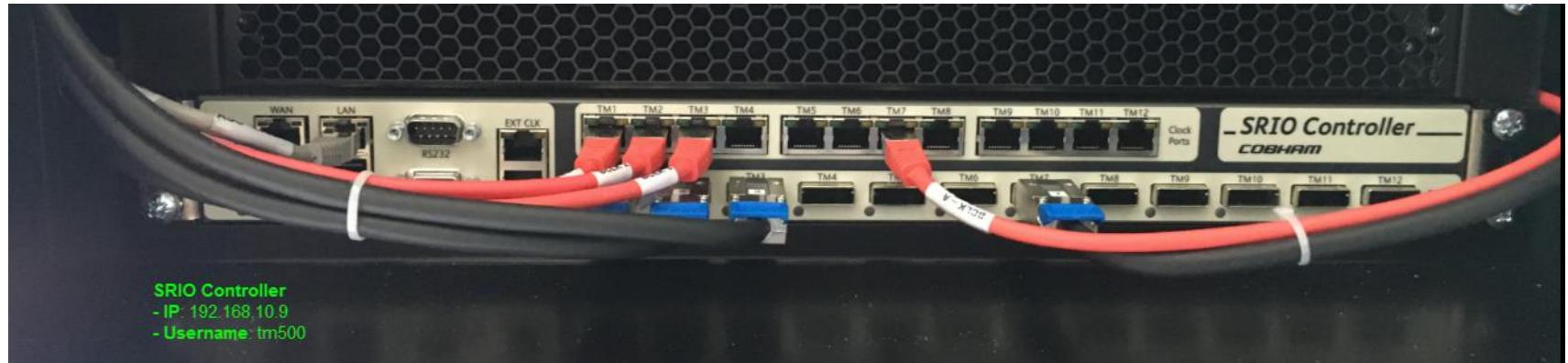
- Cell Unit: HW104 TM500, 每台Cell Unit最多支持两个小区。



硬件架构

Aeroflex SRIO Controller (ASC)

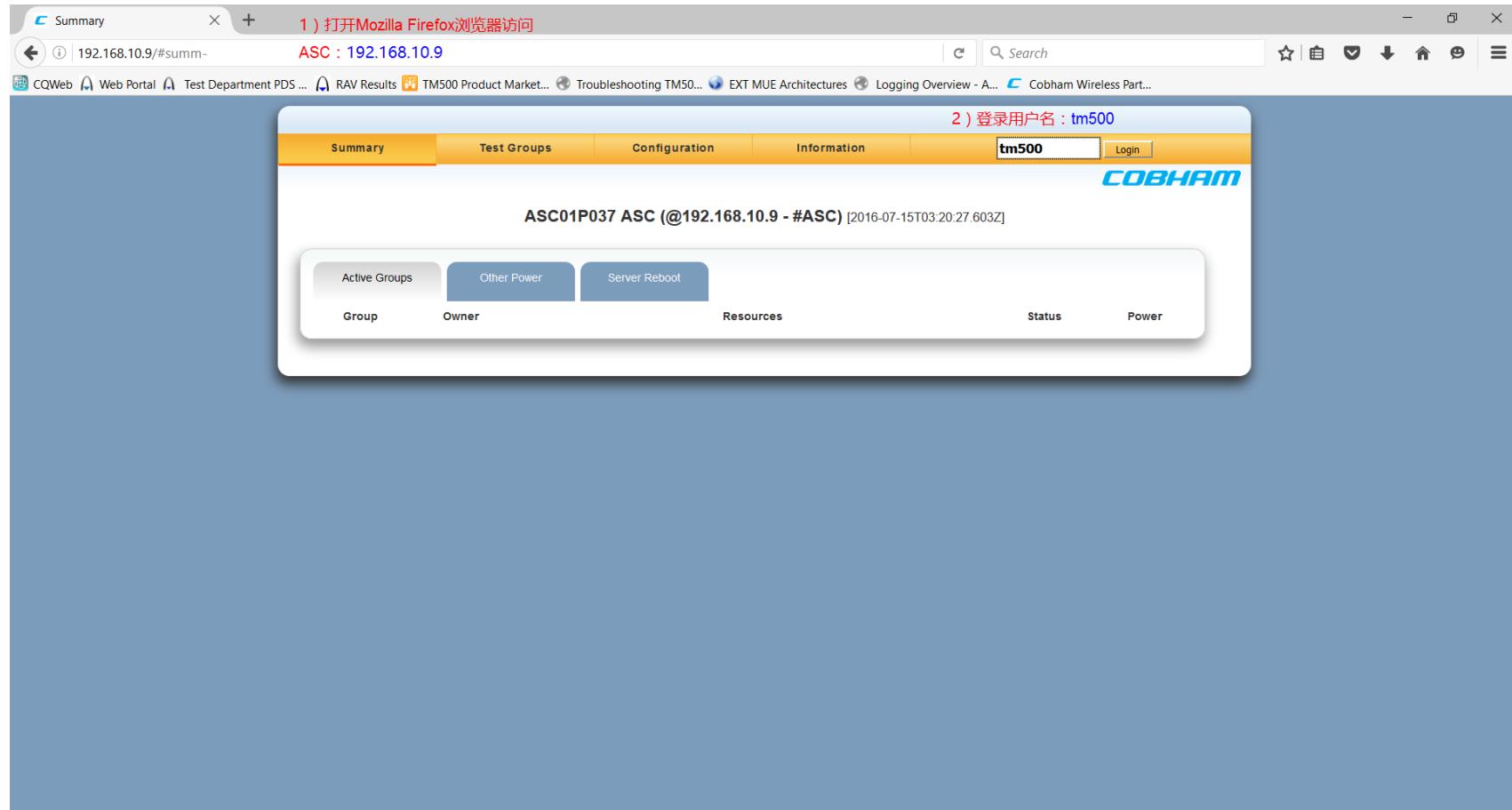
- 功能: 通过SRIO级联E500内的AC和Cell Units。
 - IP: 192.168.10.9
 - Username: tm500



硬件架构

Aeroflex SRIO Controller (ASC)

- 出于兼容性的考虑，建议选用Mozilla Firefox访问ASC管理页面。
 - “AC + 3 x Cell Units”相关的ASC配置操作步骤如下所示。



硬件架构

Aeroflex SRIO Controller (ASC)

3) 选择Test Groups页面。

4) 根据测试需求选择对应的Group ,
然后点击Lock Resources.

Viewing AllUnitsPresent	
Master:	TM500 unit "TM50X-7" (XX-TM50X-X003238)
Clock Input:	Clock Output: None

Resources	
Resource	Status
TM500 unit "TM50X-1" (XX-TM50X-X002928)	Available
TM500 unit "TM50X-2" (XX-TM50X-X003228)	Available
TM500 unit "TM50X-3" (XX-TM50X-X003146)	Available
TM500 unit "TM50X-7" (XX-TM50X-X003238)	Available

硬件架构

Aeroflex SRIO Controller (ASC)

The screenshot shows a web-based management interface for an Aeroflex SRIO Controller (ASC). The top navigation bar includes links for Test Groups, Summary, Test Groups (highlighted in orange), Configuration, Information, and Logout. The user is logged in as 'tm500'. The main content area displays the details for 'ASC01P037 ASC (@192.168.10.9 - #ASC) [2016-07-15T03:21:45.589Z]'. A red box highlights the 'Power On' button in the 'Operations' section, which contains 'Lock Resources', 'Unlock Resources', 'Power On' (highlighted), 'Power Cycle', and 'Power Off' buttons. Below this, the 'Modifications' section includes 'Edit Group', 'Add Group', and 'Remove Group' buttons, with a note '5) 点击Power On.' next to the 'Power On' button. The 'Viewing AllUnitsPresent' section shows a table with 'Master: TM500 unit "TM50X-7" (XX-TM50X-X003238)' and 'Clock Input: None' and 'Clock Output: None'. The 'Resources' section lists four TM500 units with their respective resource names and status: 'TM500 unit "TM50X-1" (XX-TM50X-X002928)', 'TM500 unit "TM50X-2" (XX-TM50X-X003226)', 'TM500 unit "TM50X-3" (XX-TM50X-X003146)', and 'TM500 unit "TM50X-7" (XX-TM50X-X003238)', all listed as 'In Use (tm500) [Used in "AllUnitsPresent"]'.

硬件架构

COBHAM

Aeroflex SRIO Controller (ASC)

The screenshot shows the 'Test Groups' page of the Aeroflex SRIO Controller (ASC) web interface. The URL is 192.168.10.9/#reso-tm500. The top navigation bar includes links for CQWeb, Web Portal, Test Department PDS..., RAV Results, TM500 Product Market..., Troubleshooting TM50..., EXT MUE Architectures, Logging Overview - A..., Cobham Wireless Part... The main content area has tabs for Summary, Test Groups (which is selected), Configuration, and Information. The Test Groups tab displays a summary of a group named 'AllUnitsPresent'. It shows the following details:

Groups:	AllUnitsPresent (In use by tm500, power ON)
Operations:	Lock Resources, Unlock Resources, Power On, Power Cycle, Power Off
Modifications:	Edit Group, Add Group, Remove Group

The 'Viewing AllUnitsPresent' section contains the following information:

Master:	TM500 unit "TM50X-7" (XX-TM50X-X003238)	Clock Input:	Clock Output:	None
---------	---	--------------	---------------	------

To the right of this section, there is a note: "完成AC/Cell Units相关的ASC配置，在AC/Cell Units完成软件加载启动成功后，即可通过TMA连接。"

The 'Resources' section lists the following units and their status:

Resource	Status
TM500 unit "TM50X-1" (XX-TM50X-X002928)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-2" (XX-TM50X-X003228)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-3" (XX-TM50X-X003146)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-7" (XX-TM50X-X003238)	In Use (tm500) [Used in "AllUnitsPresent"]

On the right side of the interface, there are two red notes:

- 备注：ASC页面的Power On/Power Cycle/Power Off可以分别上电、重启或下电这个Group定义的所有设备。
- 如果想单独对AC或某个Cell Unit进行供电操作的话，请使用PDU.

硬件架构

Aeroflex SRIO Controller (ASC)

- 如果已定义的Group不能满足测试需求的话，请根据如下步骤创建新的Group.

The screenshot shows the Cobham CQWeb Test Groups interface. The browser address bar shows the URL 192.168.10.9/#reso-tm500. The page title is "Test Groups". The top navigation bar includes tabs for "Summary", "Test Groups" (which is active), "Configuration", and "Information". A user is logged in as "tm500".

In the "Modifications" section, the "Add Group" button is highlighted with a red box. Below the modifications section, a message in red text reads: "1) 登录以后，可以根据测试需求，创建新的Group." (After logging in, you can create new groups according to testing requirements.)

The main content area displays a group named "AllUnitsPresent". It shows the following details:

- Master: TM500 unit "TM50X-7" (XX-TM50X-X003238)
- Clock Input: [empty]
- Clock Output: None

Below this, there is a "Resources" section with a table:

Resource	Status
TM500 unit "TM50X-1" (XX-TM50X-X002928)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-2" (XX-TM50X-X003228)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-3" (XX-TM50X-X003146)	In Use (tm500) [Used in "AllUnitsPresent"]
TM500 unit "TM50X-7" (XX-TM50X-X003238)	In Use (tm500) [Used in "AllUnitsPresent"]

硬件架构

Aeroflex SRIO Controller (ASC)

The screenshot shows the 'Test Groups' configuration page for the ASC01P037 unit at 192.168.10.9. The interface includes a header with tabs for Summary, Test Groups (selected), Configuration, and Information, along with a user logged in as tm500.

Groups: TM50X-7-2-3 (Created by tm500) (Not all resources available)

Operations: Lock Resources, Unlock Resources, Power On, Power Cycle, Power Off

Modifications: Edit Group, Add Group, Remove Group

Creating a new group:

- 2) 定义Group Name.** Input field: TM50X-7-1-3
- Master:** TM500 unit "TM50X-7" (XX-TM50X-X003238) (highlighted with a red box)
- 3) 选择Master TM500.**
- Clock Input:** [dropdown menu]
- Clock Output:** [dropdown menu]

Resources:

Resource + Status

- TM500 unit "TM50X-1" (XX-TM50X-X002928) -|- In Use (tm500) [Used in "AllUnitsPresent"]
- TM500 unit "TM50X-3" (XX-TM50X-X003146) -|- In Use (tm500) [Used in "AllUnitsPresent"]
- TM500 unit "TM50X-7" (XX-TM50X-X003238) -|- In Use (tm500) [Used in "AllUnitsPresent"]

Choose a resource to add to this group (highlighted with a red box)

4) 添加Group的其它成员.

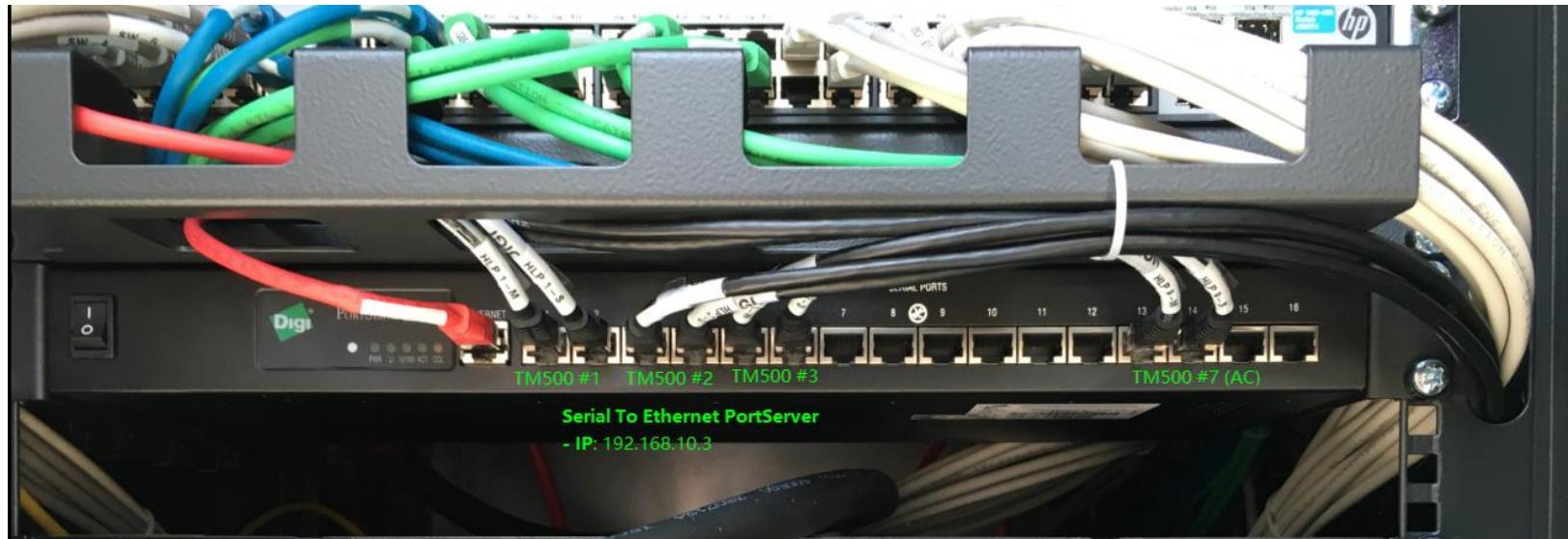
Modified

Save Cancel

硬件架构

Serial To Ethernet PortServer

- E500内部每台TM500的Master HLP和Slave 1 HLP的串口均已连接串口转网口的PortServer，通过Telnet工具（例如PuTTY）就可以访问对应TM500的串口。

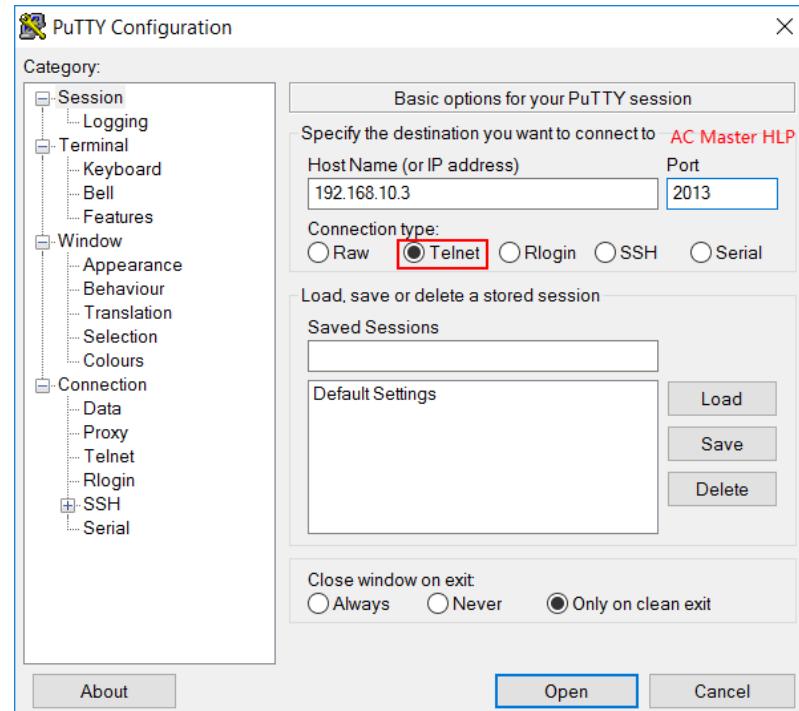


硬件架构

Serial To Ethernet PortServer

- PortServer IP: 192.168.10.3
- TM500 Ports

Port	tm500_1	tm500_2	tm500_3	tm500_4	tm500_5	tm500_6	tm500_7 (AC)
Master HLP	2001	2003	2005	2007	2009	2011	2013
Slave 1 HLP	2002	2004	2006	2008	2010	2012	2014



硬件架构

D1000 Core & Edge Pair

- 功能：业务服务器，发起上下行灌包，支持的业务包括FTP/UDP/VoLTE/PING/RTSP/HTTP等等。
 - D1000 Core: 模拟服务器，IP: 192.168.10.200
 - D1000 Edge: 模拟客户端，IP: 192.168.10.201



Network Switch

- 功能：HP1920-48G交换机通过网线级联E500内部各设备。
 - IP: 192.168.10.254
 - Username: admin, Password: September21



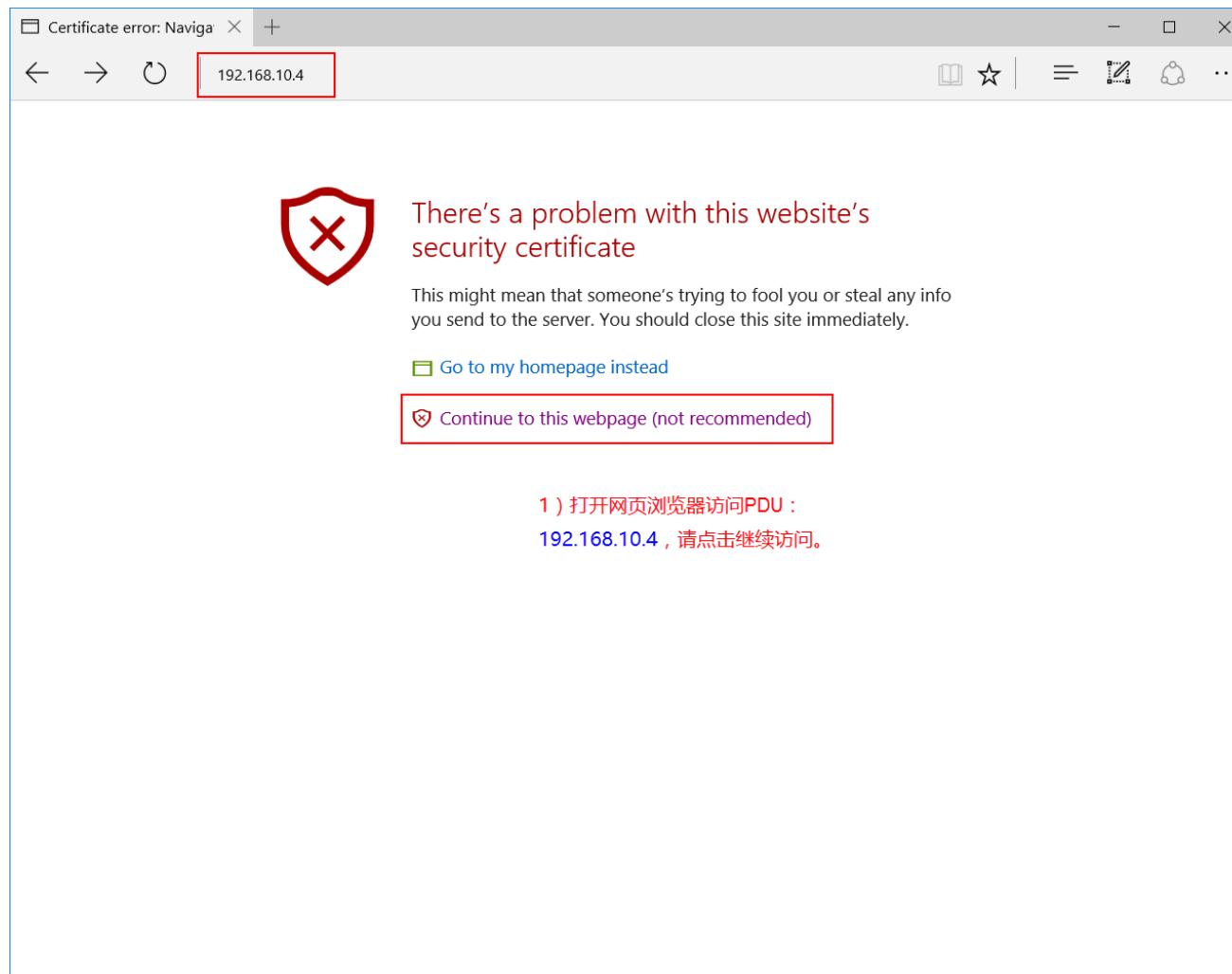
硬件架构

Power Distribution Unit (PDU)

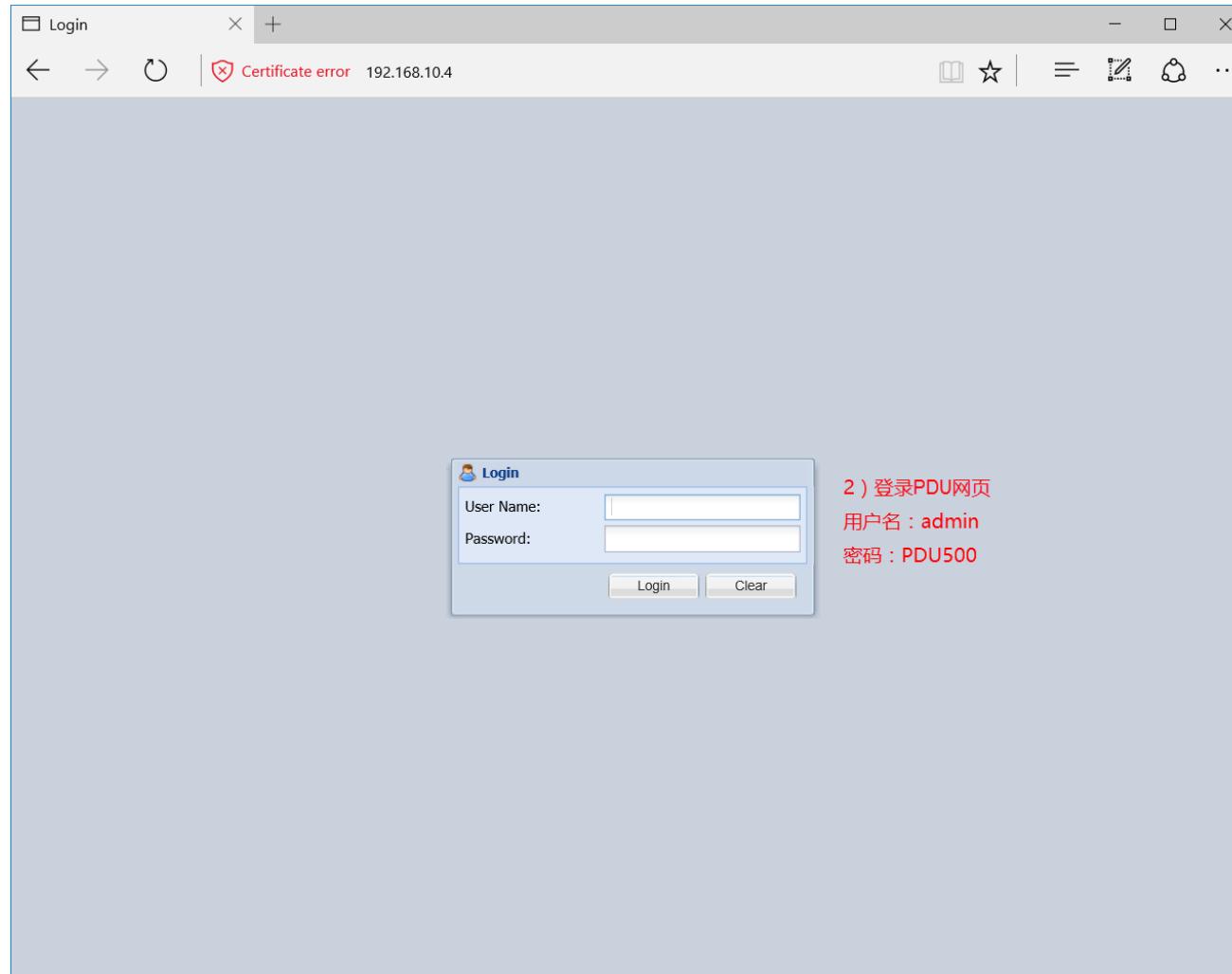
- 功能：远程控制E500内部各设备上电、下电和重启。
 - IP: 192.168.10.4
 - Username: admin, Password: PDU500



Power Distribution Unit (PDU)



Power Distribution Unit (PDU)



硬件架构

Power Distribution Unit (PDU)

3) 点击打开Outlets 页面。

#	Name (Label)	Status	Current	Active Power	Power Factor	Non Critical	Receptacle Type
1	ASC (SRI0 Controller) (1)	on	0.0 A	0 W	1.00	False	IEC 60320 C19
2	TM500_3 (2)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
3	TM500_4 (3)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
4	TM500_7(AC) (4)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
5	Digi_portserver (5)	on	0.1 A	11 W	0.53	False	IEC 60320 C19
6	TM500_1 (6)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
7	Shenick_Edge (7)	on	0.7 A	165 W	0.96	False	IEC 60320 C19
8	TM500_5 (8)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
9	HP_Switch (9)	on	0.1 A	16 W	0.48	False	IEC 60320 C19
10	TM500_2 (10)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
11	Shenick_Core (11)	on	0.9 A	197 W	0.96	False	IEC 60320 C19
12	TM500_6 (12)	off	0.0 A	0 W	1.00	False	IEC 60320 C19

4) 请根据需求勾选对应的设备并点击如下按钮 :

- On : 上电
- Off : 下电
- Cycle : 下电10秒后再上电。

Switch outlets 2, 4, 6 and 10

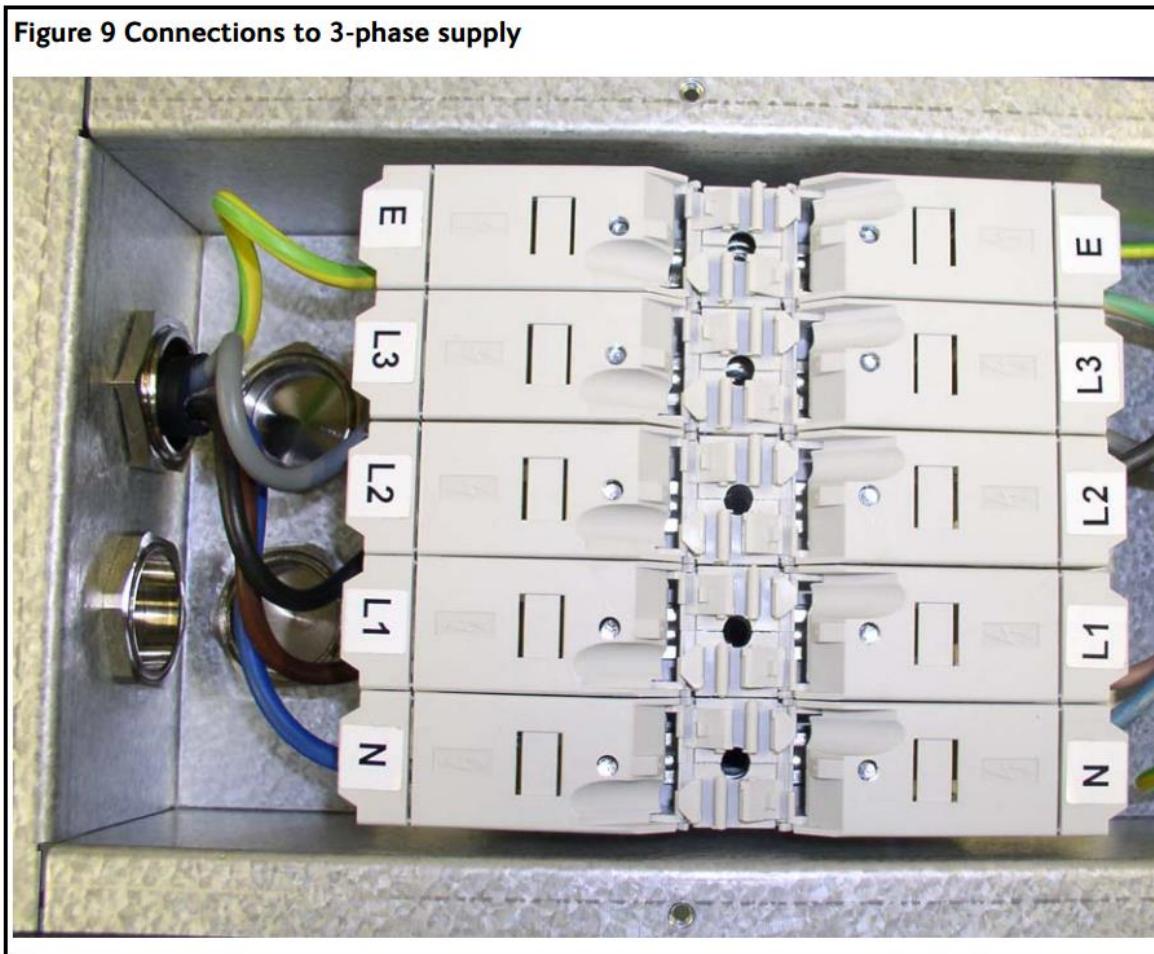
my PX (192.168.10.4) Administrator (admin) Last Login: 1/1/00 12:13 AM 1/1/00 12:19 AM

- 380V 3相供电， 29 U cabinet每相电流最大不超过9A， 最大功率标称8kW， 从实际测试来看， 最大功率不超过5kW。

Table 4 Power Supply 380-415 VAC 3P+N+E

	29U	38U
AC frequency range	50–60 Hz	50–60 Hz
Maximum input current	9 A/phase at 400 V	15 A/phase at 400 V
Power	8 kVA	10 kVA
Fuse rating	32 A/phase in installation disconnection device. T10AH250V cartridge type 5 mm x 20 mm in individual cell units.	32 A/phase in installation disconnection device. T10AH250V cartridge type 5 mm x 20 mm in individual cell units.

- E500 380V电源连接线位于机柜的顶端。



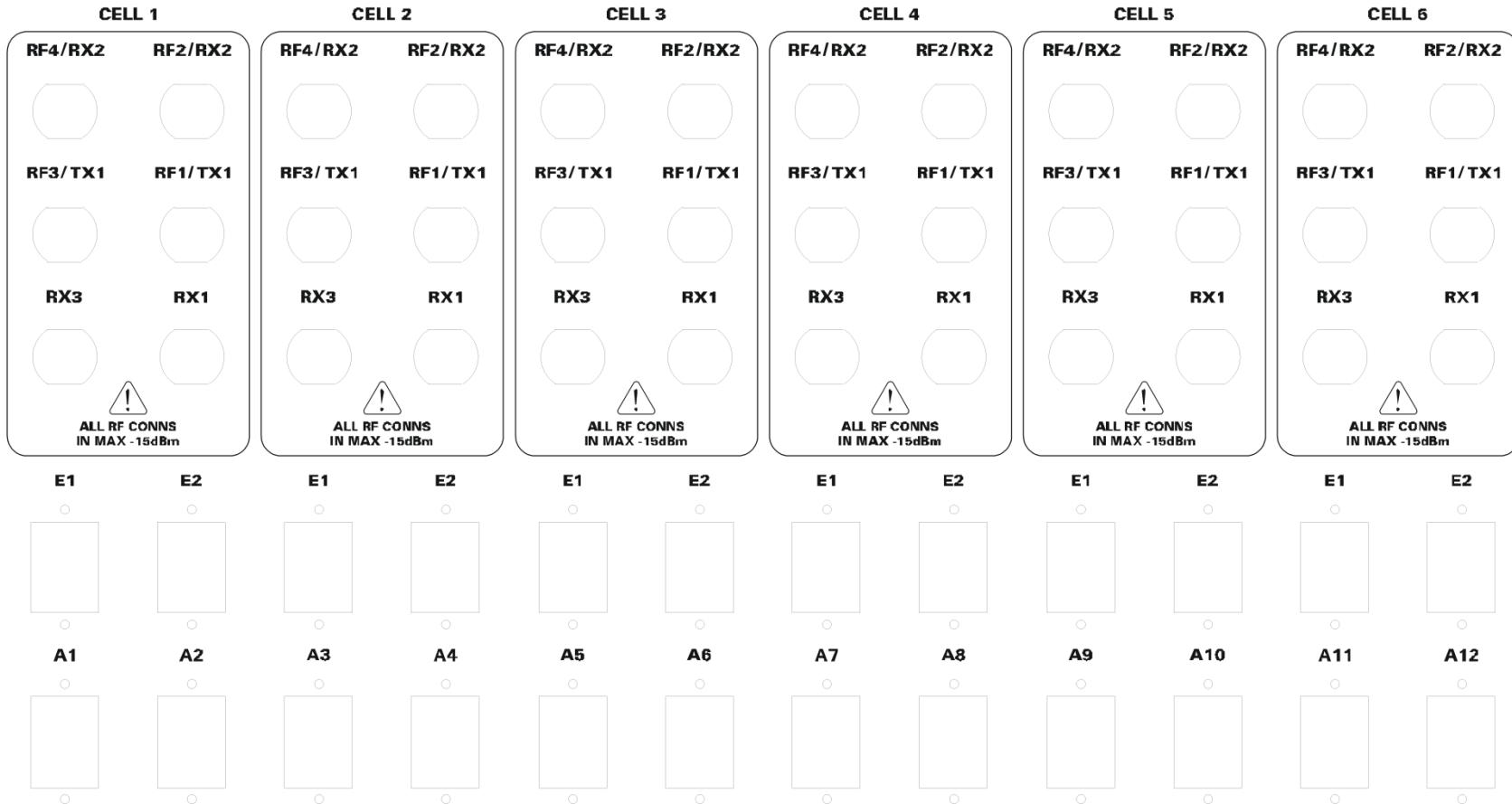
- E500控制电脑至少要求8GB内存，否则容易导致TM500客户端TMA异常。

Table 8 Requirements for control PC

Feature	Recommended specification
Processor	Intel® i7 Processor Quad Core™ with Hyper-Threading, i7-870 or equivalent.
Operating system	Minimum: Windows Vista (64 bit). Recommended: Windows 7 (64 bit). Windows.NET 4.5.1 must also be installed.
Memory	8 GB
Display	1600 x 900 pixels
Hard disk space	250 GB
Ethernet	1000 Base-T

连接面板

Connection Panel



Connection Panel

- 连接面板包含两部分

- RF Interconnection

- *Cell Unit n* 对应 **TM500 #n**，每台 TM500 支持两个小区。
 - TM500 射频卡支持两种方式：Combined Mode 和 Dedicated Mode。默认的 TM500 射频卡和连接面板射频口的连接方式是 Combined Mode。
 - 连接面板射频口和 TM500 射频卡的对应关系，请参阅后续 *Table 9* 和 *Table 10*.

- Ethernet Connection

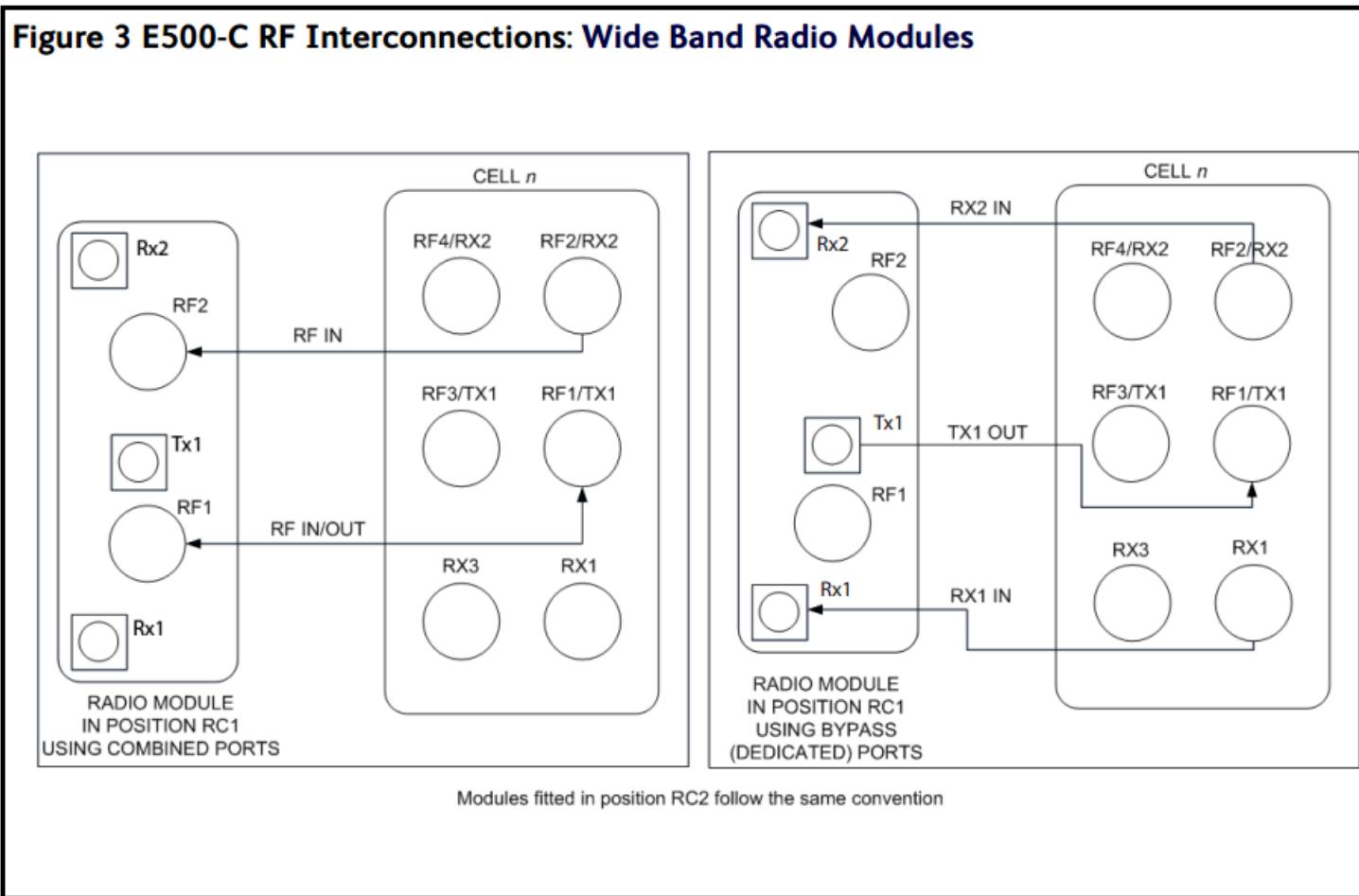
- A1 或 A2 或 Cell 1-6 E1：用于连接 E500 控制电脑。
 - 同时使用 D1000 Core 10G/2 和 Edge 10G/1 时，请务必用网线连接 A11 和 A12。
 - A3：使用 AC + Cell Units 或 独立使用 TM500 #1 时，用于连接核心网的 P-GW。PPPoE 和 Internal Server 对应的 Interface 分别为 **10/1/0** 和 **20/1/1**。
 - A4：独立使用 TM500 #2 时，用于连接核心网的 P-GW。PPPoE 和 Internal Server 对应的 Interface 分别为 **11/1/0** 和 **21/1/1**。
 - A5：独立使用 TM500 #3 时，用于连接核心网的 P-GW。PPPoE 和 Internal Server 对应的 Interface 分别为 **12/1/0** 和 **22/1/1**。

Connection Panel

- 同时使用D1000 Core 10G/1和Edge 10G/2时，请务必用网线连接A9和A10。
 - Cell 1 E2: 使用AC + Cell Units或独立使用TM500 #1时，用于连接核心网的P-GW.
 - PPPoE和Internal Server对应的Interface分别为30/1/1和40/1/0.

MBR Combined & Dedicated Connections

Figure 3 E500-C RF Interconnections: Wide Band Radio Modules



Socket & RF Port Mapping

Table 9 Narrow band radio card connections and multi-band card using combined ports

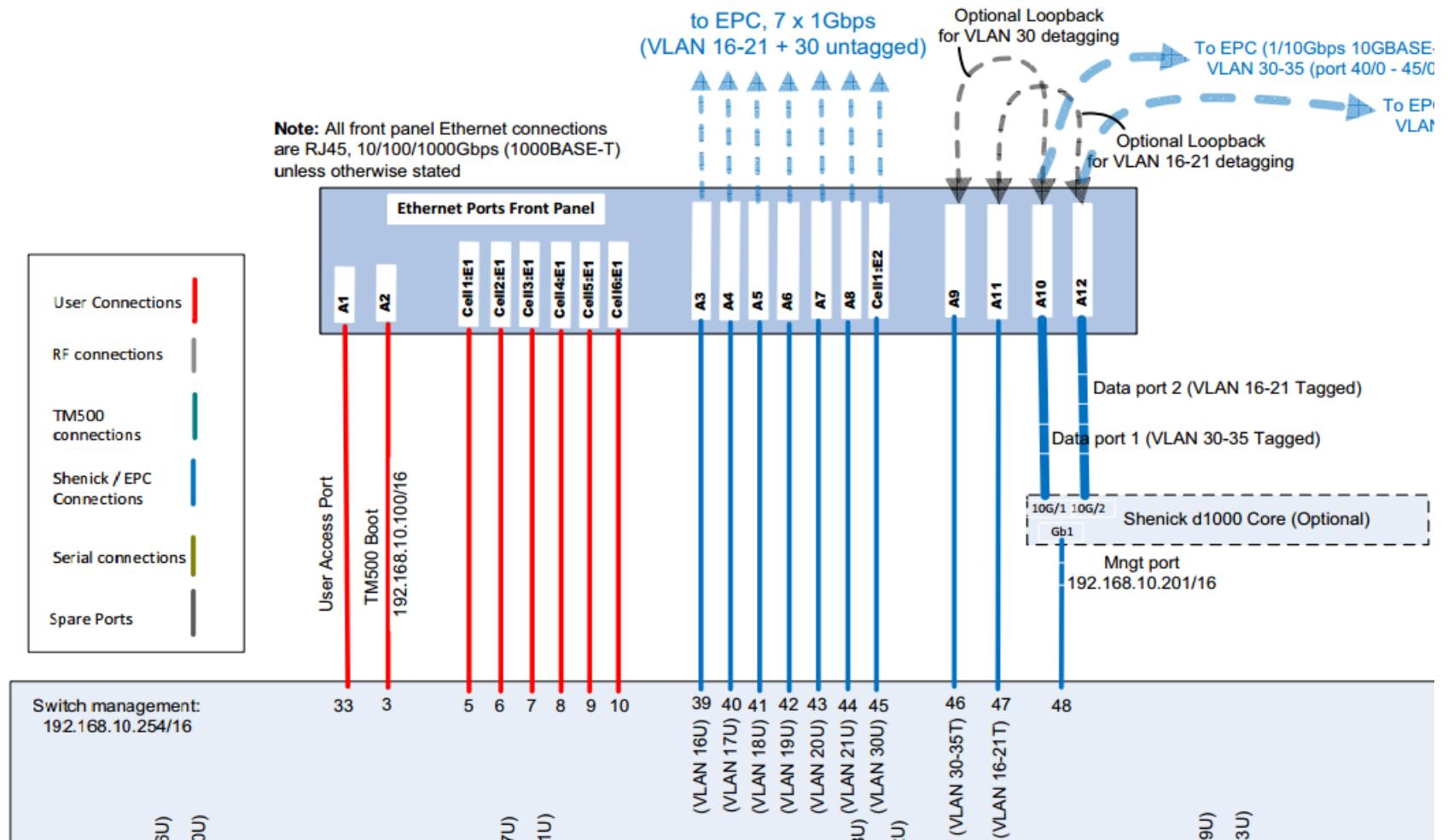
Socket	Type	Description
RF1/TX1	N female	Radio card 1 RF in/out
RF2/RX2	N female	Radio card 1 RF in
RF3/TX1	N female	Radio card 2 RF in/out
RF4/RX2	N female	Radio card 2 RF in
RX1	N female	Not used
RX3	N female	Not used

Table 10 Multi-band radio card connections using “bypass” ports

Socket	Type	Description
RF1/TX1	N female	Radio card 1 TX1 RF out
RF2/RX2	N female	Radio card 1 RX2 RF in
RF3/TX1	N female	Radio card 2 TX1 RF out
RF4/RX2	N female	Radio card 2 RX2 RF in
RX1	N female	Radio card 1 RX1 RF in
RX3	N female	Radio card 2 RX3 RF in

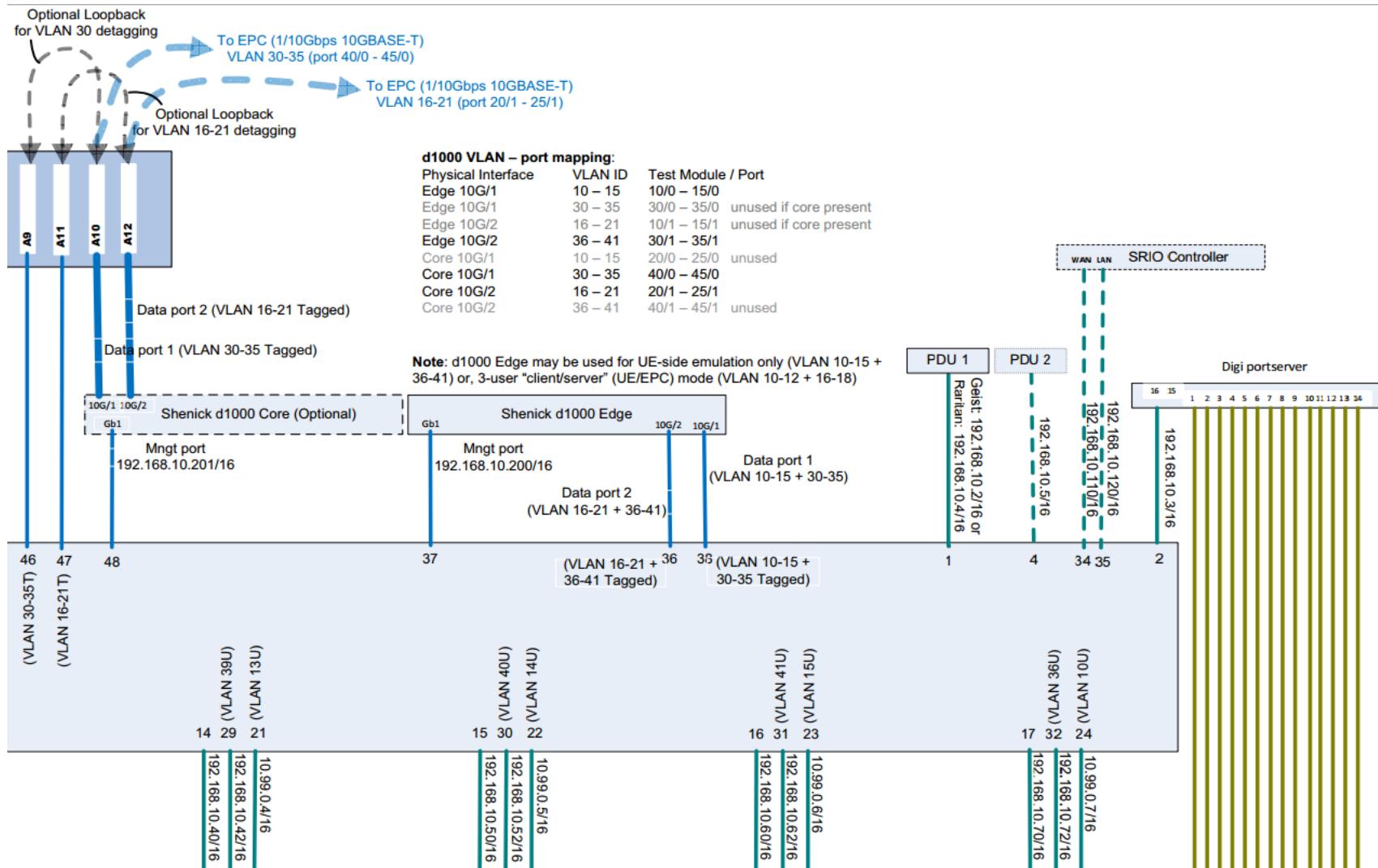
Ethernet connections

Connection Panel



Ethernet connections

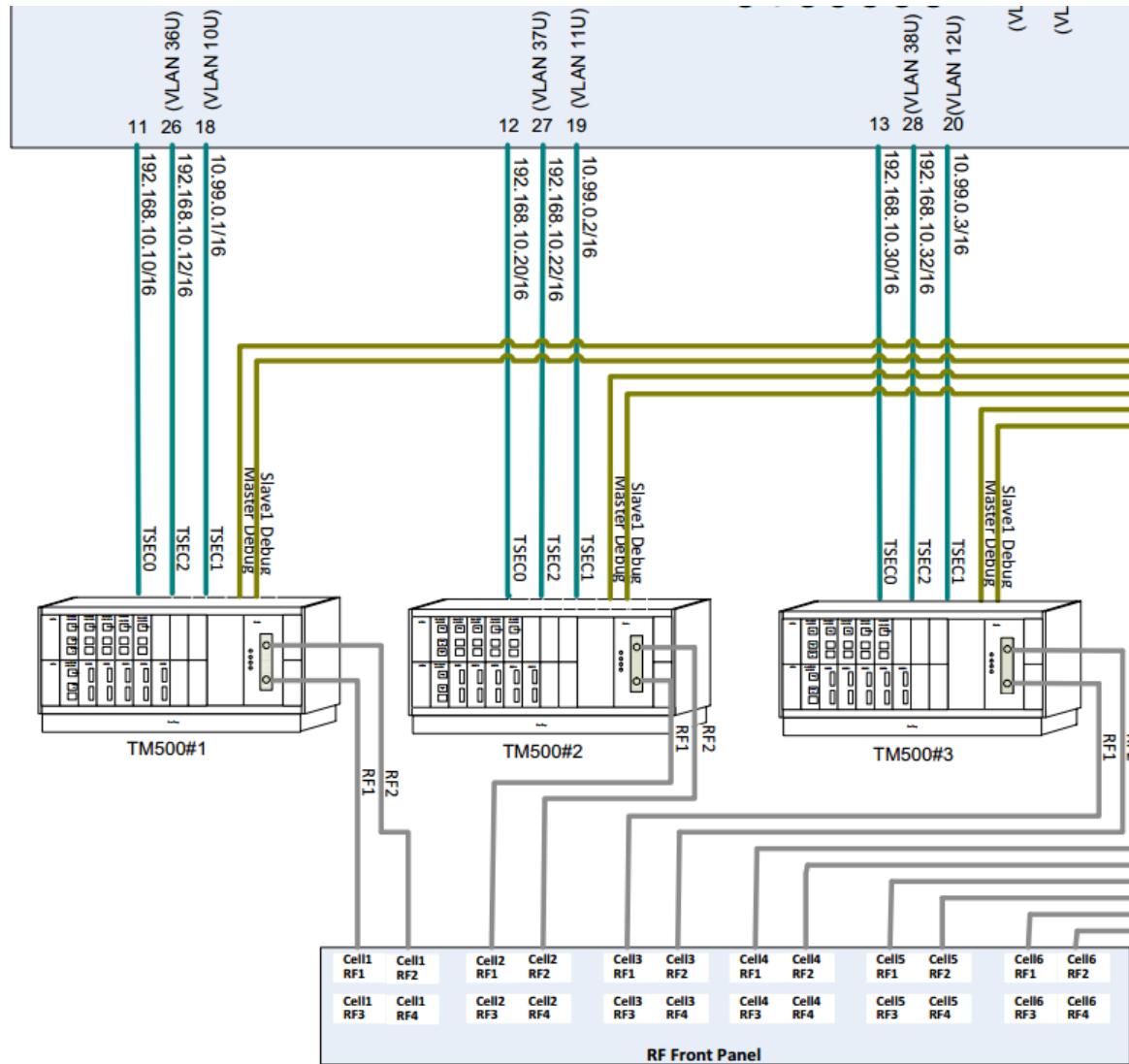
D1000 Core & Edge Pair



Ethernet connections

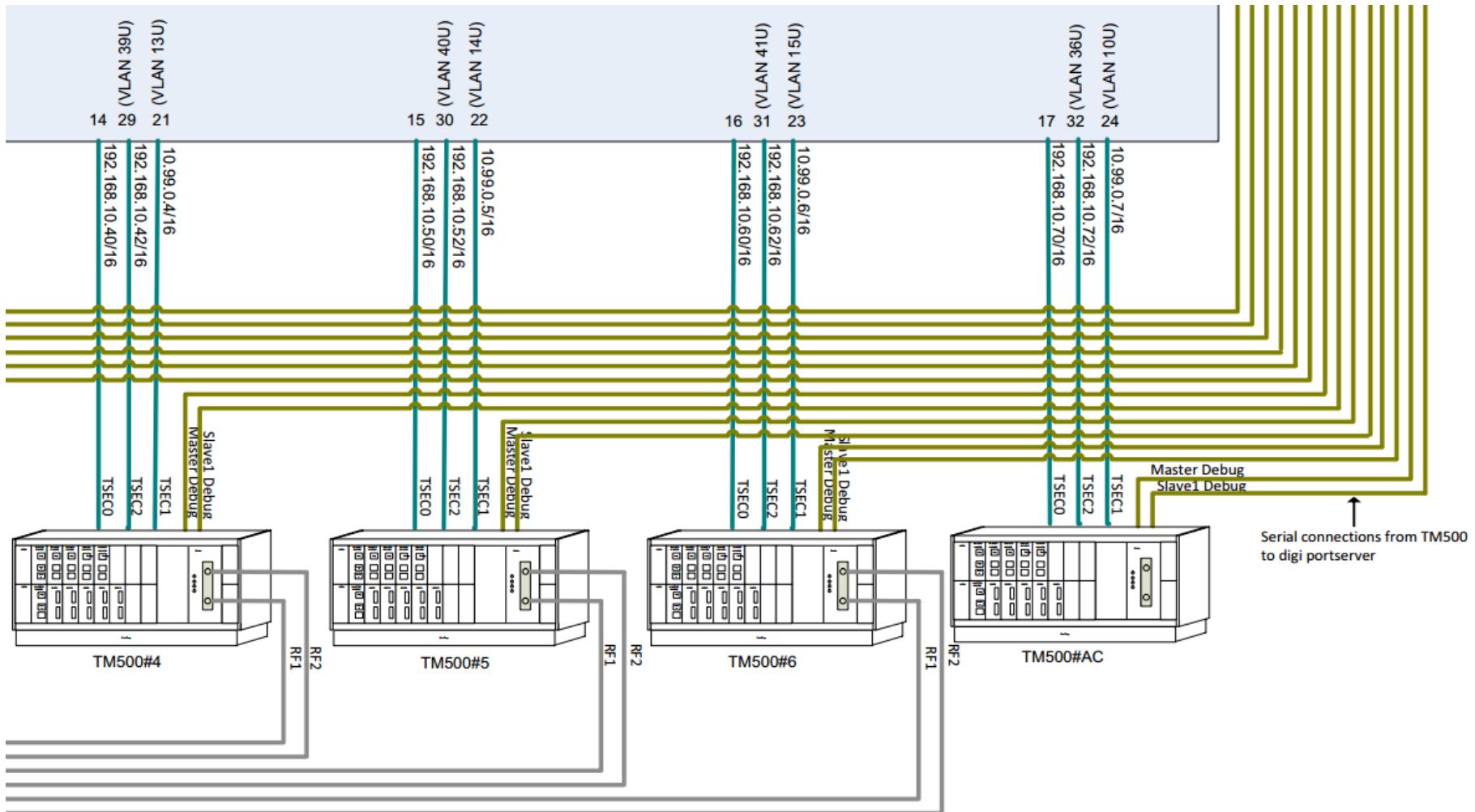
COBHAM

TM500#1 ~ #3



Ethernet connections

TM500#4 ~ #7



Ethernet connections

Socket	Type	Description	VLAN ID
A1, A2	RJ45 (Ethernet 1000BASE-T)	User access ports for control of the E500 system.	1 [default] untagged E500 Control PC
A3	RJ45 (1000BASE-T)	EPC connection for Partition / User 1 (d1000 interface 20/1/1).	16 untagged AC or TM500 #1 EPC: 10/1/0 & 20/1/1
A4	RJ45 (1000BASE-T)	EPC connection for Partition 2 (d1000 interface 21/1/1).	17 untagged TM500 #2 EPC: 11/1/0 & 21/1/1
A5	RJ45 (1000BASE-T)	EPC connection for Partition 3 (d1000 interface 22/1/1).	18 untagged TM500 #3 EPC: 12/1/0 & 22/1/1
A6	RJ45 (1000BASE-T)	EPC connection for Partition 4 (d1000 interface 23/1/1).	19 untagged
A7	RJ45 (1000BASE-T)	EPC connection for Partition 5 (d1000 interface 24/1/1).	20 untagged
A8	RJ45 (1000BASE-T)	EPC connection for Partition 6 (d1000 interface 25/1/1).	21 untagged
A9 → 连接A10端口	RJ45 (1000BASE-T)	d1000 Core / EPC loopback (in) [connect to A10 to enable Cell1:E2].	30-35 Tagged

Ethernet connections

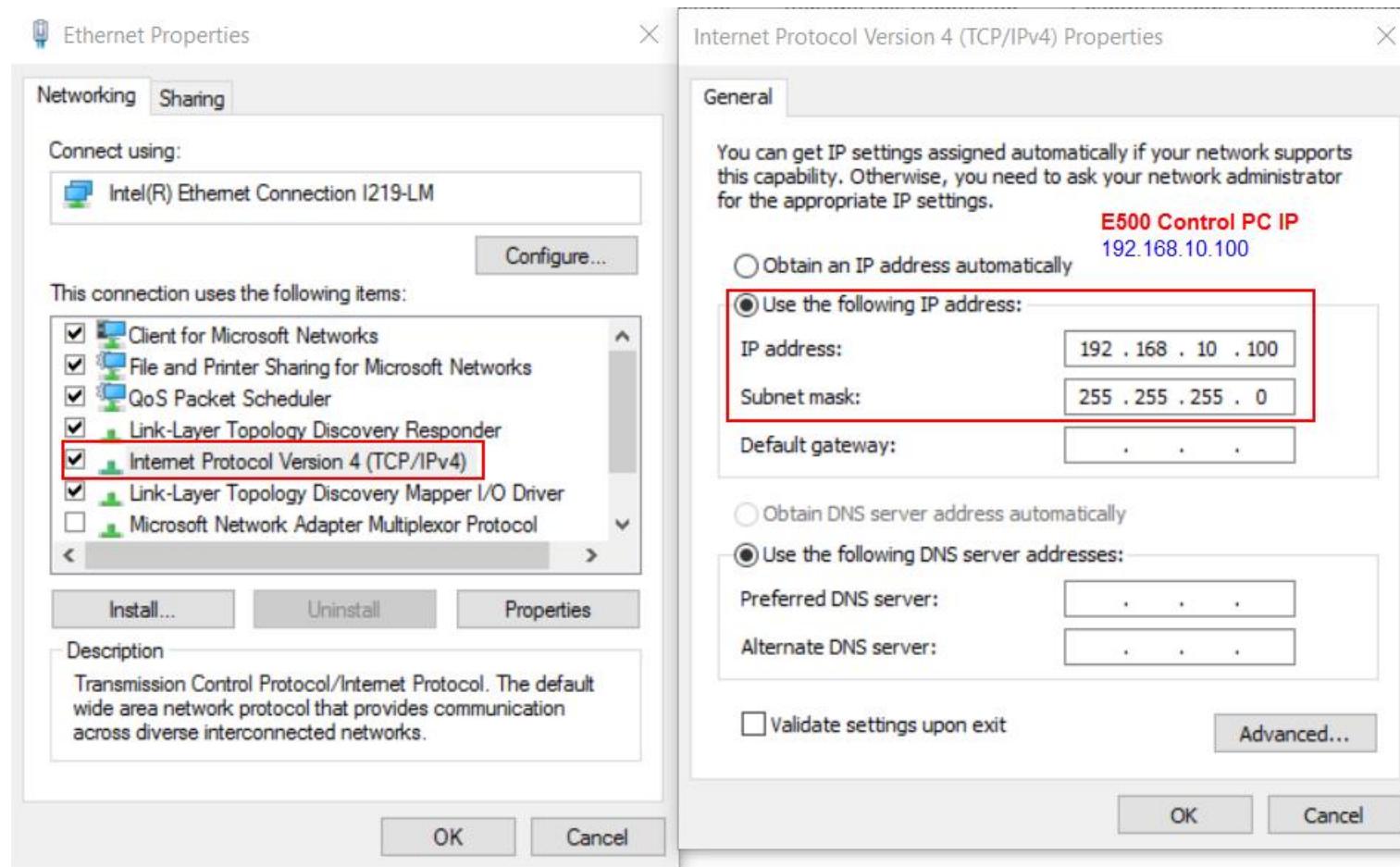
COBHAM

A10 → 连接A9端口	RJ45 (10GBASE-T)	d1000 Core - EPC secondary tagged trunk. Available for customer connection to external EPC-side switch with tagged traffic for Partitions 1-6 [interface 40/1/0-45/1/0]. Alternatively, connect with patch cable to A9 for internal de-tagging of VLAN 30 to Cell1:E2.	30-35 tagged 如果采用Edge 10G/2 & Core 10G/1 , 请在 Connection Panel 用网线串联A9 & A10端口。 (可选)
A11 ←	RJ45 (1000BASE-T)	d1000 Core / EPC loopback (in) [connect to A12 to enable A3-A8].	16-21 Tagged 默认采用Edge
A12 ←	RJ45 (10GBASE-T)	d1000 Core - EPC primary tagged trunk. Available for customer connection to external EPC-side switch with tagged traffic for Partitions 1-6 [interface 20/1/1-25/1/1]. Alternatively, connect with patch cable to A11 for internal de-tagging to A3-A8.	16-21 tagged 10G/1 & Core 10G/2, 请在 Connection Panel 用网线串联A11 & A12 两个端口。
Cell1-6: E1	RJ45 (1000BASE-T)	Spare user access ports for the E500 system (on default VLAN).	1 [default] untagged E500 Control PC
Cell1: E2	RJ45 (1000BASE-T)	EPC connection for second 1Gpbs link for Partition 1 (d1000 interface 40/1/0).	30 untagged AC or TM500 #1 EPC: 30/1/1 & 40/1/0 (Edge 10G/2 & Core 10G/1)
Cell2-6: E2	RJ45 (unconnected)	Reserved for future use.	-

控制电脑设置



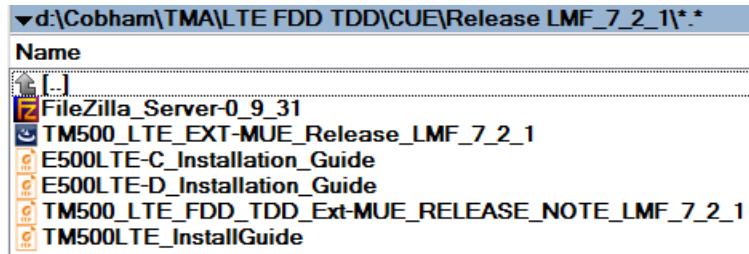
- 配置E500控制电脑IP地址： 192.168.10.100/24.



- 请**务必关闭**控制电脑的防火墙
- [.NET Framework 4.5](#)或更高的版本
- TM500客户端Test Mobile Application (TMA)
- FileZilla Server
- [PuTTY](#)（或其它Serial/SSH/Telnet工具）
- RDA客户端（diverisifEye/TeraVM）
- Python
- [Wireshark](#)
- Microsoft Excel
- 文本编辑器（例如UltraEdit或[Notepad++](#)）
- [Mozilla Firefox](#)
- [Foxit](#)
- [7-zip](#)

Test Mobile Application (TMA)

- 请咨询TM500 FAE获取最新的TM500软件版本。
- TM500软件安装包一般包含如下文件（以LMF7.2.1为例）
 - **FileZilla Server:** TM500通过FileZilla Server从它的控制电脑上加载相关软件。
 - **TM500_LTE_EXT-MUE_Release_LMF_7_2_1:** TM500软件
 - **Release Note:** 当前TM500软件版本支持的特性和功能，以及修复的问题等等。
 - **E500/TM500安装手册:** 包括供电需求、如何配置和修改TM500 IP、如何升级固件以及查看或安装license.



Test Mobile Application (TMA)

- TMA软件安装采用默认安装， 安装过程中一直选择下一步即可。
- 默认安装路径
 - 64位操作系统： C:\Program Files (x86)\Aeroflex\TM500\LTE - LMF 7.2.1\

备注： Win7以上的操作系统， C:\Program Files\或C:\Program Files (x86)\路径下的操作都需要管理员权限， 如果需要的话， 可以考虑把安装路径改为C:\Aeroflex\...

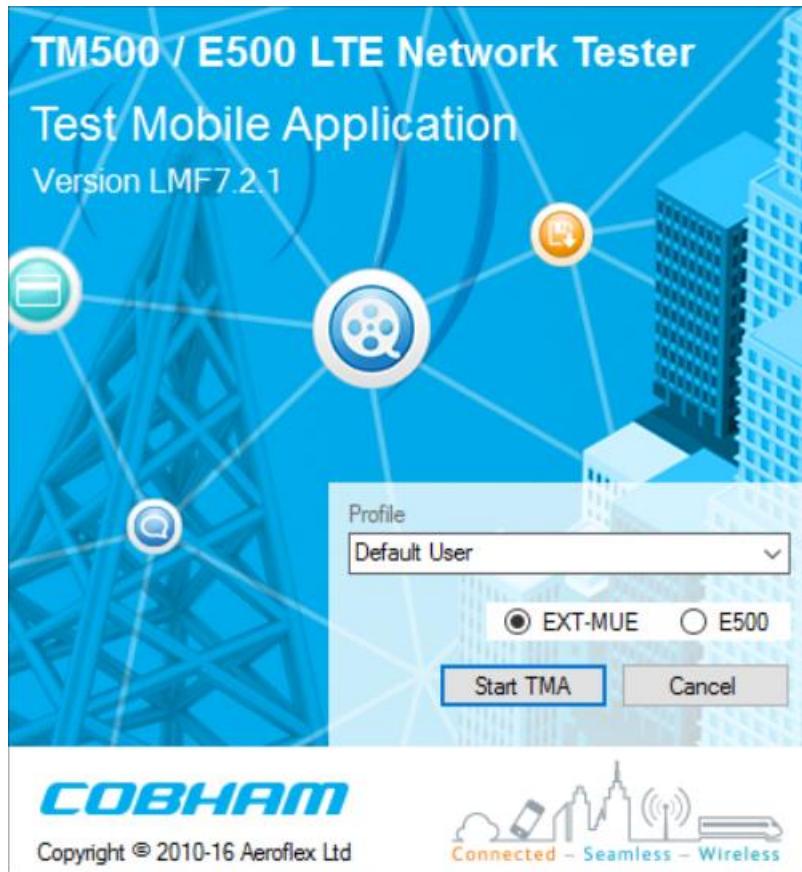


Test Mobile Application (TMA)

- TMA安装路径包含六个文件夹
 - **diverifEye**: Provisioning模板，用于生成RDA脚本。
 - **Documentation**: TM500相关的帮助文档，包括TM500/E500安装手册、EXT-MUE/E500 TMA用户手册、Command Reference Manual (CRM)、Measurement Reference Manual以及diverifEye Reference Manual等等。
 - **HSDL**: TM500 DSP/HLC log抓取和解析工具。
 - **ppc_pq**: TM500软件。
 - **Test Mobile Application**: TM500客户端（TMA.exe）。
- 通过开始菜单或Test Mobile Application文件夹打开TMA.exe，请选择EXT-MUE界面。

备注：E500界面将在其它文档进一步介绍。

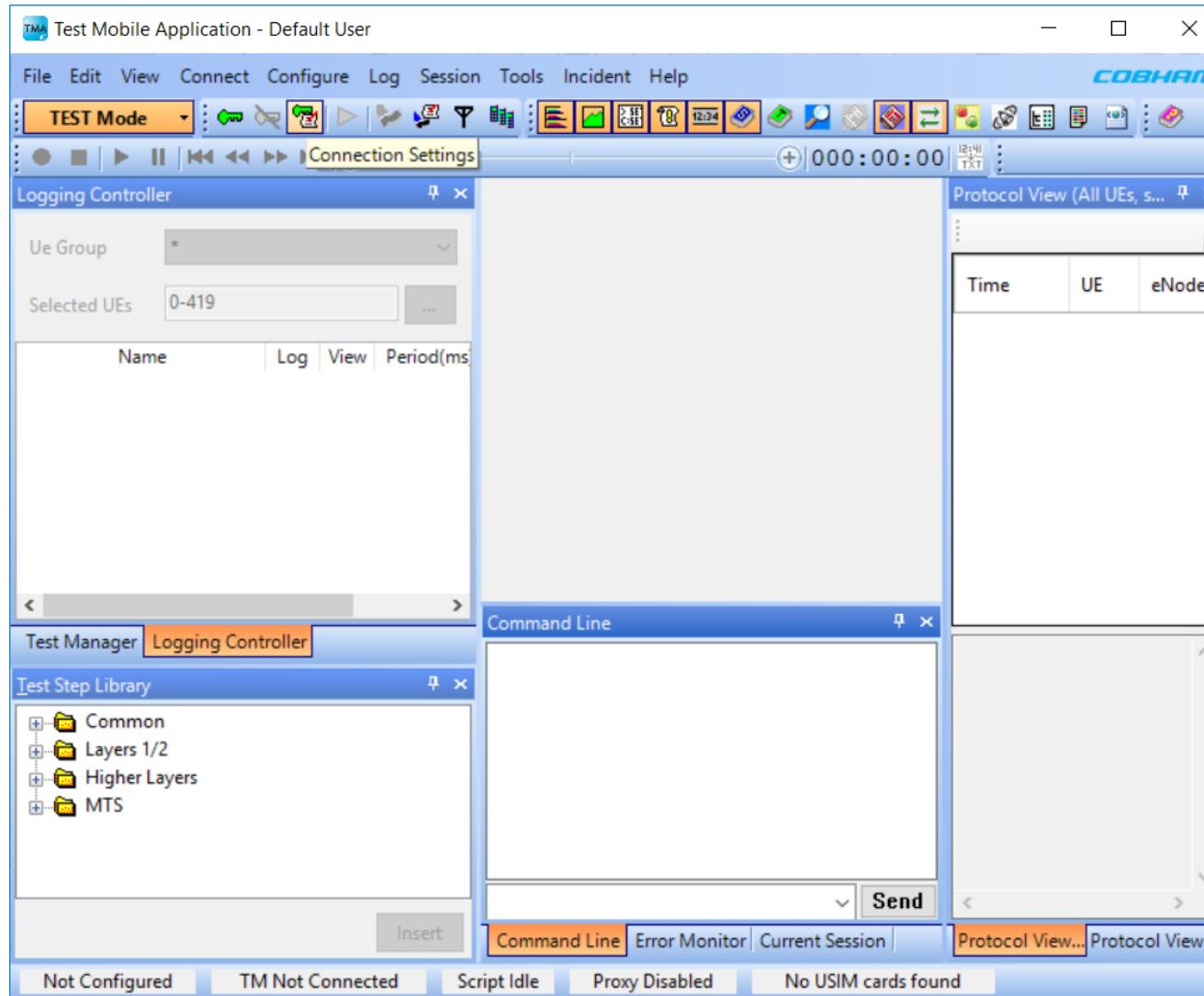
- **Profile**可以用默认的*Default User*, 也可以自定义一个新的profile.



Test Mobile Application (TMA)

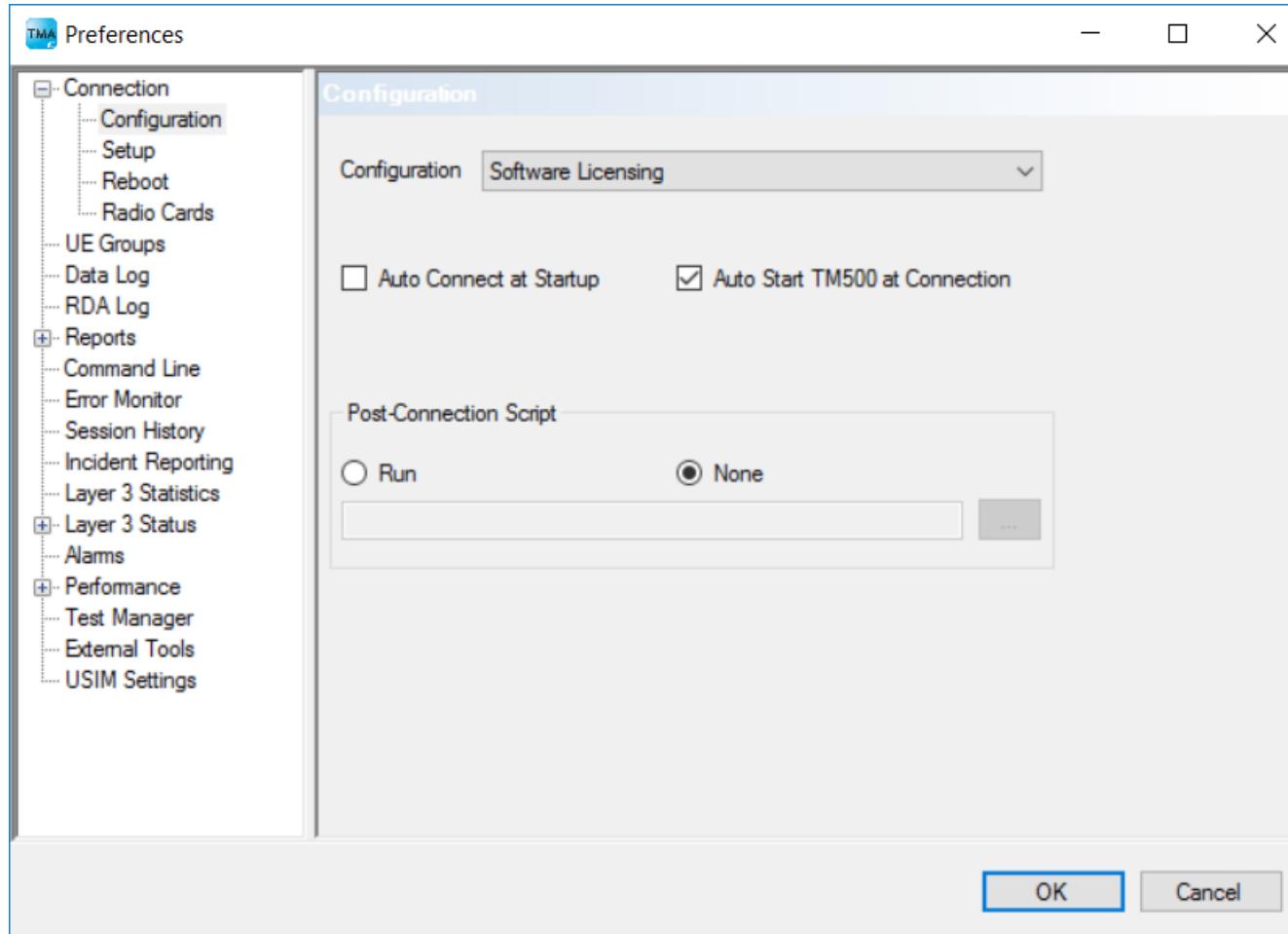
COBHAM

Connection Settings



Preferences

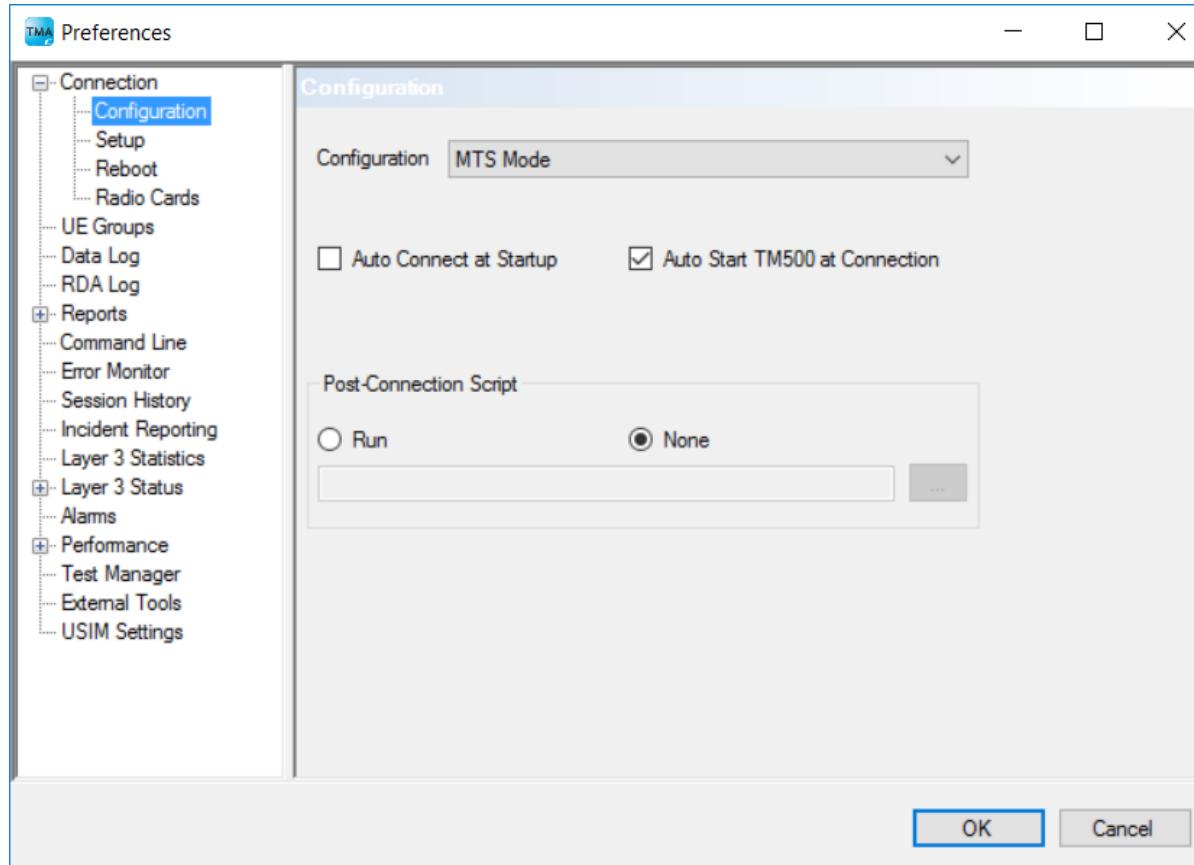
- 点击左上角Connection Settings图标，打开Preferences界面。



Preferences – Configuration

- 主要更新如下默认配置

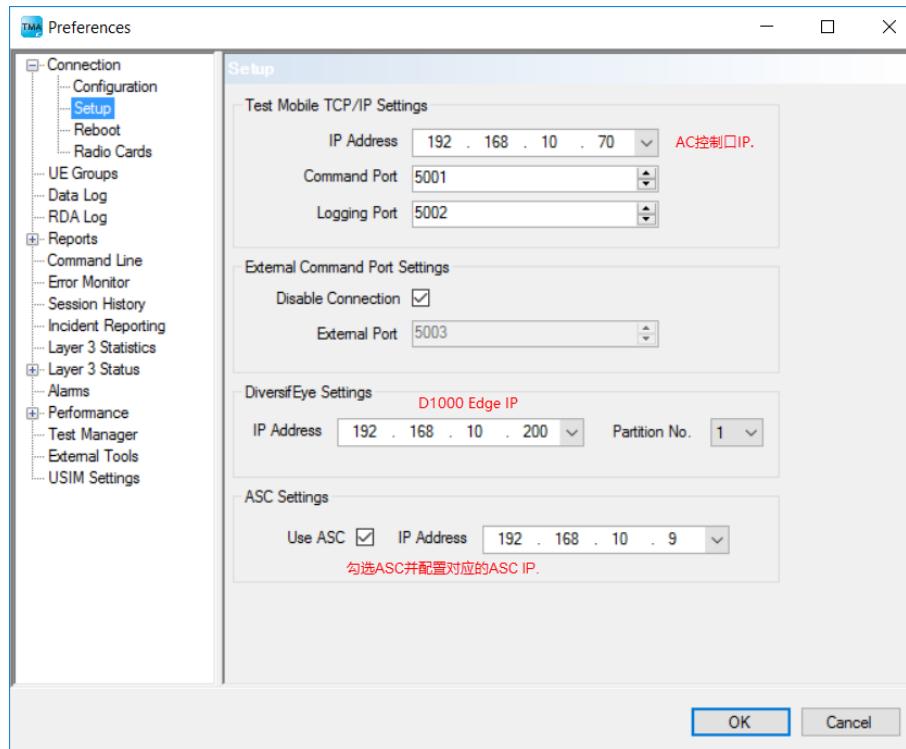
– **Configuration:** 请把默认模式“Software Licensing”更新为“MTS Mode”。



Preferences – Setup

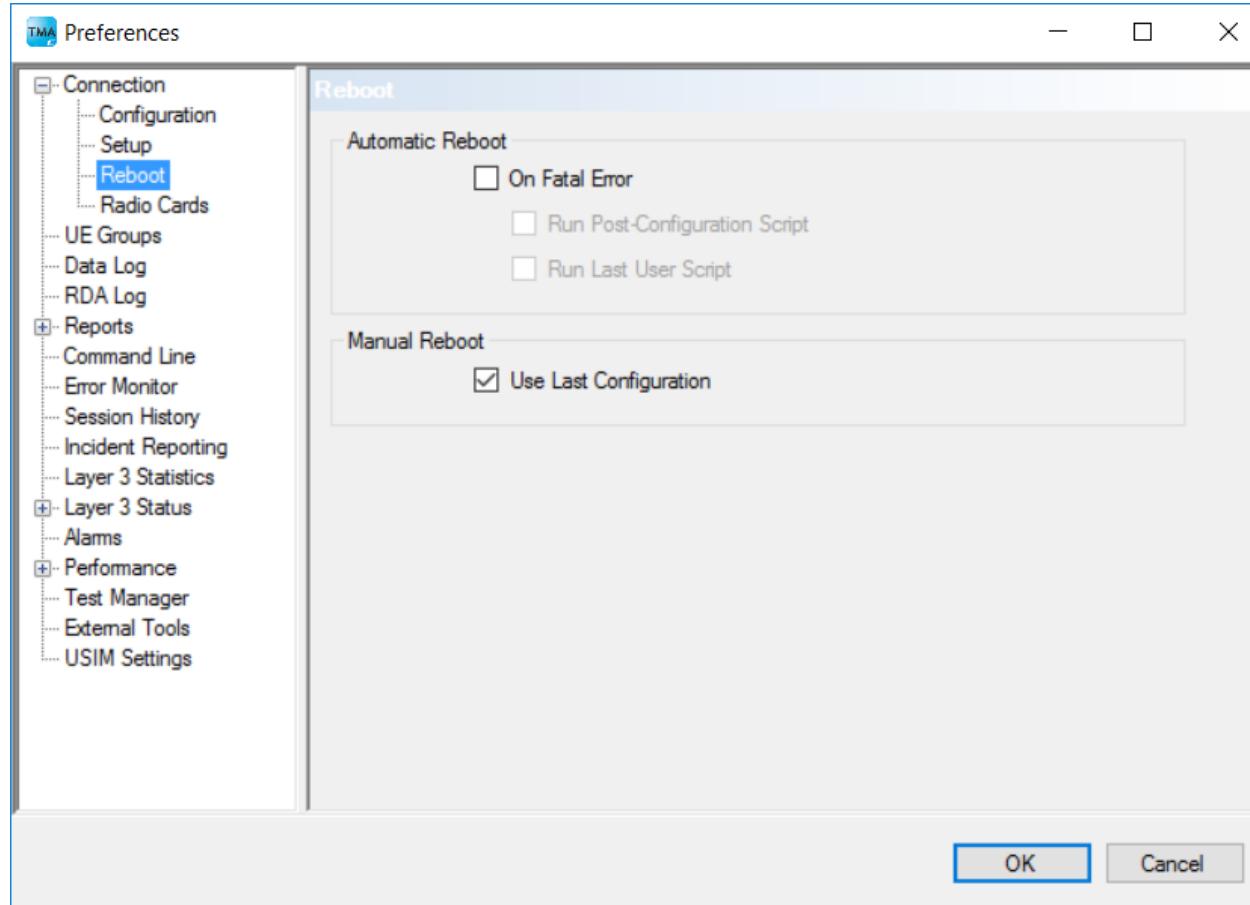
- **Setup**

- Test Mobile TCP/IP Settings – IP Address: *192.168.10.70* (AC).
- DiversifEye IP Address: *192.168.10.200*.
- ASC IP Address: *192.168.10.9*.



Preferences – Reboot

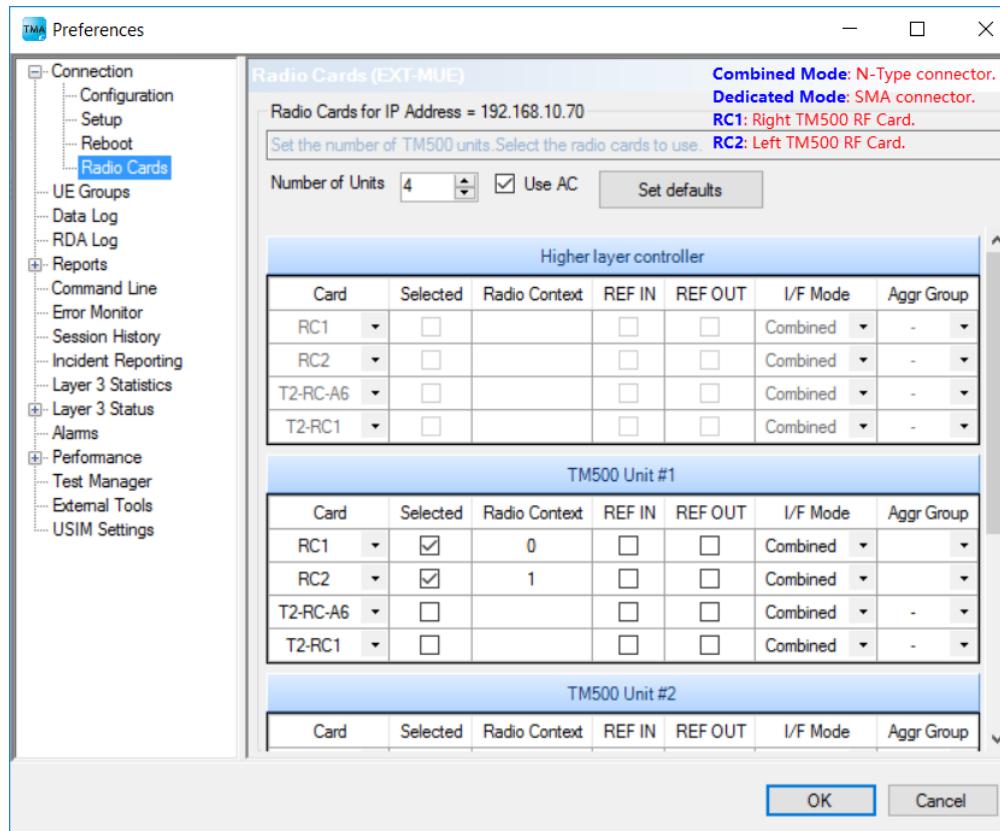
- **Reboot:** 请不要勾选 *On Fatal Error*, 否则出现ASSERT的时候, TM500将自动重启, 无法抓取DTRC log。



Preferences – Radio Cards

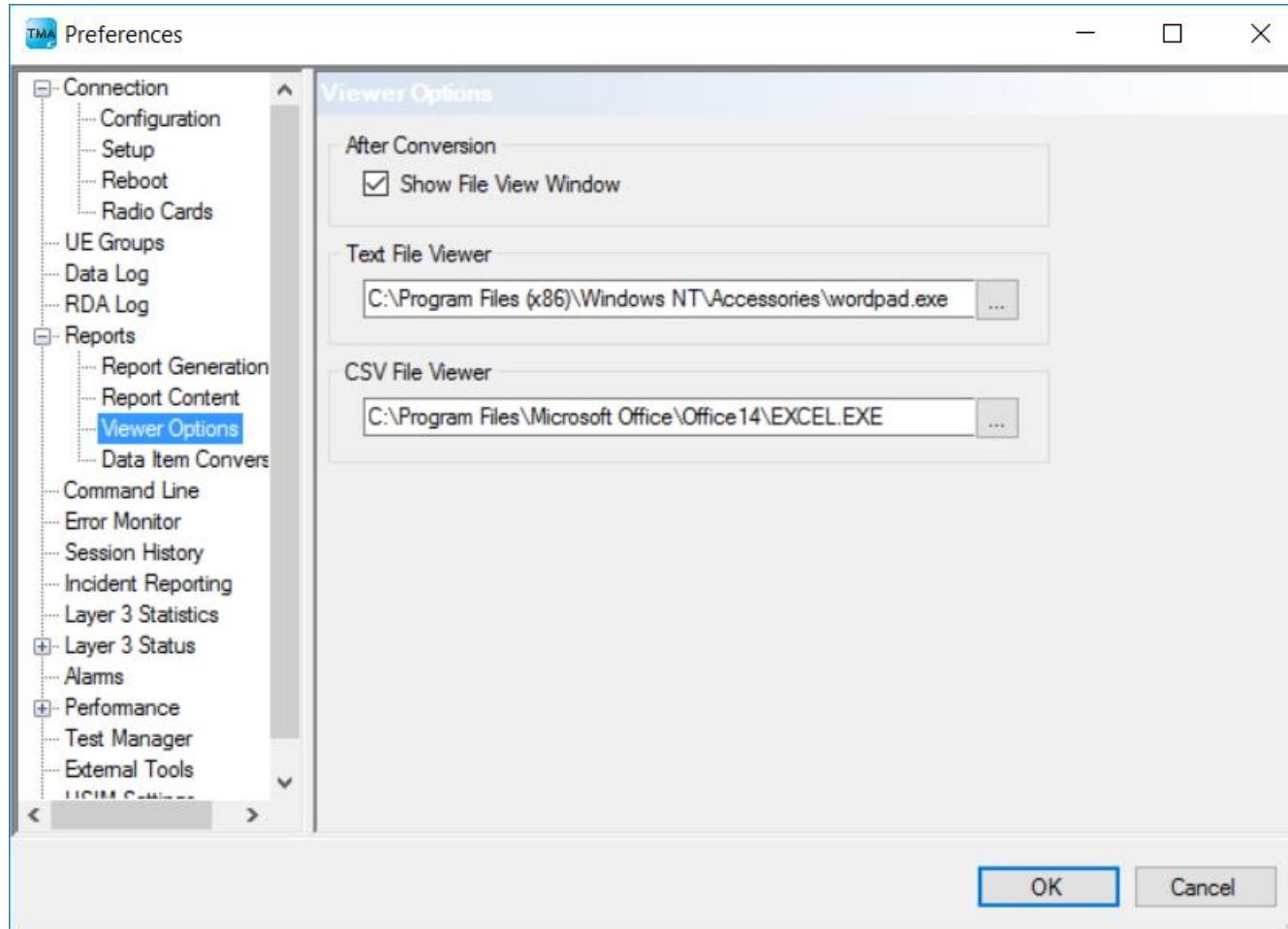
• Radio Cards

- 勾选“Use AC”并根据测试需求配置相应的Number of Units.
- 请根据射频连线，选择对应的射频卡以及I/F Mode.



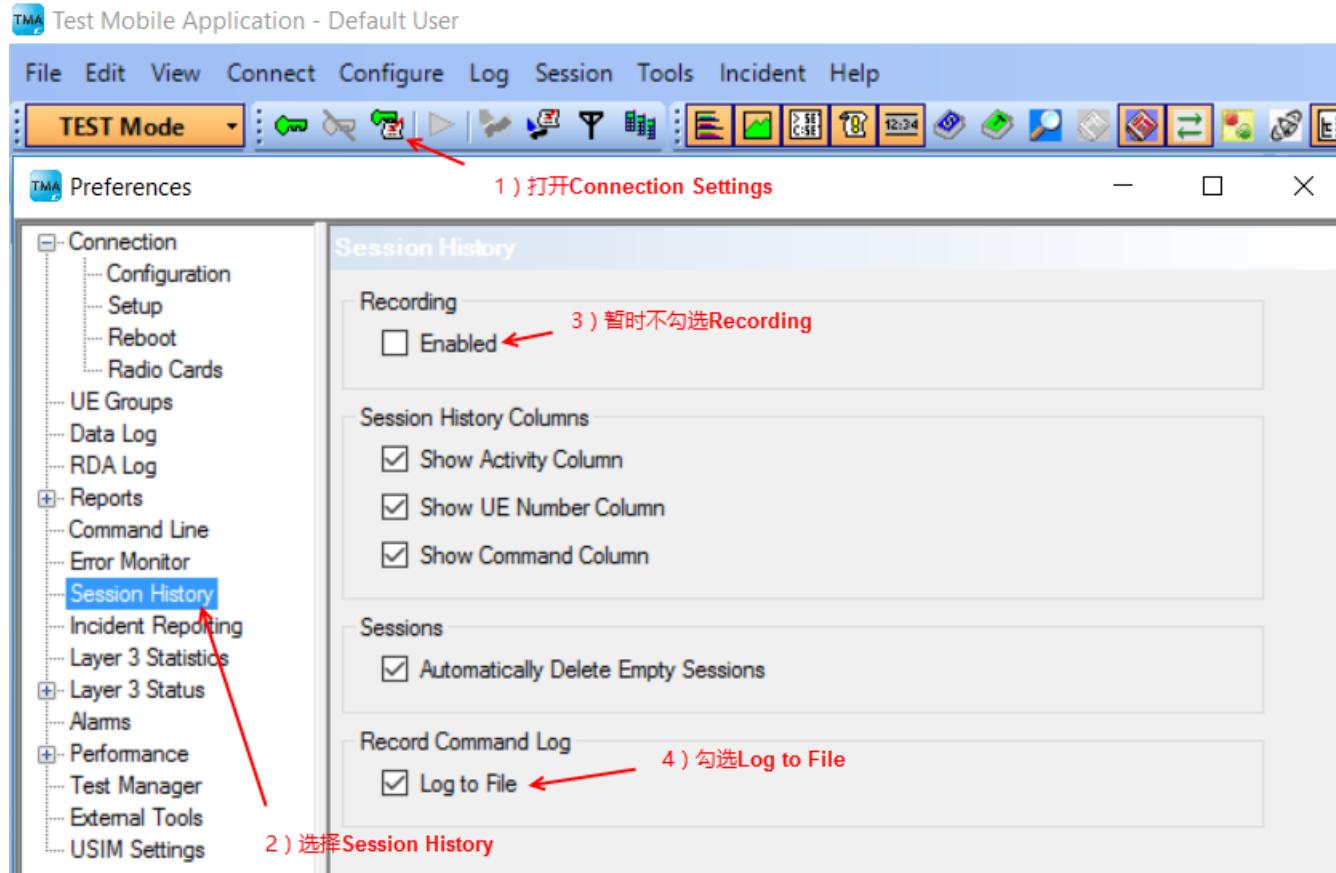
Preferences – Viewer Options

- **Viewer Options:** 请更新CSV File Viewer为Microsoft Excel.



Preferences – Session History

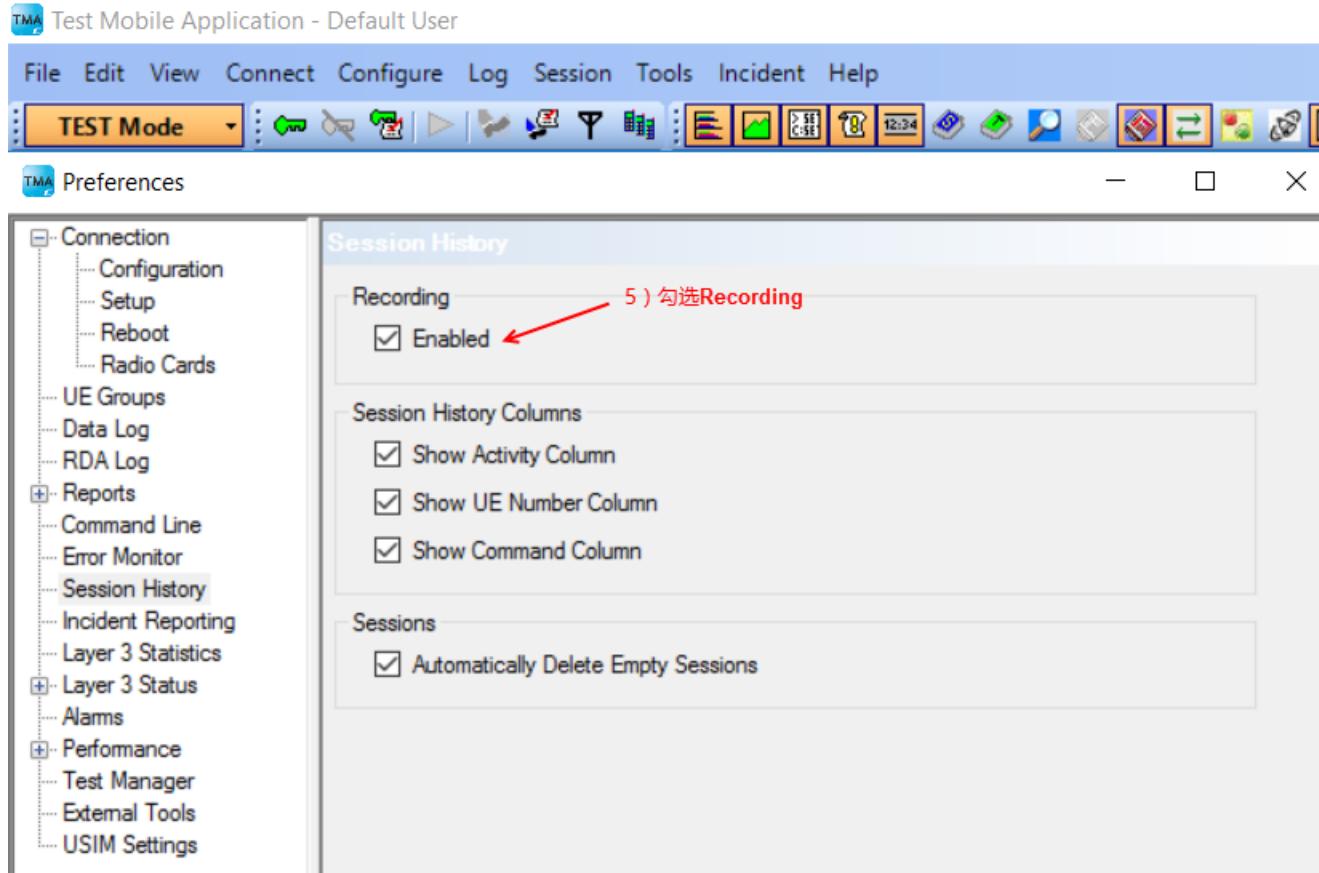
• Session History



Test Mobile Application (TMA)

COBHAM

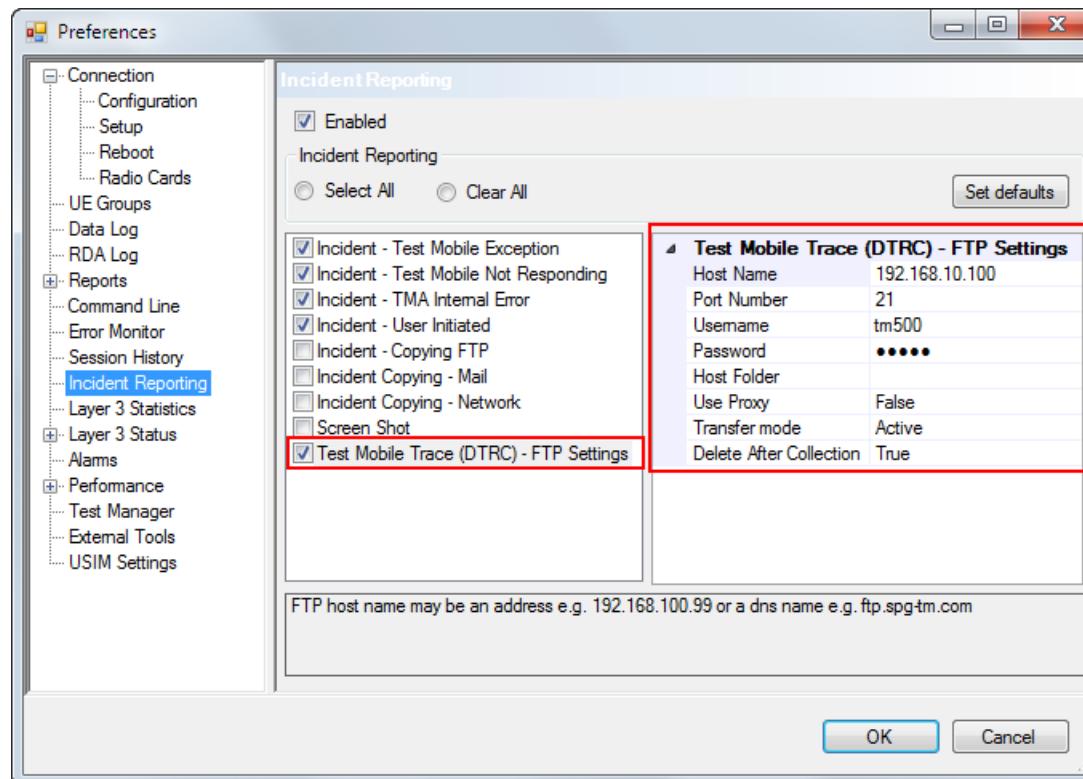
Preferences – Session History



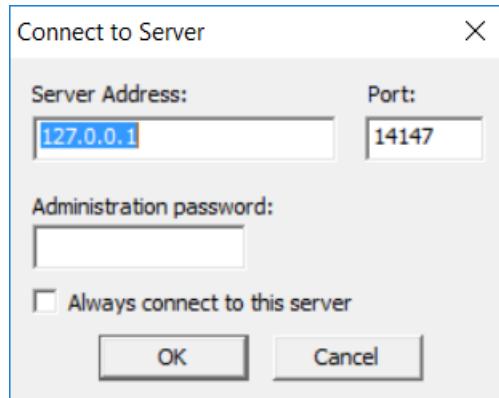
Preferences – Incident Reporting

- Test Mobile Trace (DTRC) – FTP Settings

- **Host Name:** TM500控制电脑IP.
- **Username/Password:** TM500配置的用户名和密码（一般默认配置是tm500/tm500）。

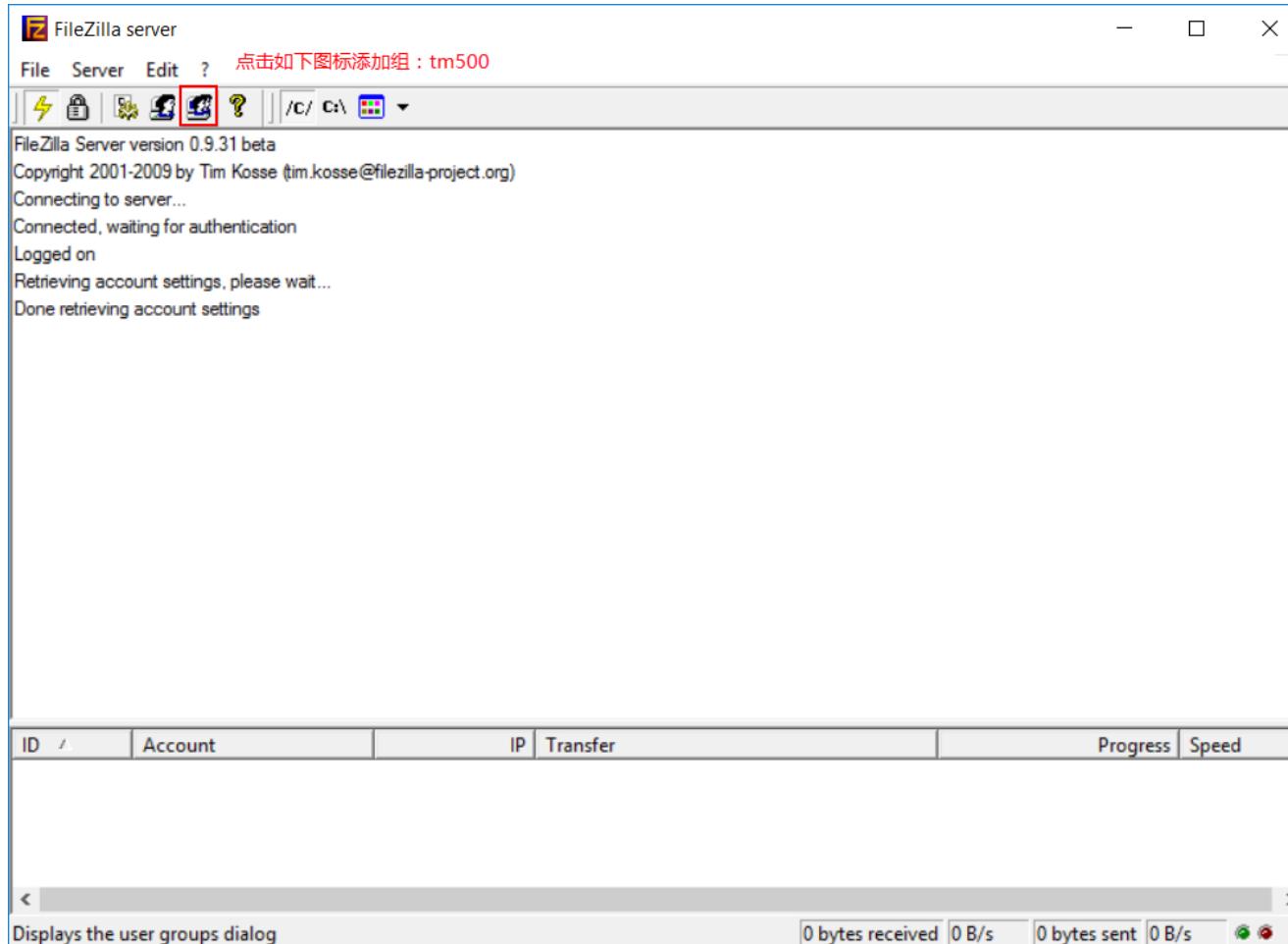


- 双击 *FileZilla_Server-0_9_31.exe* 默认安装。
 - 安装完成后，打开 FileZilla Server，，默认路径：
C:\Program Files (x86)\FileZilla Server\FileZilla Server Interface.exe (64位操作系统)
 - 连接时请用如下图所示默认配置，**不要更改 Server Address 和 Port.**



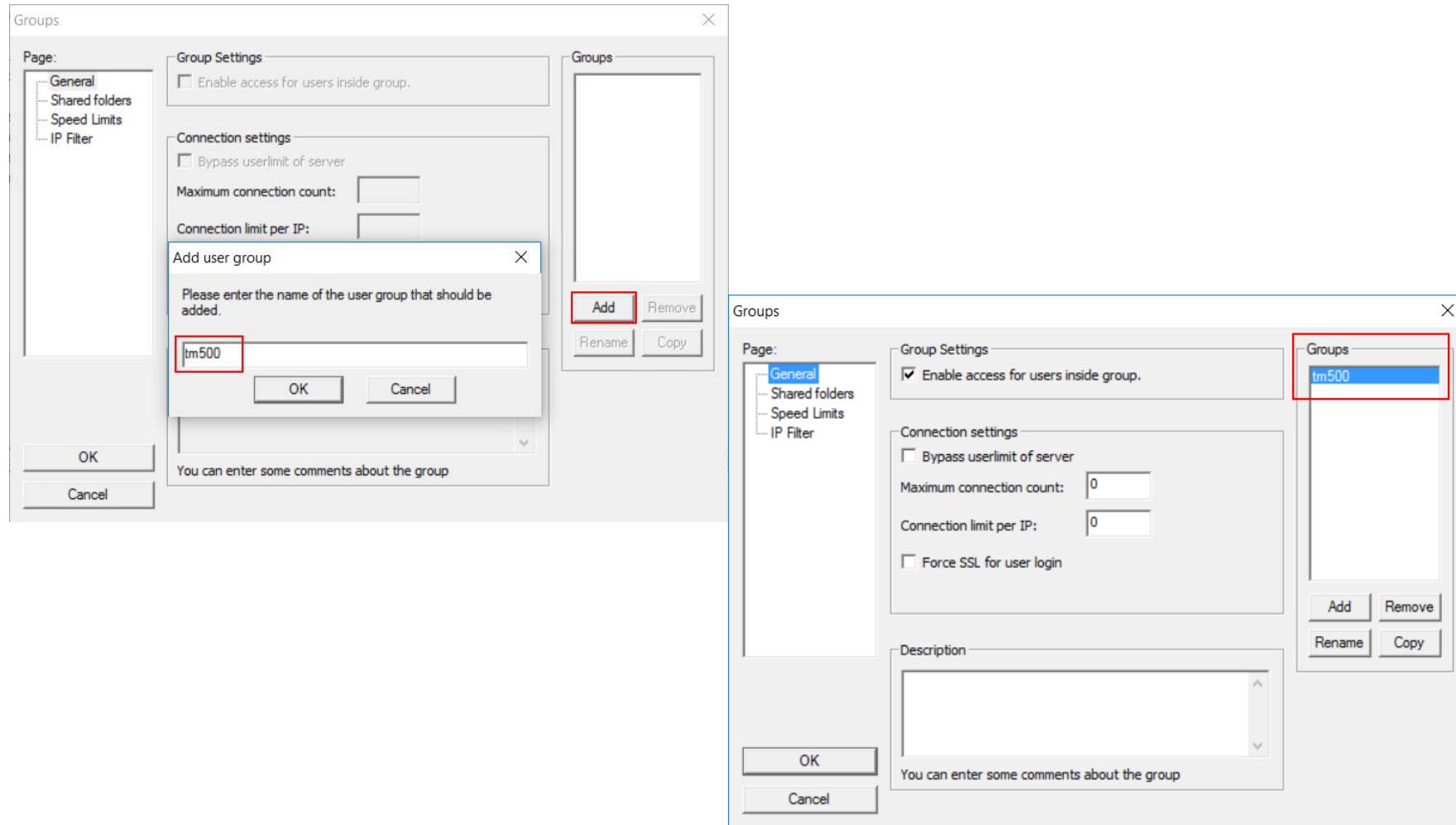
添加用户组

- 点击如下图所示图标添加用户组：tm500。



添加用户组

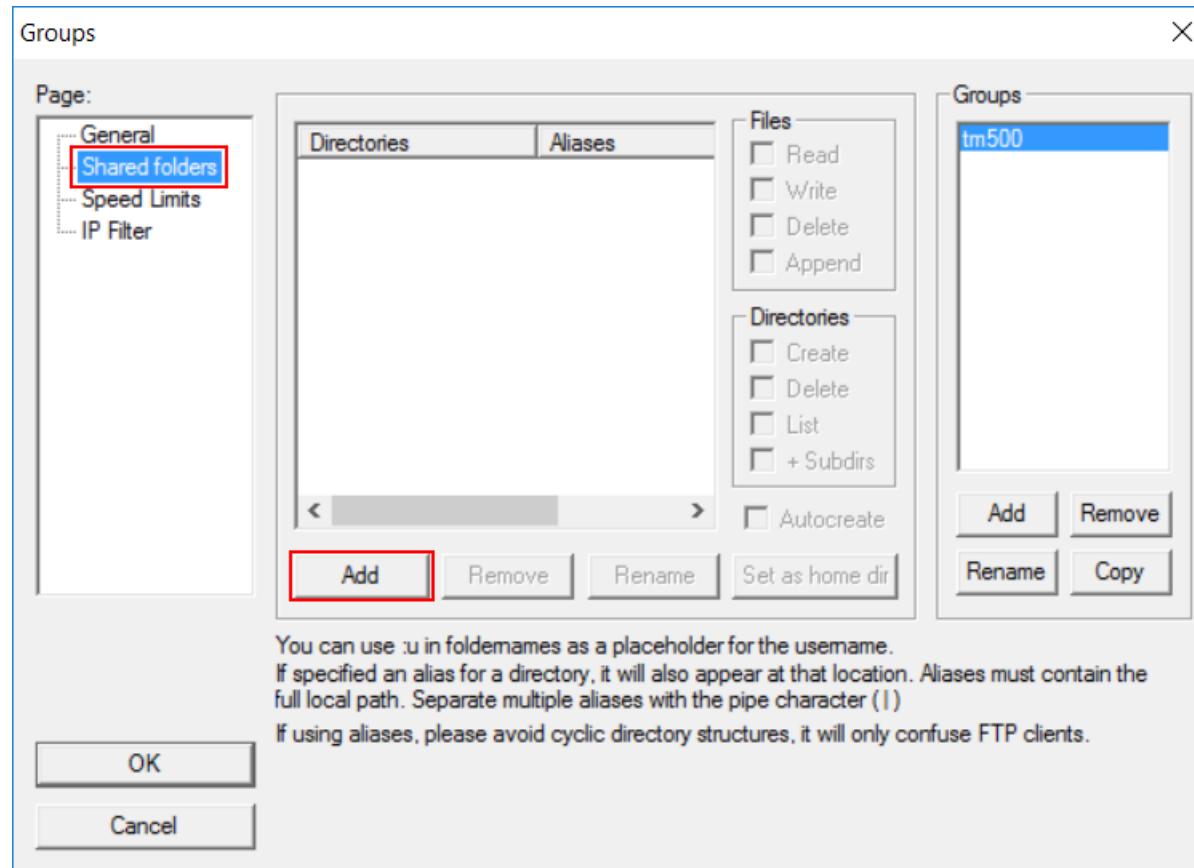
- 添加用户组: tm500



添加共享路径

- 添加tm500用户组共享路径 (*ftp_root*文件夹)

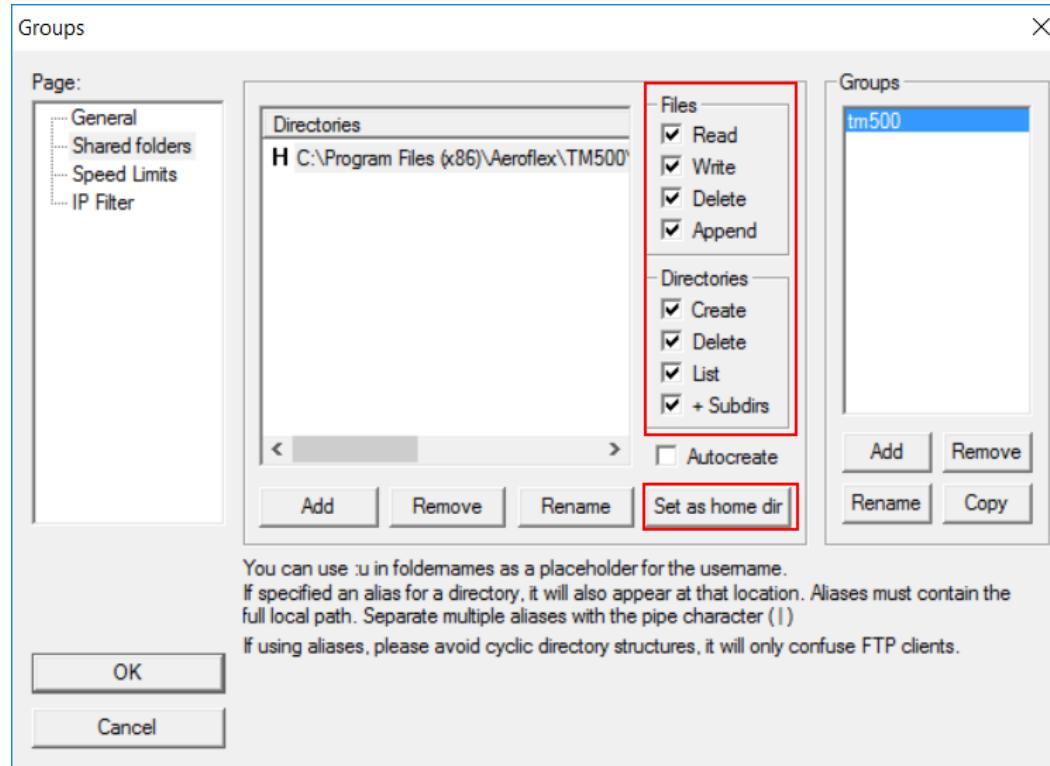
..\\Aeroflex\\TM500\\LTE - LMF 7.2.1\\ppc_pq\\public\\ftp_root\\



添加共享路径

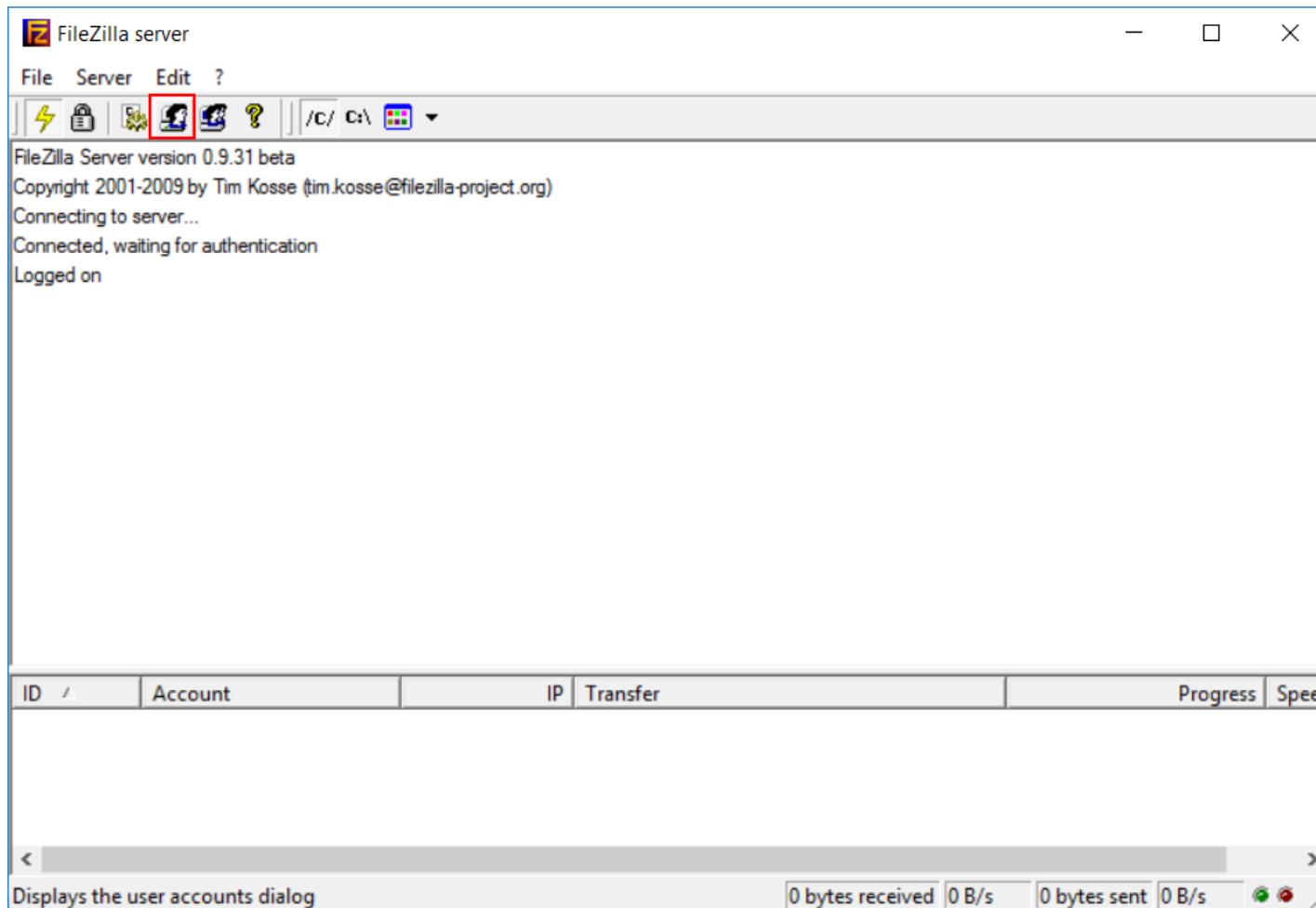
- 路径添加完成后

- 请确保 *Files & Directory* 对应的8个选项均已勾选。
- 点击“Set as home dir”设置新添加的路径为当前路径（如“H”所示），完成设置。



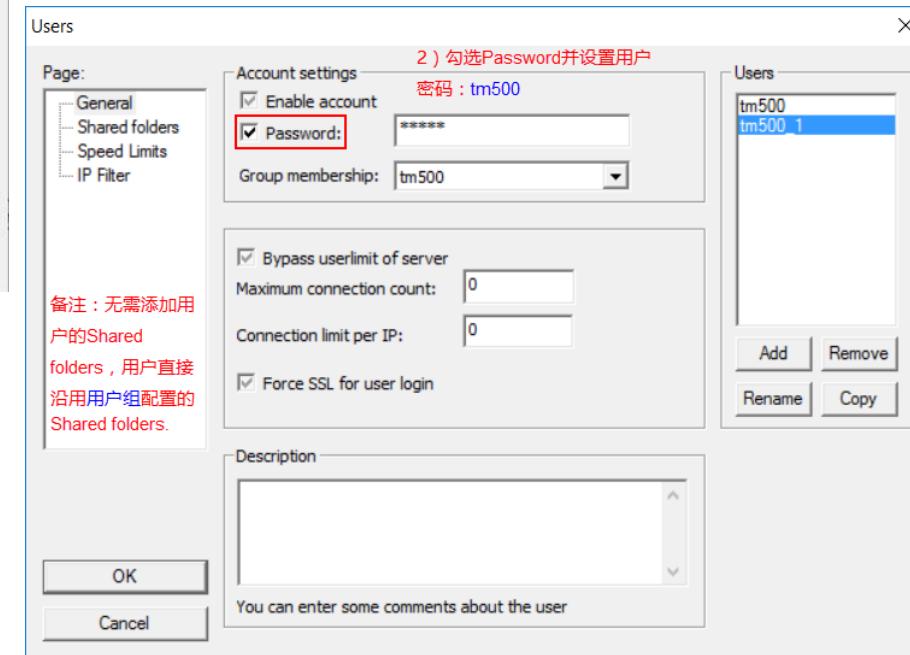
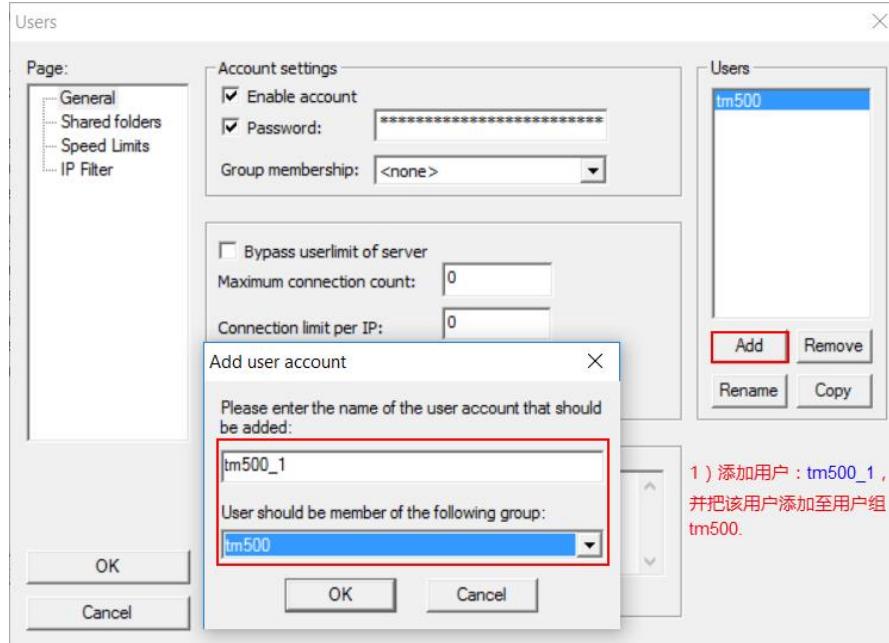
添加用户

- 点击如下图所示图标添加用户信息。



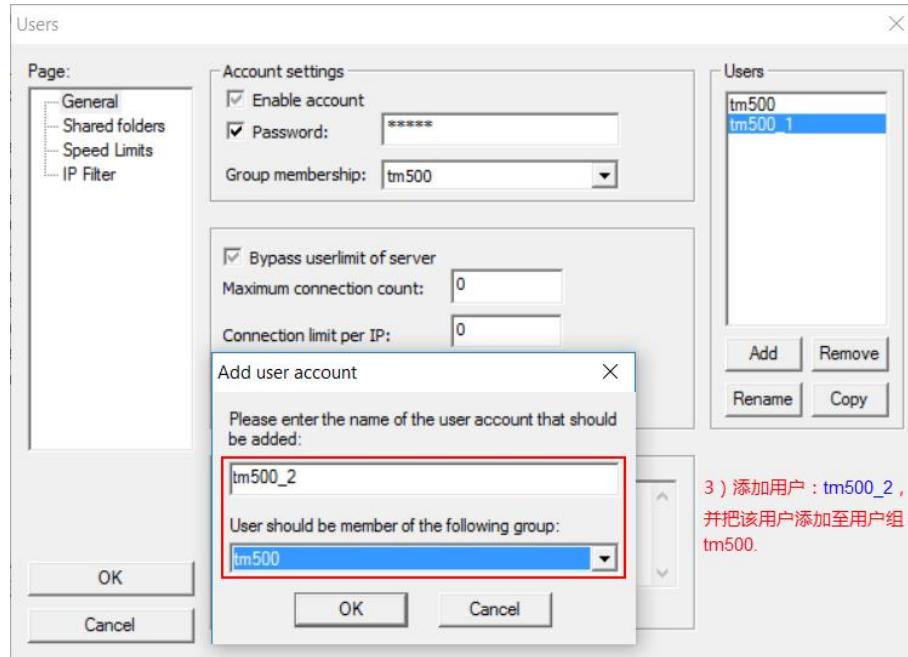
添加用户tm500_1

- 添加TM500#1用户: tm500_1，并把该用户添加至tm500用户组。

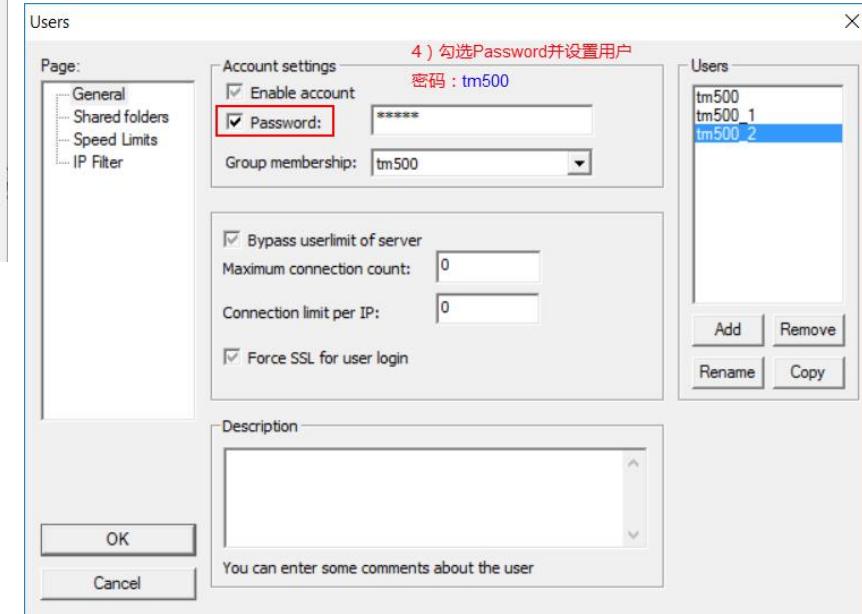


添加用户tm500_2

- 添加TM500#2用户: tm500_2，并把该用户添加至tm500用户组。

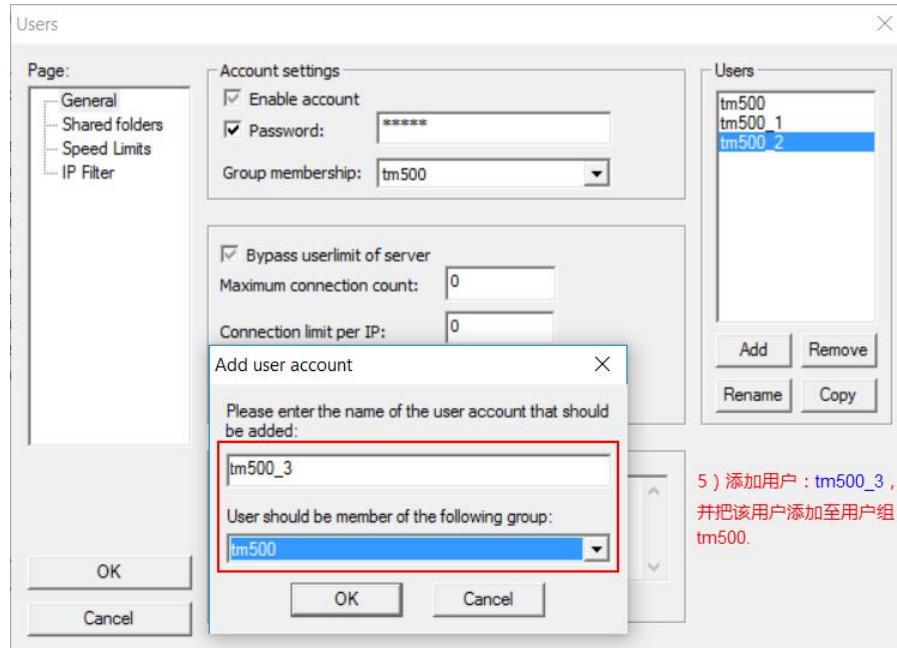


3) 添加用户 : tm500_2 ,
并把该用户添加至用户组
tm500.

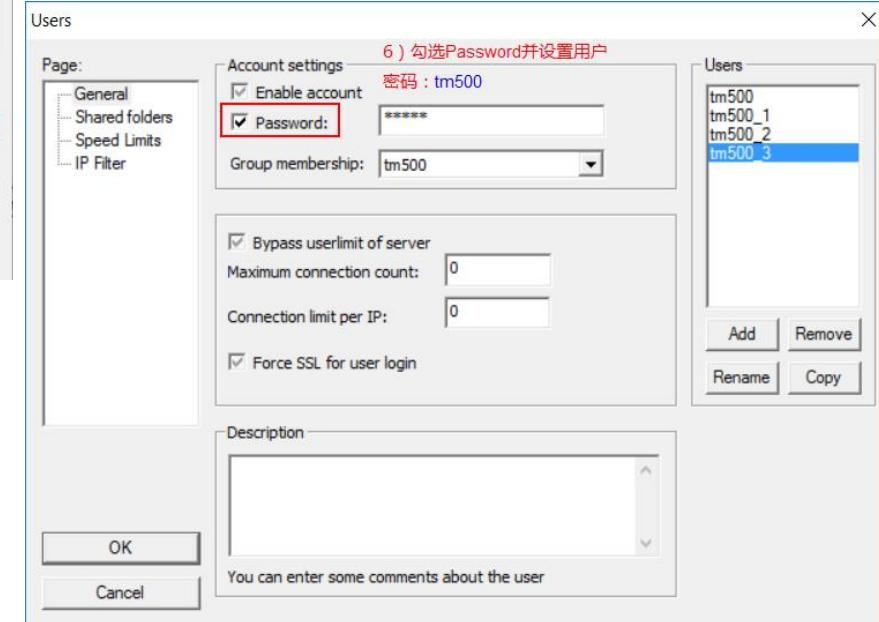


添加用户tm500_3

- 添加TM500#3用户: tm500_3，并把该用户添加至tm500用户组。

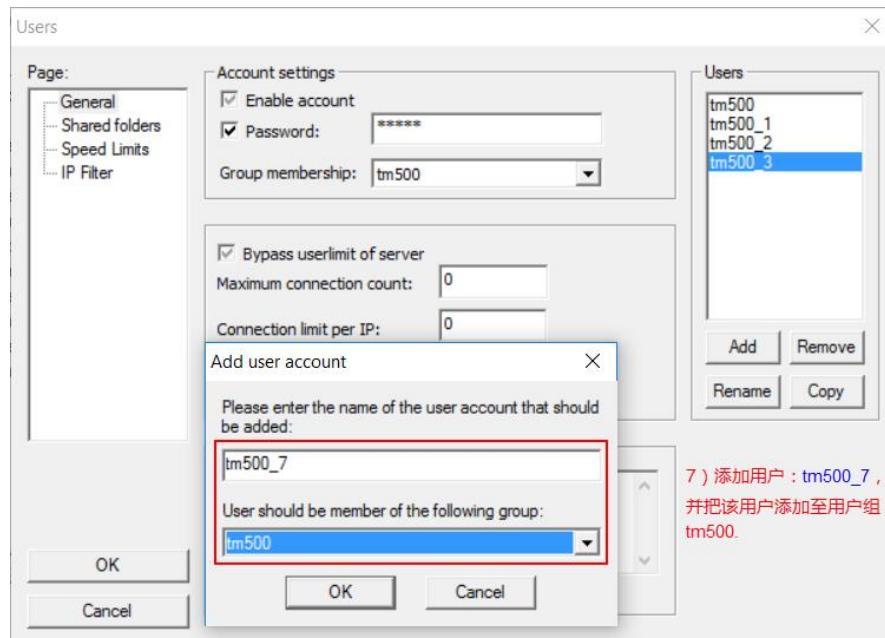


5) 添加用户 : tm500_3 ,
并把该用户添加至用户组
tm500.

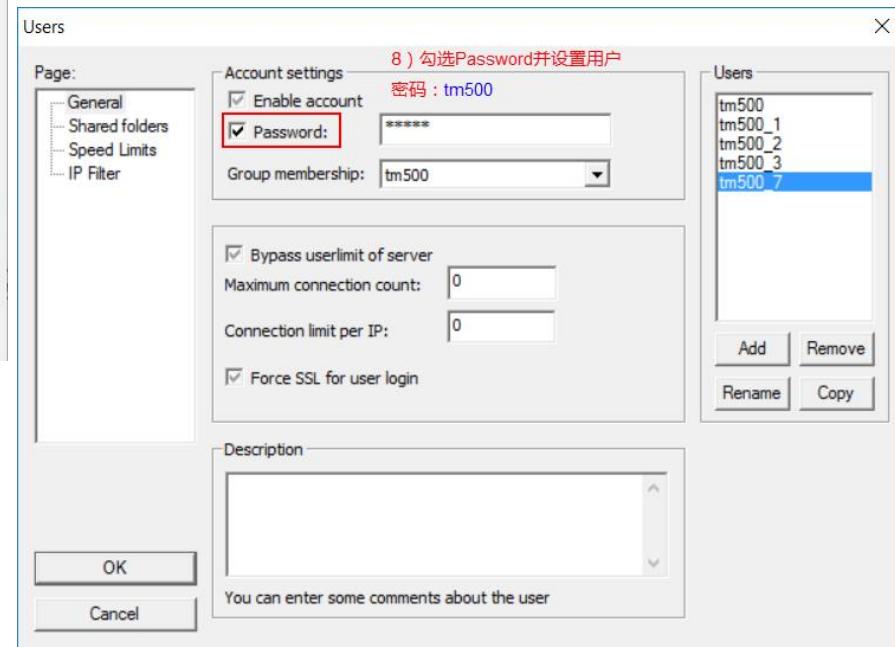


添加用户

- 添加TM500#7 (AC)用户: tm500_7, 并把该用户添加至tm500用户组。

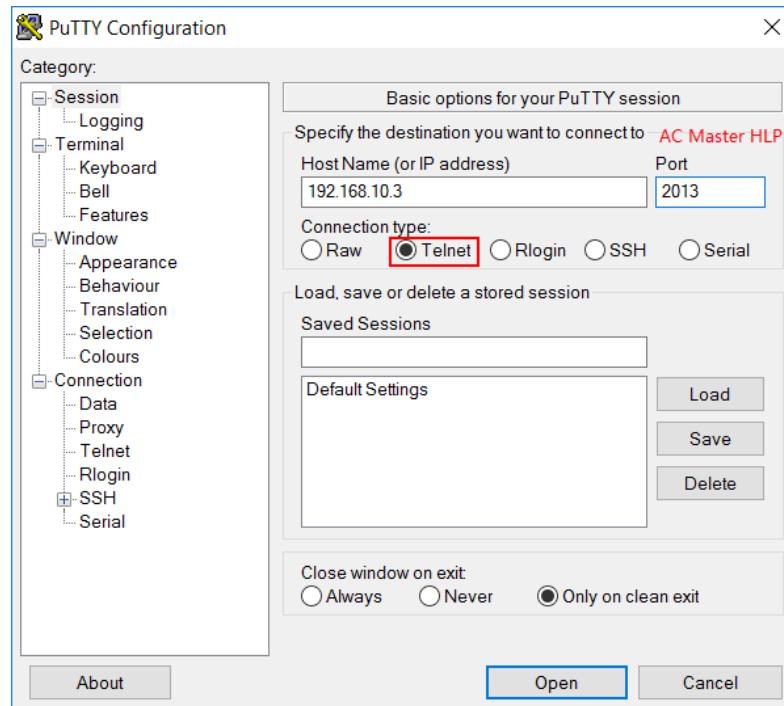


7) 添加用户 : tm500_7 ,
并把该用户添加至用户组
tm500.



- PuTTY: 开源的Serial/SSH/Telnet工具

- 下载路径: <http://www.putty.org/>
- 主要用于通过Telnet访问PortServer，配置或查询HLP信息以及读取串口调试打印信息等等。



备注：串口相关配置，请参阅CN-005-TM500_Serial_Log_MK3.pptx。

下载及安装

- 早期的RDA客户端**diversifEye**, 最新的客户端**TeraVM**
- 默认的管理IP地址: 192.168.10.200.
- 请通过网页浏览器登录管理页面, 下载安装RDA客户端。
 - 用户名: diverAdmin
 - 密码: diversifEye
 - 默认安装即可

下载及安装

The screenshot shows the diversifEye web interface. At the top, there is a header bar with navigation icons (back, forward, refresh), the IP address 192.168.10.200, and a toolbar with a book icon, star, three horizontal lines, a pencil, a bell, and more options. Below the header is a banner featuring the Shenick logo (a blue ribbon with the word 'SHENICK') and the text 'diversifEye' and 'Shenick Network Systems'. A navigation menu bar below the banner includes links for Home, Admin, d1000 Admin, Client Install, Automation, Miscellaneous, and Online Help. The main content area has a title 'Welcome to diversifEye'. To the right of the title is a 'System Information' box containing the following details:

System Information	
IP Address:	192.168.10.200
Network Mask:	255.255.0.0
MAC Address:	44:A8:42:00:AC:6F
Software Version:	11.1
Software Build:	300
Connected Clients:	192.168.10.100 192.168.10.29

On the left side, there is a 'Quick Links Menu' box with the following items:

- [Download diversifEye 11.1 Client](#)
- [Upgrade System](#)
- [Backup Test Configuration](#)
- [Restore Test Configuration](#)
- [Global Settings](#)
- [Card Resource Usage](#)
- [Download System Logs](#)
- [diversifEye Chassis Information](#)

At the bottom of the page, there is contact information:

US : 1900 McCarthy Boulevard, Suite 301, Milpitas, CA 95035 Tel: [408-385-7630](#)
Europe : Brook House, Corrig Avenue, Dun Laoghaire, Co Dublin, Ireland Tel: [+353-1-236-7002](#)

e-mail: info@shenick.com

<http://192.168.10.200/InstData/Windows/VM/shenick.exe>

登录

- 打开RDA客户端， 默认路径：

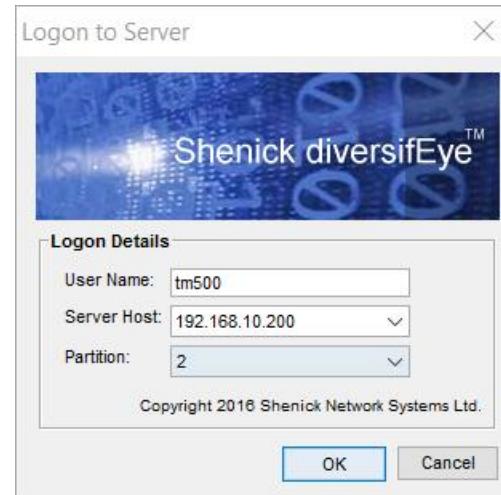
diversifEye: C:\diversifEyeClient\diversifEye.exe

TeraVM: C:\TeraVMClient\TeraVM.exe

– **User Name:** tm500 (默认)。

– **Server Host:** 192.168.10.200 (默认)。

– **Partition:** 根据RDA测试环境连线，选择对应的Partition.

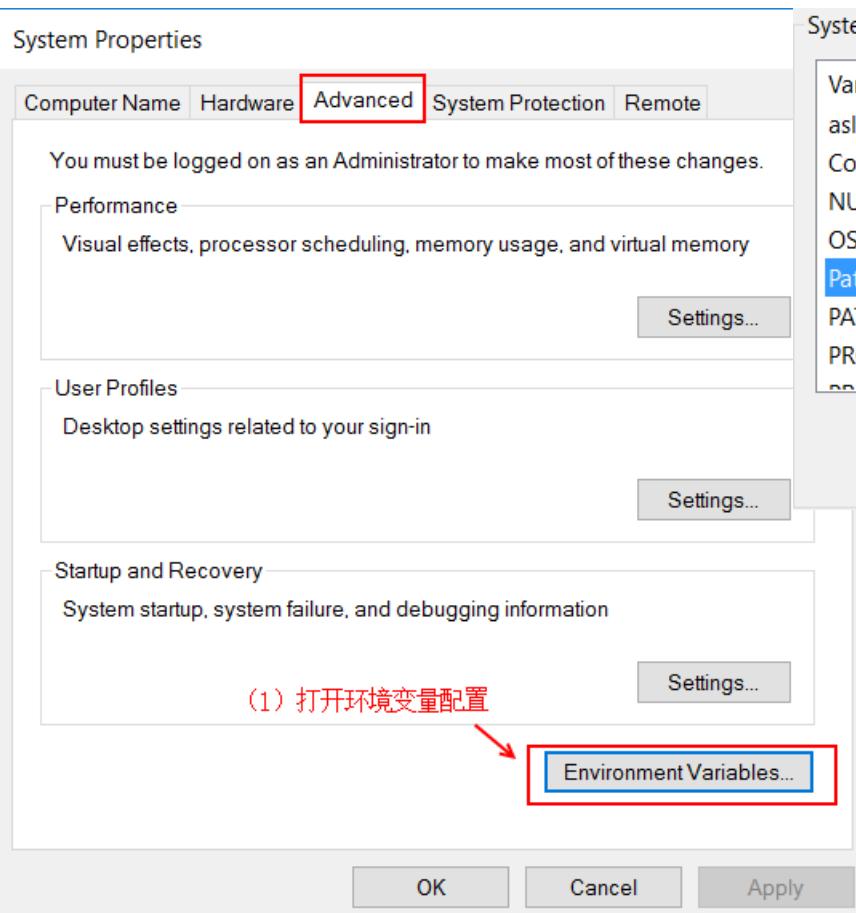


安装

- **Provisioning** : 通过配置文件（tm500.xml），用Python批量生成RDA脚本，这个过程称为Provisioning.
- 电脑运行环境配置
 - 依次下载安装Python相关软件
 - [python-2.7.5.msi](#)
 - [pywin32-214.win32-py2.7.exe](#)
 - [wxPython2.8-win32-unicode-2.8.12.1-py27.exe](#)
 - [xlrd-0.7.9.win32.exe](#)
 - 添加Python安装路径（C:\Python27\）至系统的环境变量。
 - 右键点击“我的电脑”，选择“属性”；
 - 选择“高级”->“环境变量”

备注：Win7和Win10对应的环境变量配置界面略有区别。

添加系统环境变量



System variables	
Variable	Value
asl.log	Destination=file
ComSpec	C:\Windows\system32\cmd.exe
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	C:\Program Files (x86)\Intel\iCLS Client\;C:\Program Files\Intel\... (2) 添加环境变量 C:\Python27\
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTU...	AMD64

(2) 添加环境变量 C:\Python27\

New...

Edit...

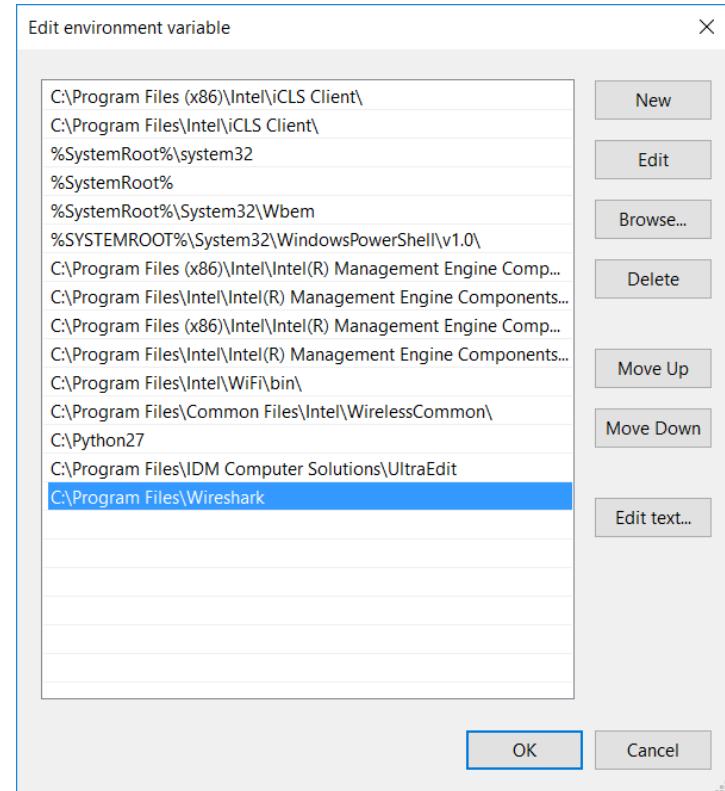
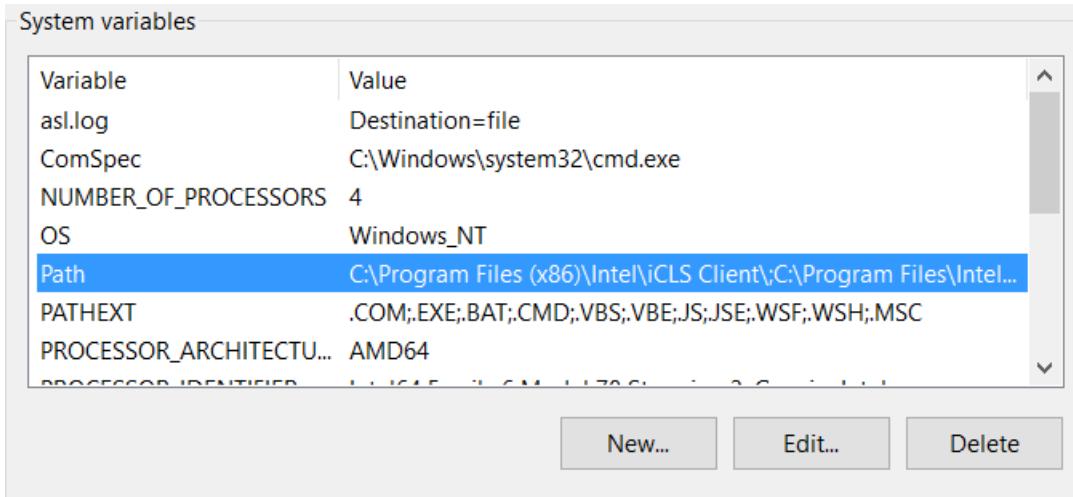
Delete

(1) 打开环境变量配置

Environment Variables...

安装及添加系统环境变量

- RDA支持实时抓取任意Node/Application/Host的PDU.
- 为了在RDA客户端直接打开抓取的PDU日志，请先安装Wireshark并把Wireshark安装路径添加至系统环境变量。
 - Wireshark下载路径：<https://www.wireshark.org/download.html>
 - 添加系统环境变量



预调试



- 预调试之前，请先确保：
 - 控制电脑设置完成，并与E500通过网线正常连接
 - E500和eNB RF通过射频线正确连接
 - E500和P-GW已网线连接
 - E500连接面板的A11和A12口已网线连接
- 预调试主要确认：
 - E500无硬件故障
 - 小区信号符合测试需求
 - 开户信息正确，UE成功入网
 - FTP/UDP/VoLTE业务可以顺利发起

- 请根据前面章节的介绍和具体测试环境，完成射频线和网线连接。

- IMSI/Authentication Key/OP(*or OPc*)/PLMN/APN
- Cell ID/Frequency(*or EARFCN*)/Bandwidth
- 参考信号发射功率 (*referenceSignalPower* in SIB2)
- 业务服务器配置
 - P-GW IP
 - 业务服务器IP
 - VoLTE相关配置
 - P-CSCF IP
 - 用户名/域名/密码/鉴权用户名
 - 如果VoLTE采用AKA鉴权算法，还需提供以下信息
 - AKA_Key
 - AKA_Operator_Id

开户信息

COBHAM

Cell Index	Band/ERFCN	Frequency	Bandwidth	Phy Cell ID	RS Power	RC	Aggr Group
1						0	
2						1	
3						2	
4						3	
5						4	

VoLTE UE IMSI	
OP/OPc	
Authentication Key	
APN	
Useranme	
Password	
Domain	
SIP_Auth_Username	
AKA_Key	
AKA_Operator_Id	

D1000 Server	IP
Gateway	
FTP	
HTTP	
DL UDP	
UL UDP	
RTSP	
IMS Server (VoLTE)	
CPING	

PS UE IMSI	
Authentication Key	
OP/OPc	
APN	

- E500 380V上电完成后，请通过PDU上电AC和所有Cell Units。

- 首先登录ASC，然后
 - 根据测试需求选择对应的Group
 - Lock Resources
 - Power On

- 请根据附录“固件升级”章节，确认是否需要固件升级。

- 请根据测试环境，更新脚本模板“E500_Test_Setup.grf & E500_Test_Setup_VoLTE.grf”如下测试步骤的相关参数：
 - Configure Radio Contexts
 - Configure USIM
 - Configure NAS PLMN Selection
 - Define eNB Positions
 - Start MTS Scenario
 - PDN Definiton

- Provisioning模板
 - **Provisioning_FTP_UDP_VoLTE:** 生成FTP/UDP以及IPv4 VoLTE并采用Digest鉴权算法。
 - **Provisioning_VoLTE_IPv6_AKA:** 生成IPv6 VoLTE并采用VoLTE_AKA_ESP鉴权算法。
- 请根据测试环境，更新Provisioning的配置文件TM500.xml，主要包括：
 - Server IP_Address
 - Core_Gateway_IP
 - VoLTE相关参数
 - Username/Password
 - Domain/SIP_Auth_Username
 - AKE Authentication
 - AKA_Key
 - AKA_Operator_Id

- TM500配置文件更新完成后，请根据如下步骤，生成D1000脚本。

The screenshot shows a Windows Command Prompt window with the following text:

```
Command Prompt 1) 打开DOS Prompt.  
Microsoft Windows [Version 10.0.10586]  
(c) 2015 Microsoft Corporation. All rights reserved.  
C:\Users\Klein Jiang>cd /d D:\Cobham\Training\CN_Application_Notes\CN-008-E500_Test_Setup\Scripts\diversifEye\  
D:\Cobham\Training\CN_Application_Notes\CN-008-E500_Test_Setup\Scripts\diversifEye>live.bat  
3) 运行live.bat生成D1000脚本.
```

The text is annotated with red numbers 1, 2, and 3 corresponding to the steps listed in the slide.

备注：请参阅*CN-002-Real_Data_Application*进一步了解D1000的脚本生成。

- 射频卡最大允许输入信号强度（RSSI）为-25dBm。
 - 搭建测试环境时，除了固定衰减器30dB衰减外，建议设置可调衰减器的初始衰减也为30dB，后续再做微调。
 - 建议下行主辅支路（TX1-RX1, TX2-RX2）RSRP为-60dBm，最大不应该超过-50dBm；交叉支路（TX1-RX2, TX2-RX1）尽可能小（例如：小于-100dBm）。
 - 实验室线缆连接的条件下，主辅支路SINR基本可以保证在30dB以上，交叉支路SINR最好小于0dB。
 - 完成小区搜索后（运行*Configure Radio Contexts*），可通过如下命令查询小区RSRP/SINR：

forw mte GetStats [6] [-1]

```
21/05/15 19:07:26:059 forw mte GetStats [EXT-STATS] [-1] [0]
21/05/15 19:07:26:075 C: FORW 0x00 Ok MTE GETSTATS [EXT-STATS] [-1] [0, 1, 2, 3, 4, 5]
21/05/15 19:07:26:075 UE ID: - (Radio Context: 2 Cell ID: 80 DL Freq: 2660.0 MHz)
21/05/15 19:07:26:075 RSSI: -39.6 dBm
21/05/15 19:07:26:075 Reference Signal: (Tx1,Rx1) RSRP: -61 dBm/SC SIR: 36 dB RSRQ: 2.2 dB RSSI: -43.2 dBm
21/05/15 19:07:26:075 Reference Signal: (Tx1,Rx2) RSRP: -109 dBm/SC SIR: -2 dB RSRQ: -46.9 dB RSSI: -42.1 dBm
21/05/15 19:07:26:075 Reference Signal: (Tx2,Rx1) RSRP: -110 dBm/SC SIR: -2 dB RSRQ: -46.8 dB RSSI: -43.2 dBm
21/05/15 19:07:26:075 Reference Signal: (Tx2,Rx2) RSRP: -60 dBm/SC SIR: 37 dB RSRQ: 2.1 dB RSSI: -42.1 dBm
```

- 初次搭建测试环境时，请在运行完**Init**脚本之后，及时确认并确保RSRP/SINR满足上述需求后，再进行测试。

- 测试环境及脚本均已准备就绪
 - 请依次确认每个小区的RSRP/SINR满足上页所述射频信号要求
 - 确认UE成功ATTACH
 - FTP/VoLTE业务成功发起

附录

- TM500硬件介绍
- License查询与安装
- 固件升级
- E500下电
- Add Codec AVPs



TM500硬件介绍

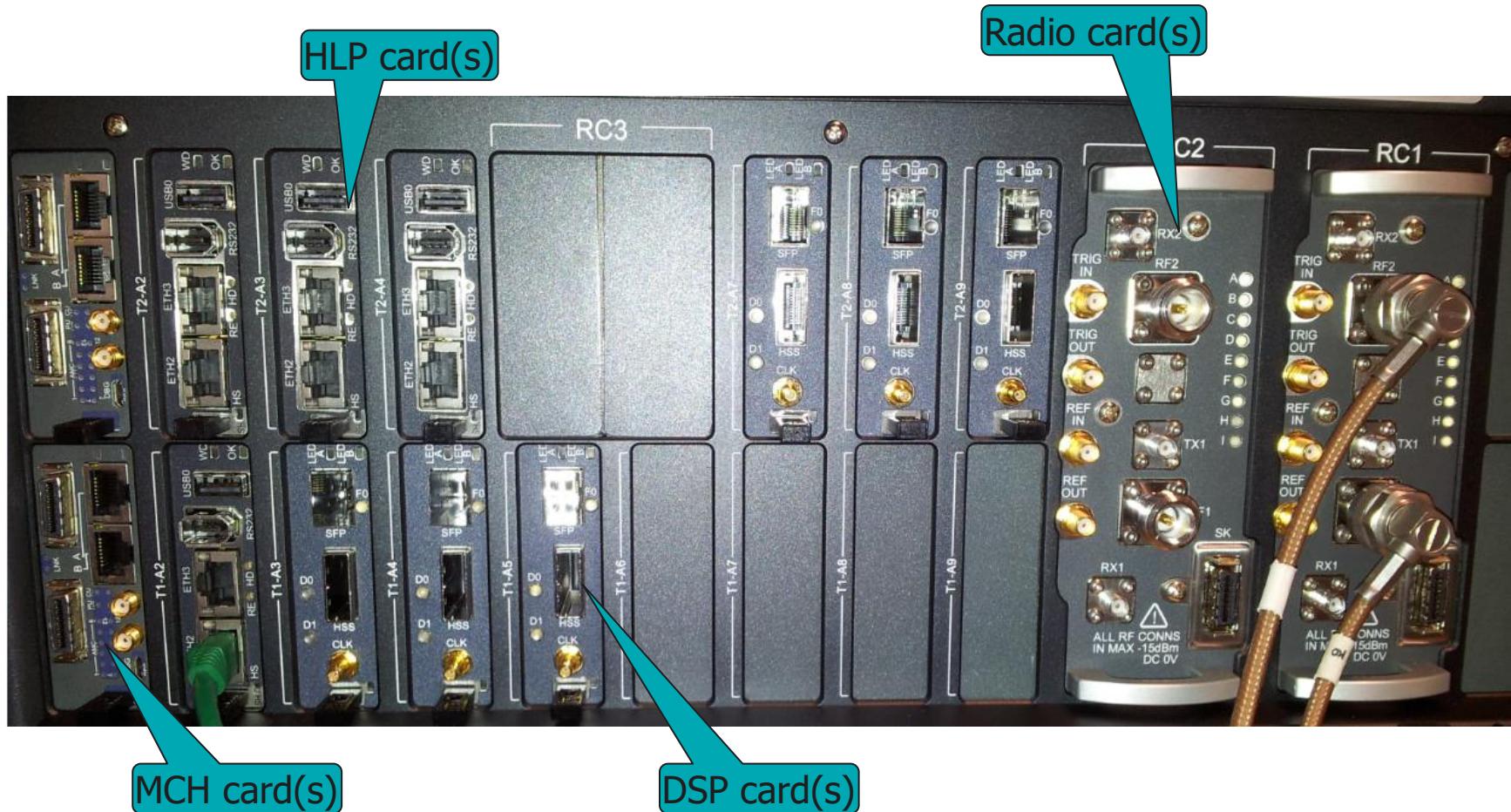


Front Panel



TM500硬件介绍

Back Panel



TM500 硬件介绍

TM500 LED Indicators

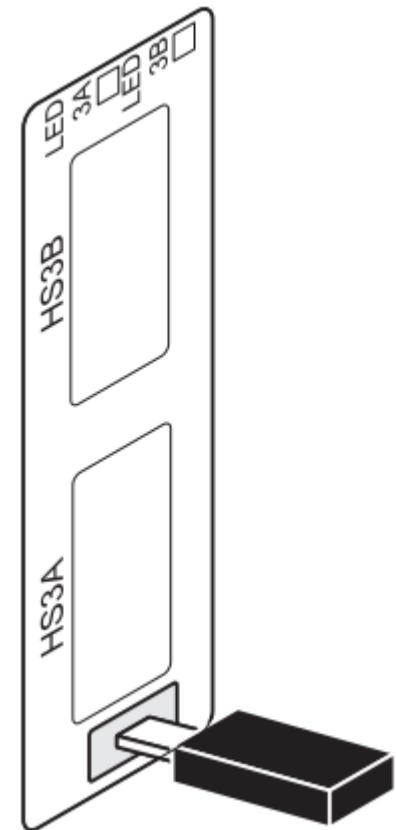
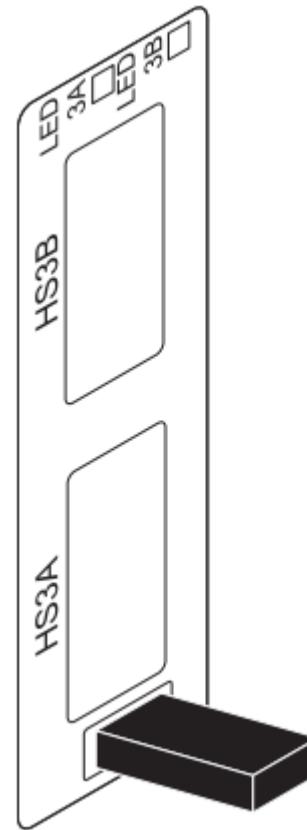
They give clues on their operation.



Blue light indicates the card is not in operation.

The tab to the left of the LED acts as an ON / OFF switch.

Temperature overheating will also be indicated by the LED.



'On' position (Left), 'Off' position (right)

Multi-Band RF cards

- **TK599-C** 400 MHz - 4 GHz Multiband Radio (MBR)
 - The double height of this MBR imposes restriction for future expansion.
 - Manufacturing of this double height card is to be scaled down.
- **TK600-C** 400 MHz - 4 GHz Compact MBR (C-MBR)
 - This is functionally equivalent to TK599-C, but is half the size, enabling up to 4 C-MBRs to be fitted in one chassis (i.e. 2CC CA, 4x4 MIMO).
- **TK613-C** 400 MHz - 6 GHz (DL) MBR
 - This is the same size as TK599-C but includes support for up to 6 GHz Downlink.
 - Order this card if the customer requires 4 to 6 GHz support (LTE-U / LAA)

TM500硬件介绍

Multi-Band RF cards

**Full height or Half height:
same functionality.**

**Frequency range supported
= 400MHz to 6GHz.**

**Choice of Combined Tx/Rx
or dedicated Tx & Rx RF
ports.**

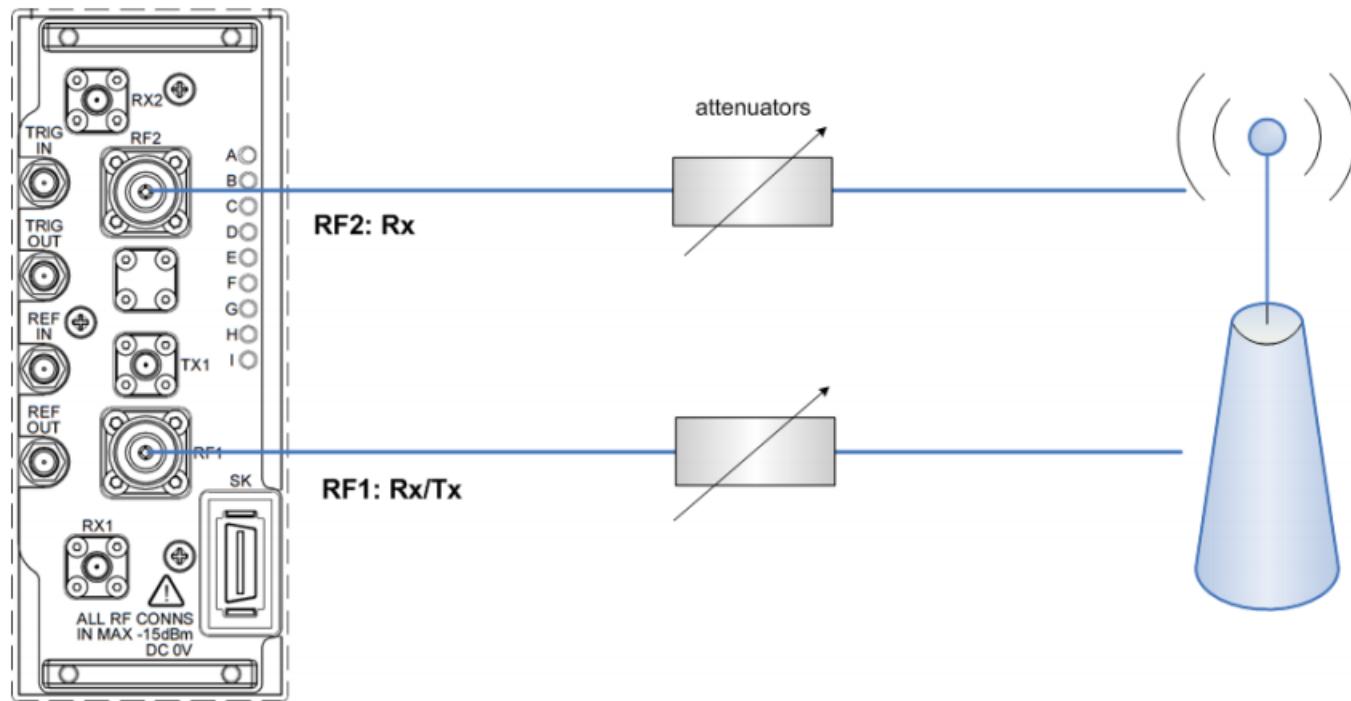


Radio Card LED's



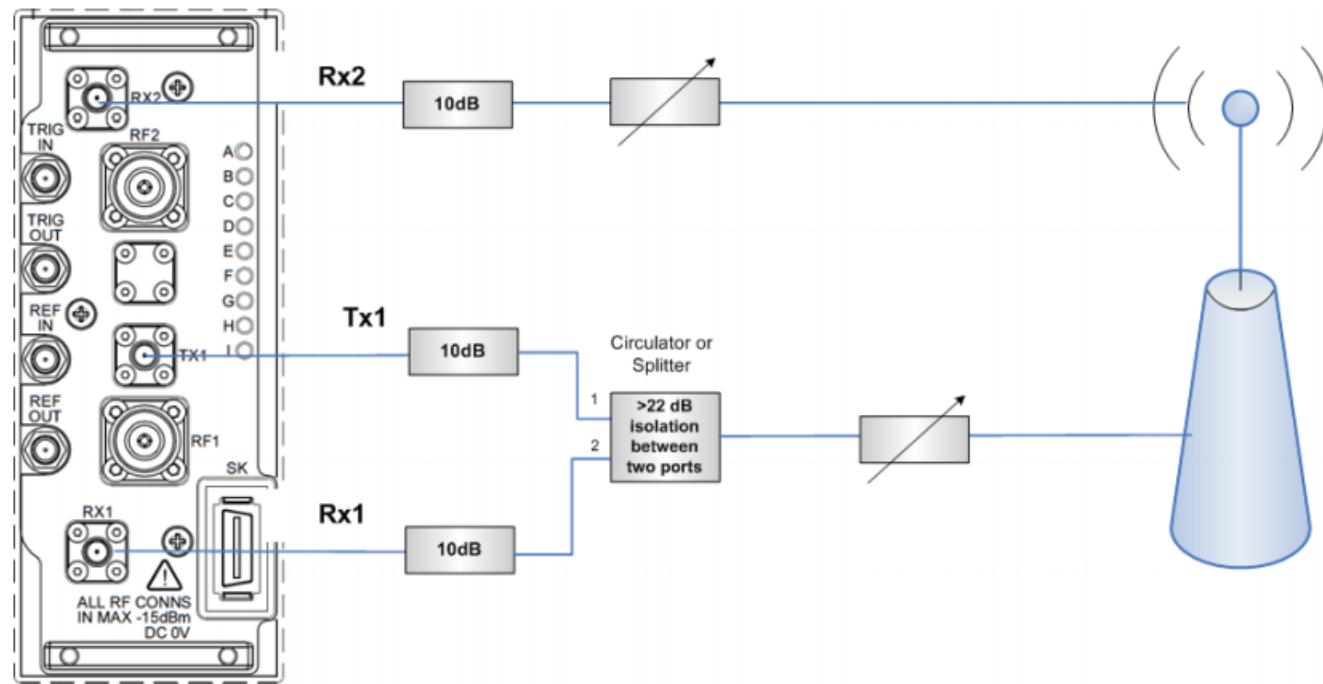
Location	Legend	Color	Indicating
Right side of card	A	Yellow	Hardware assert
	B	—	—
	C	Green	Power input to card OK
	D	—	—
	E	—	—
	F	This LED is relevant only if an external reference clock is used to provide baseband timing to the radio card. See the <i>TM500 Command Reference Manual</i> for more information about using this feature.	
		Red	External reference clock signal present but not within range
		Orange	External reference clock signal present and in range
		Green	External reference signal has been synchronized
	G	Green	CON FPGA configured
		Red	CON FPGA not configured
	H	Green	SIG FPGA configured
		Red	SIG FPGA not configured
	I	Red	Software assert

Combined Mode



TM500硬件介绍

Dedicated Mode



Multi-Band RF cards

- 上行最大发射功率
 - Combined Mode: 0dBm
 - Dedicated Mode: 16dBm.
- 射频卡最大允许输入信号强度（RSSI）为-25dBm。
 - 搭建测试环境时，除了固定衰减器30dB衰减外，建议设置可调衰减器的初始衰减也为30dB，后续再做微调。
 - 建议的下行RSRP为-60dBm，最大不应该超过-50dBm。完成小区搜索后（运行*Configure Radio Contexts*），可通过如下命令查询小区RSRP/SINR：

```
forw mte GetStats [6] [-1] [0]
```

License查询与安装

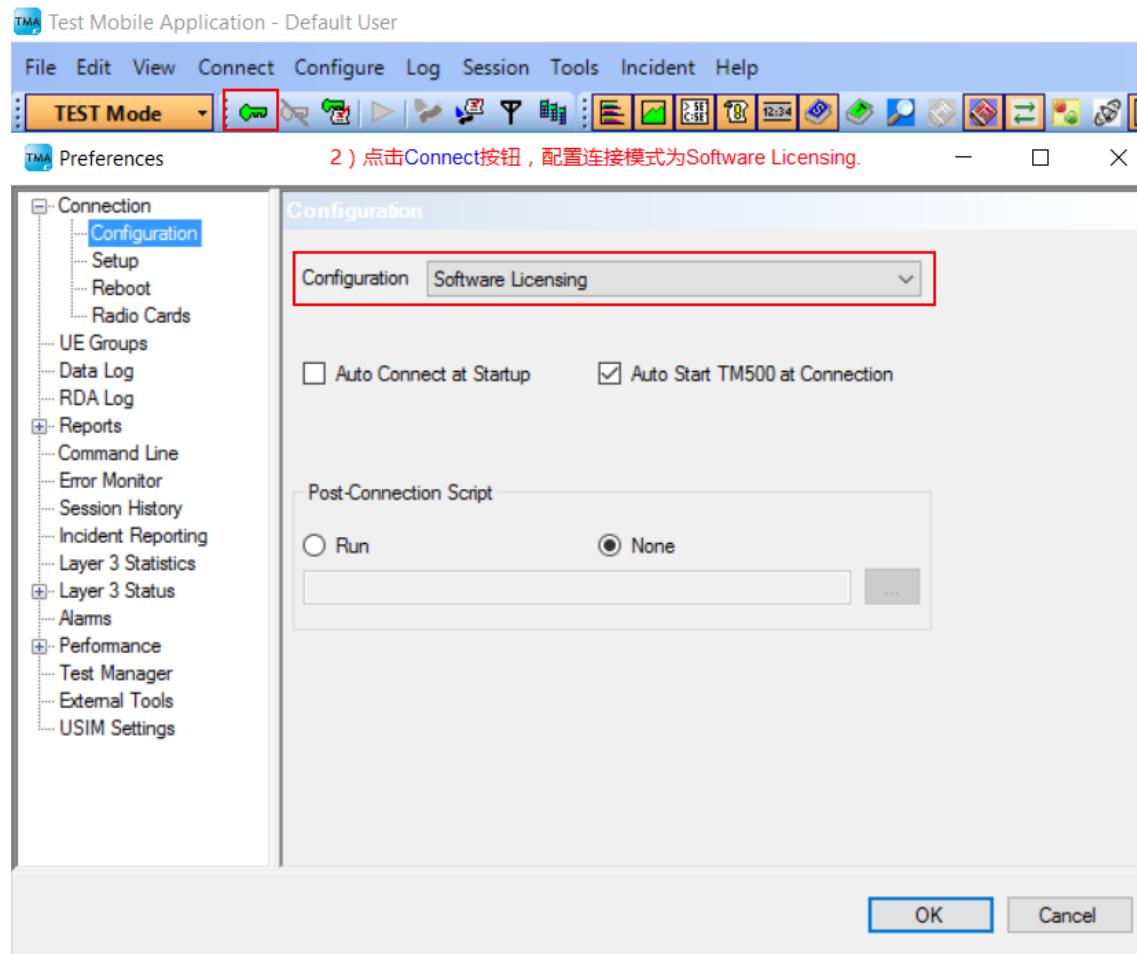
- System ID查询
- E500
 - AC
 - Cell Units
- D1000



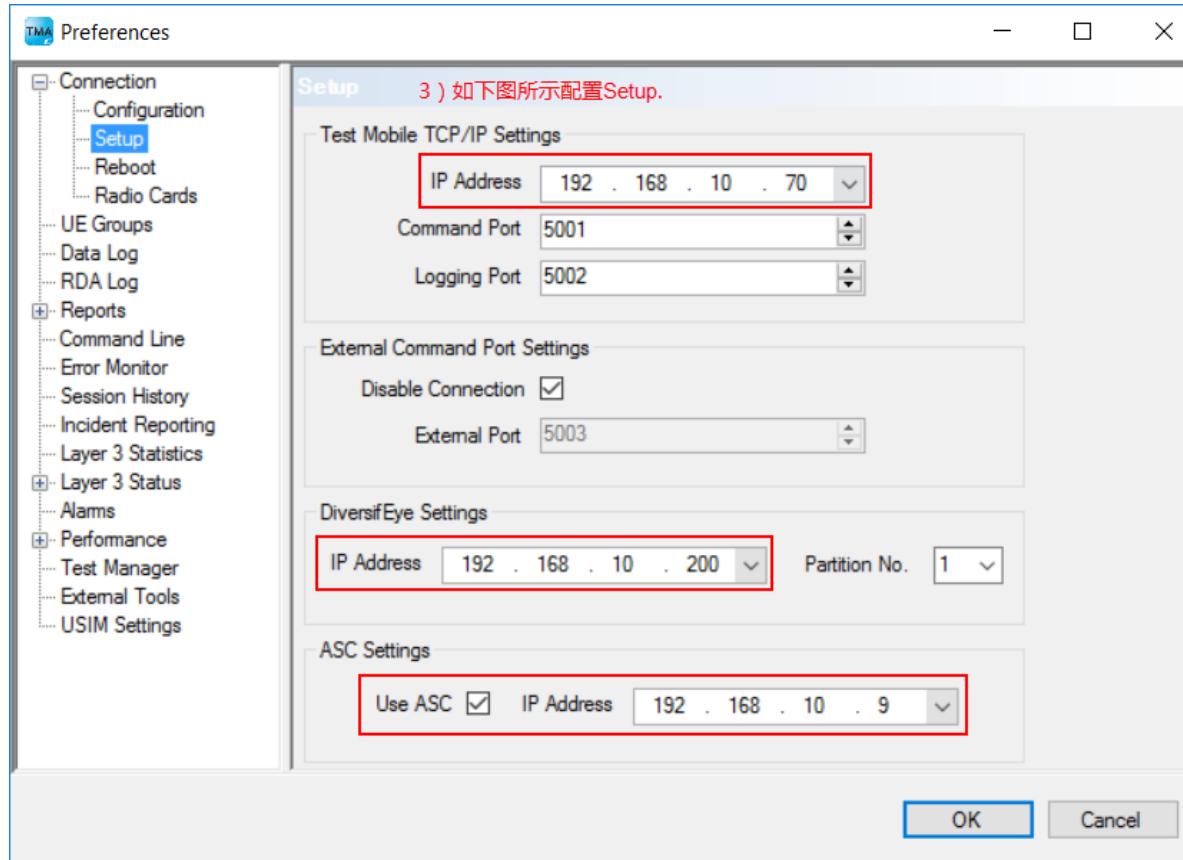
- 请找负责TM500接口的销售申请新的license，需要提供以下信息：
AC和Cell Units的System ID以及序列号。
 - 打开TMA，新建一个Session.



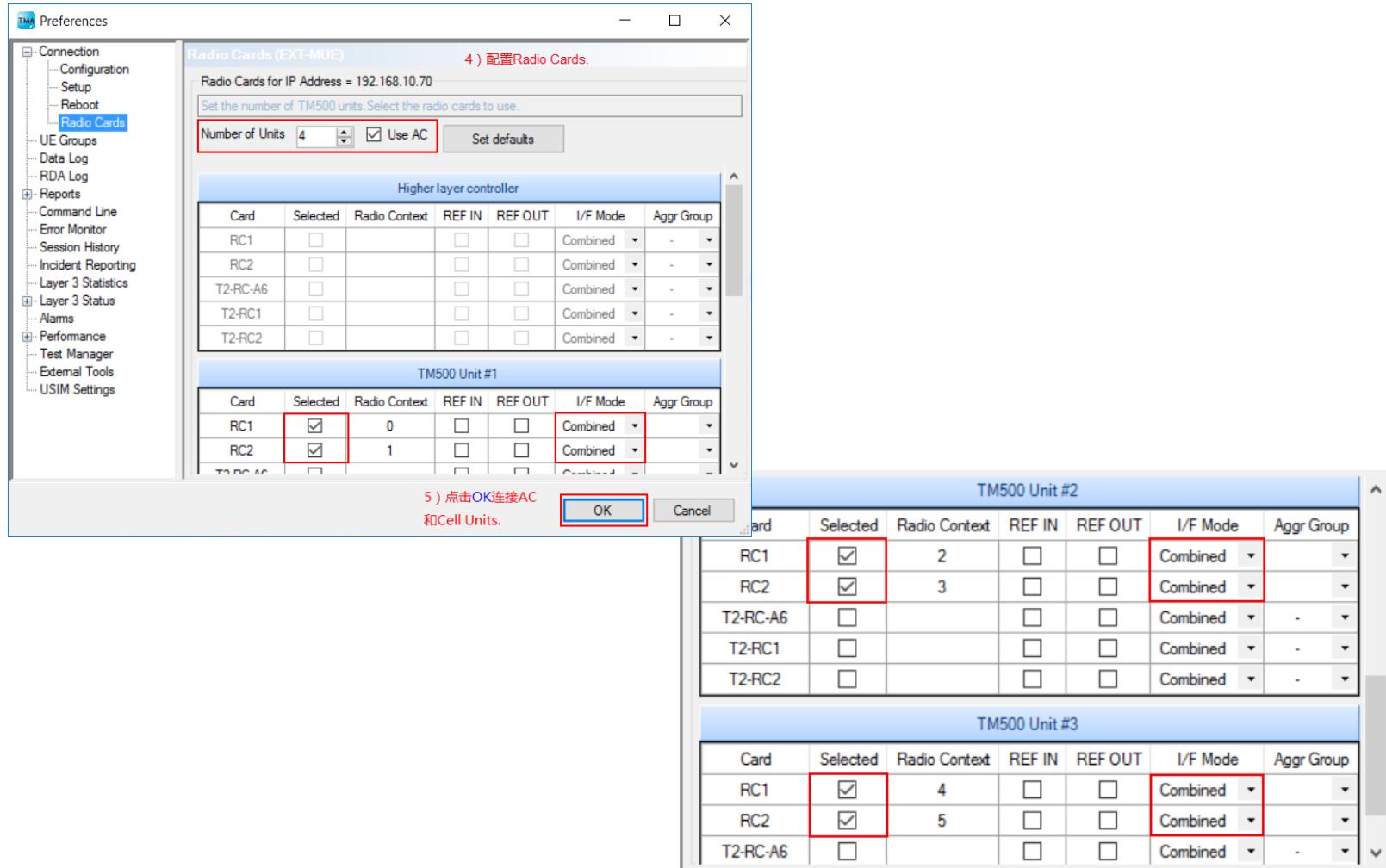
- 配置 *Software Licensing* 模式。



– 如下图所示配置Setup。



– 如下图所示配置Radio Cards，然后点击OK连接AC和Cell Units.



- 在Command Line窗口运行如下命令查询System ID。
forw swl getsystemid

The screenshot shows a Command Line window with the following text output:

```
15/07/16 11:28:40:818 GSTS
15/07/16 11:28:40:833 C: GSTS 0x00 Ok Reset
15/07/16 11:28:40:849 ABOT 0 0 0
15/07/16 11:28:40:864 C: ABOT 0x00 Ok 0x0000001e
15/07/16 11:28:40:880 MULT 192.168.10.9
15/07/16 11:28:44:913 C: MULT 0x00 Ok
15/07/16 11:28:46:944 SCFG SWL
15/07/16 11:28:47:413 I: CMPI 0x0 Warning: Selected radio card is not compatible
15/07/16 11:28:48:351 C: SCFG 0x00 Ok SWL
15/07/16 11:28:48:351 STRT
15/07/16 11:28:48:367 C: STRT 0x00 Ok
15/07/16 11:28:48:492 GVER
15/07/16 11:28:48:492 C: GVER 0x00 Ok
15/07/16 11:28:48:492 PPC-0:
15/07/16 11:28:48:492      BSP: 1.10.02/d
15/07/16 11:28:48:492      APP: TM500 LTE VERSION: LMF7.0.3 Rev2
15/07/16 11:28:48:492      Version Label: LMF_7_0_3_REV02
15/07/16 11:29:59:833 forw swl getstatus
15/07/16 11:29:59:833 C: FORW 0x00 Ok SWL
15/07/16 11:29:59:833      Current key:
15/07/16 11:29:59:833      Licensed features: none
6 ) 运行 forw swl getsystemid.
15/07/16 11:31:09:238 forw swl getsystemid
15/07/16 11:31:09:238 C: FORW 0x00 Ok SWL 20000000032386da5cf06f2d2360d883f9ded45f0ad3d
```

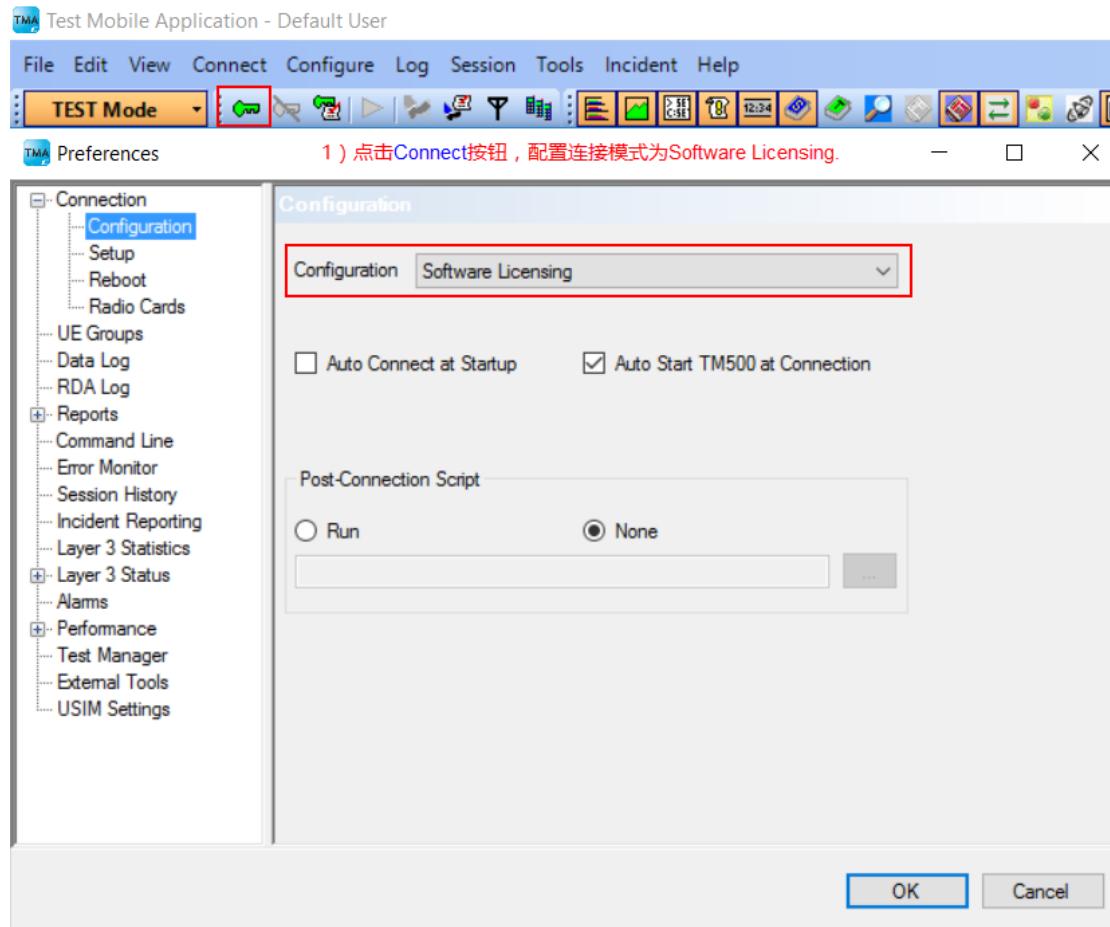
The input field at the bottom contains the command `forw swl getsystemid`, and the "Send" button next to it is highlighted with a red box.

- 在Command Line窗口运行如下命令查询GFRU信息，以读取AC以及Cell Units的序列号以及所有板卡信息。

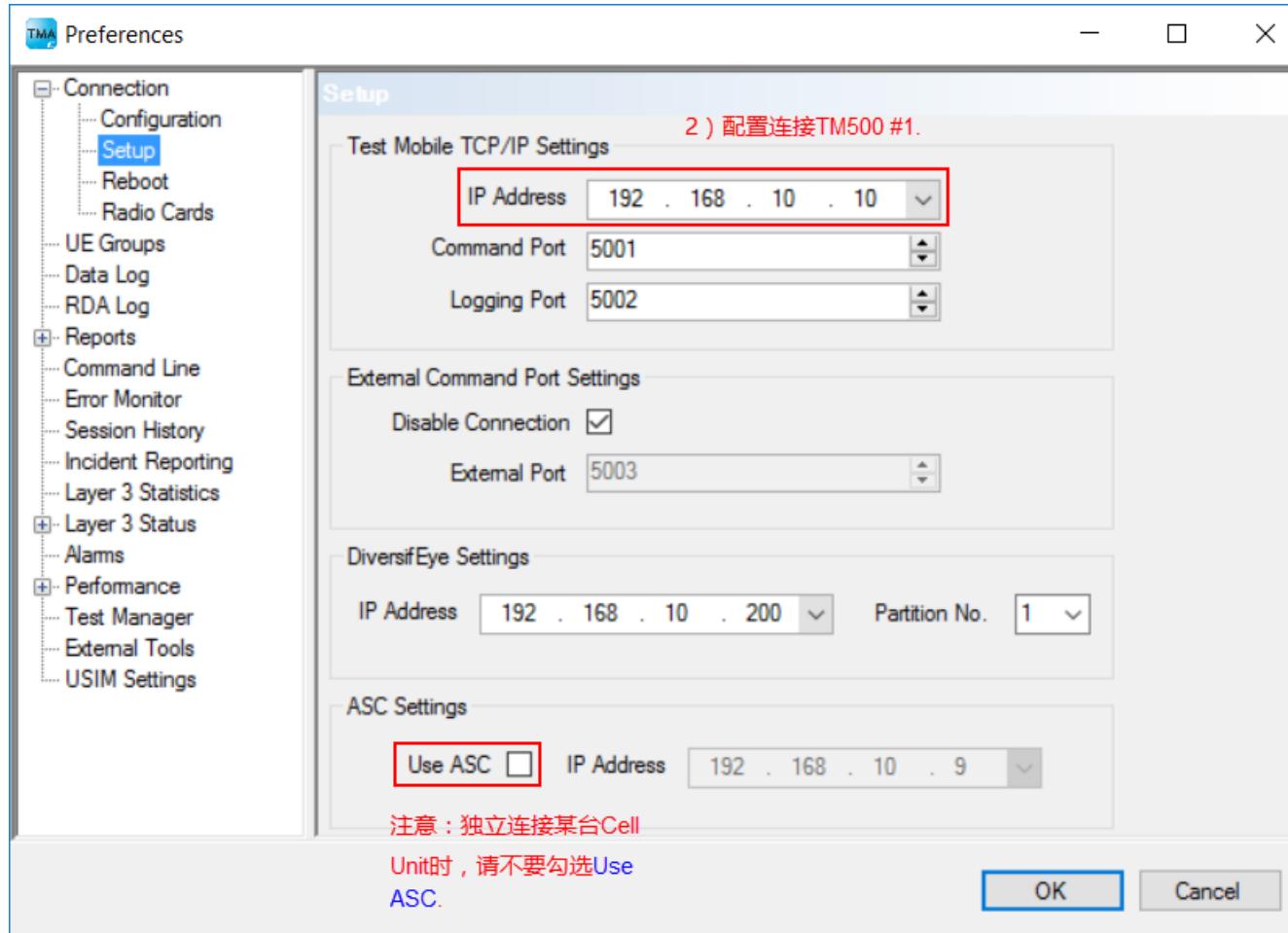
The screenshot shows a Windows-style Command Line interface window titled "Command Line". The window contains a scrollable text area displaying a log of system events and configuration commands. The log includes entries such as "DISCONNECT", "CONNECT", "GSTS", "ABOT", "MULT", "SCFG", "STRT", "GVER", and various version and label information. At the bottom of the window, there is a navigation bar with tabs labeled "Command Line" (which is highlighted in orange), "Error Monitor", "Current Session", and "Layer 3 Statistics". A red box highlights the "GFRU" tab, which is currently inactive. To the right of the tabs is a "Send" button.

```
22/07/16 13:17:18:810 C: DISCONNECT 0x00 OK
22/07/16 13:20:16:166 $$CONNECT
22/07/16 13:20:16:994 C: CONNECT 0x00 ok. Waiting for User to Configure Test Mobile
22/07/16 13:20:16:994 GSTS
22/07/16 13:20:16:994 C: GSTS 0x00 Ok Reset
22/07/16 13:20:17:009 ABOT 0 0 0
22/07/16 13:20:17:025 C: ABOT 0x00 Ok 0x0000001e
22/07/16 13:20:17:025 MULT 192.168.10.9
22/07/16 13:20:22:059 C: MULT 0x00 Ok
22/07/16 13:20:24:075 SCFG SWL
22/07/16 13:20:26:060 C: SCFG 0x00 Ok SWL
22/07/16 13:20:26:060 STRT
22/07/16 13:20:26:075 C: STRT 0x00 Ok
22/07/16 13:20:26:200 GVER
22/07/16 13:20:26:200 C: GVER 0x00 Ok
22/07/16 13:20:26:200 PPC-0:
22/07/16 13:20:26:200     BSP: 1.10.02/d
22/07/16 13:20:26:200     APP: TM500 LTE VERSION: LMF7.3.0 Rev1
22/07/16 13:20:26:200 Version Label: LMF_7_3_0_REV01
22/07/16 13:20:30:577 GFRU
```

- TM500 #1 System ID查询步骤
 - 如下图所示配置Software Licensing模式。



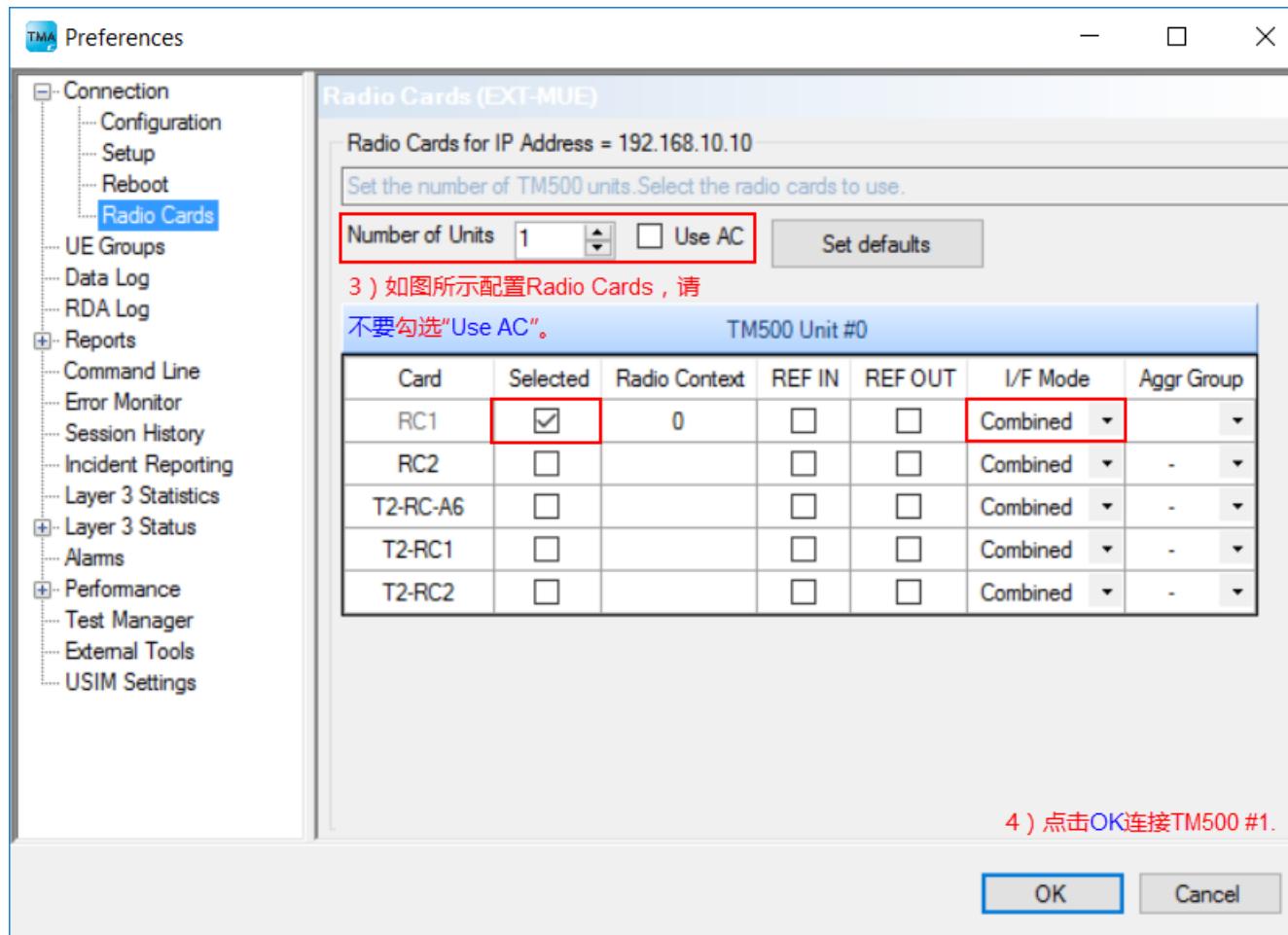
- 如下图所示配置TM500 #1 Setup.



查询TM500 #1 System ID

COBHAM

- 如下图所示配置Radio Cards。



查询TM500 #1 System ID

COBHAM

- 在Command Line窗口运行如下命令查询System ID。
forw swl getsystemid

The screenshot shows a 'Command Line' window with the following text output:

```
15/07/16 12:13:08:626 $$CONNECT
15/07/16 12:13:09:408 C: CONNECT 0x00 ok. Waiting for User to Configure Test Mobile
15/07/16 12:13:09:408 GSTS
15/07/16 12:13:09:408 C: GSTS 0x00 Ok Reset
15/07/16 12:13:09:423 ABOT 0 0 0
15/07/16 12:13:09:439 C: ABOT 0x00 Ok 0x0000001e
15/07/16 12:13:11:471 SCFG SWL
15/07/16 12:13:11:643 I: CMPI 0x0 Warning: Selected radio card is not compatible
15/07/16 12:13:11:815 C: SCFG 0x00 Ok SWL
15/07/16 12:13:11:815 STRT
15/07/16 12:13:11:830 C: STRT 0x00 Ok
15/07/16 12:13:11:830 GVER
15/07/16 12:13:11:846 C: GVER 0x00 Ok
15/07/16 12:13:11:846 PPC-0:
15/07/16 12:13:11:846     BSP: 1.10.02/d
15/07/16 12:13:11:846     APP: TM500 LTE VERSION: LMF7.0.3 Rev2
15/07/16 12:13:11:846     Version Label: LMF_7_0_3_REV02
15/07/16 12:13:19:241 forw swl getstatus
15/07/16 12:13:19:256 C: FORW 0x00 Ok SWL
15/07/16 12:13:19:256     Current key:
15/07/16 12:13:19:256     Licensed features: none
15/07/16 12:13:42:411 forw swl getsystemid
15/07/16 12:13:42:427 C: FORW 0x00 Ok SWL 2000000003228931c6e44ed4fae81fd36e062a24befa7
15/07/16 12:13:49:656 forw swl setkey 3000200000000001800000340442090043c000000086000c00c0100000000000
15/07/16 12:13:51:054 C: FORW 0x00 Ok SWL Key accepted
```

At the bottom of the window, there is a red box around the text '5) 运行 forw swl getsystemid'.

In the bottom-left corner of the input field, there is a red box around the text 'forw swl getsystemid'. To its right is a red-bordered 'Send' button.

The bottom navigation bar includes tabs: Command Line (selected), Error Monitor, Current Session, and Layer 3 Statistics.

查询TM500 #2/#3 System ID

COBHAM

- 请根据TM500 #1类似的步骤，依次查询TM500 #2和TM500 #3的System ID。
- 导出Session log。

The screenshot shows the 'Current Session' window with the following details:

Date	Time	Activity	Test	To Folder	UE	Command
7/22/2016	13:22:19.434			To Zip		Product Name: "12-Slot MicroTCA"
7/22/2016	13:22:19.434					Serial Number: "000000000003146"
7/22/2016	13:22:19.434					Part Number: "23005432"
7/22/2016	13:22:19.434					Product info for chassis: 4
7/22/2016	13:22:19.434					Manufacturer: "Schroff GmbH"
7/22/2016	13:22:19.434					Product Name: "12-Slot MicroTCA"
7/22/2016	13:22:19.434					Product Model Number: "1189003"
7/22/2016	13:22:19.434					Product Version Number: "01"
7/22/2016	13:22:19.434					Product Serial Number: "18-TM500-3003146"
7/22/2016	13:22:19.434					Fru File Id: "18-TM500-3003146"
7/22/2016	13:22:19.434					Custom Fields: "11850012ABBI0-ca"
7/22/2016	13:22:31.062					#\$DISCONNECT
7/22/2016	13:22:31.265	TM Disconnect				C: DISCONNECT 0x00 OK
7/22/2016	13:22:31.265					

- 请把Session log发送至负责TM500接口的销售和相关FAE，并抄送邮件至 TM500Support.CN@cobham.com，以申请licenses.

备注：除了通过GFRU读取AC和Cell Units序列号外，也可直接从TM500背面板的右上角获取TM500序列号，例如：18-TM500-3003228.

- AC license安装步骤

- 步骤1)至步骤5)请参阅“*查询AC System ID*”步骤1)至步骤5)。
- 查询AC当前的license信息： `forw swl getstatus`

The screenshot shows a Command Line window with the following text output:

```
15/07/16 11:28:40:113 # $$CONNECT
15/07/16 11:28:40:818 C: CONNECT 0x00 ok. Waiting for User to Configure Test Mobile
15/07/16 11:28:40:818 GSTS
15/07/16 11:28:40:833 C: GSTS 0x00 Ok Reset
15/07/16 11:28:40:849 ABOT 0 0 0
15/07/16 11:28:40:864 C: ABOT 0x00 Ok 0x0000001e
15/07/16 11:28:40:880 MULT 192.168.10.9
15/07/16 11:28:44:913 C: MULT 0x00 Ok
15/07/16 11:28:46:944 SCFG SWL
15/07/16 11:28:47:413 I: CMPI 0x0 Warning: Selected radio card is not compatible
15/07/16 11:28:48:351 C: SCFG 0x00 Ok SWL
15/07/16 11:28:48:351 STRT
15/07/16 11:28:48:367 C: STRT 0x00 Ok
15/07/16 11:28:48:492 GVER
15/07/16 11:28:48:492 C: GVER 0x00 Ok
15/07/16 11:28:48:492 PPC-0:
15/07/16 11:28:48:492     BSP: 1.10.02/d
15/07/16 11:28:48:492     APP: TM500 LTE VERSION: LMF7.0.3 Rev2
15/07/16 11:28:48:492     Version Label: LMF_7_0_3_REV02
15/07/16 11:29:59:833 forw swl getstatus
15/07/16 11:29:59:833 C: FORW 0x00 Ok SWL
15/07/16 11:29:59:833     Current key:
15/07/16 11:29:59:833     Licensed features: none
```

Annotations in red text on the right side of the window:

- 6) 运行 `forw swl getstatus`,
- 查询当前AC的license.

The input field at the bottom left contains the command `forw swl getstatus`, and the "Send" button is highlighted with a red border.

AC

- 请在TMA Command Line窗口直接运行获取的license key.

- License安装成功后，再次查询license信息，以确认新特性对应的license均已添加。

Command Line

```
15/07/16 11:31:09:238 C: FORW 0x00 Ok SWL 20000000032386da5cf06f2d2360d883f9ded45f0ad3d
15/07/16 11:32:53:568 forw swl setkey 3000100000000001800000340442090040c000001886000c00c0000000000
15/07/16 11:32:54:959 C: FORW 0x00 Ok SWL Key accepted License安装成功。
15/07/16 11:33:15:059 forw swl getstatus
15/07/16 11:33:15:074 C: FORW 0x00 Ok SWL
15/07/16 11:33:15:074 Current key: 3000100000000001800000340442090040c000001886000c00c00000
15/07/16 11:33:15:074 Licensed features:
15/07/16 11:33:15:074     LTE Multi-UE CAT 3
15/07/16 11:33:15:074     LTE Multi-UE CAT 4
15/07/16 11:33:15:074     LTE FDD EXT-MUE HL I/F
15/07/16 11:33:15:074     LTE TDD EXT-MUE HL I/F
15/07/16 11:33:15:074     LTE EXT-MUE ROHC
15/07/16 11:33:15:074     LTE EXT-MUE DL Mobility Models
15/07/16 11:33:15:074     LTE CUE/EXT-MUE Multi-Cell Handover
15/07/16 11:33:15:074     LTE EXT-MUE UL Online Mobility Models
15/07/16 11:33:15:074     LTE-A EXT-MUE 2 Carrier Aggregation
15/07/16 11:33:15:074     LTE-A EXT-MUE Tx Mode 9
15/07/16 11:33:15:074     LTE ZUC Algorithm
15/07/16 11:33:15:074     LTE FDD CUE -x1000
15/07/16 11:33:15:074     LTE TDD CUE -x1000
15/07/16 11:33:15:074     LTE FDD EXT-MUE -x12000
15/07/16 11:33:15:074     LTE TDD EXT-MUE -x12000
15/07/16 11:33:15:074     LTE EXT-MUE 8x2 MIMO
15/07/16 11:33:15:074     LTE EXT-MUE 4x2 MIMO
15/07/16 11:33:15:074     LTE EXT-MUE CAT 5
15/07/16 11:33:15:074     LTE FDD CUE -x1500
15/07/16 11:33:15:074     LTE TDD CUE -x1500
15/07/16 11:33:15:074     LTE-A EXT-MUE 256 QAM
15/07/16 11:33:15:074     LTE-A EXT-MUE 2 Carrier UL Aggregation
8 ) 再次查询license信息，以
确认新特性对应的license均已
添加。
```

forw swl getstatus

Send

Command Line Error Monitor Current Session Layer 3 Statistics

License查询与安装

TM500 #1

- TM500 #1 license安装步骤

- 步骤1)至步骤4)请参阅“*查询TM500 #1 System ID*”步骤1)至步骤4)。
- 步骤5)至步骤7)如下图所示。

The screenshot shows a Command Line window with the following log output:

```

Command Line
15/07/16 12:13:19:241 forw swl getstatus 5) 运行 forw swl getstatus , 查询
15/07/16 12:13:19:256 C: FORW 0x00 Ok SWL 当前AC的license.
15/07/16 12:13:19:256 Current key:
15/07/16 12:13:19:256 Licensed features: none
15/07/16 12:13:42:411 forw swl getsystemid
15/07/16 12:13:42:427 C: FORW 0x00 Ok SWL 2000000003228931c6e44ed4fae81fd36e062a24befa7
15/07/16 12:13:49:656 forw swl setkey 3000200000000001800000340442090043c000000086000c00c0100000000
15/07/16 12:13:51:054 C: FORW 0x00 Ok SWL Key accepted 6) 运行license key.
15/07/16 12:14:30:239 forw swl getstatus
15/07/16 12:14:30:255 C: FORW 0x00 Ok SWL
15/07/16 12:14:30:255 Current key: 3000200000000001800000340442090043c000000086000c00c0100000000
15/07/16 12:14:30:255 Licensed features:
15/07/16 12:14:30:255 LTE Multi-UE CAT 3
15/07/16 12:14:30:255 LTE Multi-UE CAT 4
15/07/16 12:14:30:255 息,以确认新特性对应 LTE FDD EXT-MUE HL I/F
15/07/16 12:14:30:255 的license均已添加。 LTE TDD EXT-MUE HL I/F
15/07/16 12:14:30:255 LTE EXT-MUE ROHC
15/07/16 12:14:30:255 LTE EXT-MUE DL Mobility Models
15/07/16 12:14:30:255 LTE CUE/EXT-MUE Multi-Cell Handover
15/07/16 12:14:30:255 LTE EXT-MUE UL Online Mobility Models
15/07/16 12:14:30:255 LTE-A EXT-MUE 2 Carrier Aggregation
15/07/16 12:14:30:255 LTE-A EXT-MUE Tx Mode 9
15/07/16 12:14:30:255 LTE ZUC Algorithm
15/07/16 12:14:30:255 LTE FDD EXT-MUE -x3600
15/07/16 12:14:30:255 LTE TDD EXT-MUE -x3600
15/07/16 12:14:30:255 LTE FDD CUE -x1000
15/07/16 12:14:30:255 LTE TDD CUE -x1000
15/07/16 12:14:30:255 LTE EXT-MUE 8x2 MIMO
15/07/16 12:14:30:255 LTE EXT-MUE 4x2 MIMO
15/07/16 12:14:30:255 LTE EXT-MUE CAT 5
15/07/16 12:14:30:255 LTE FDD CUE -x1500
15/07/16 12:14:30:255 LTE TDD CUE -x1500
15/07/16 12:14:30:255 LTE-A EXT-MUE 256 QAM
15/07/16 12:14:30:255 LTE-A EXT-MUE 2 Carrier UL Aggregation
    
```

The log shows the execution of the 'forw swl getstatus' command (step 5), the current license (step 1), the system ID (step 2), the successful key acceptance (step 6), and the resulting updated license features (step 7). The license key accepted is highlighted in red.

TM500 #2 & TM500 #3

- TM500 #2和TM500 #3 license安装步骤类似TM500 #1。
- AC及Cell Units安装完成后，请导出Session log，并将此log发送至负责TM500接口的相关FAE，以便进一步确认新的license准确无误。

Date	Time	Activity	Test	UE	Command
7/22/2016	13:22:19.434				Product Name: "12-Slot MicroTCA"
7/22/2016	13:22:19.434				Serial Number: "0000000000003146"
7/22/2016	13:22:19.434				Part Number: "23005432"
7/22/2016	13:22:19.434				Product info for chassis: 4
7/22/2016	13:22:19.434				Manufacturer: "Schroff GmbH"
7/22/2016	13:22:19.434				Product Name: "12-Slot MicroTCA"
7/22/2016	13:22:19.434				Product Model Number: "1189003"
7/22/2016	13:22:19.434				Product Version Number: "01"
7/22/2016	13:22:19.434				Product Serial Number: "18-TM500"
7/22/2016	13:22:19.434				Fru File Id: "18-TM500-3003146"
7/22/2016	13:22:19.434				Custom Fields: "11850012ABB10-ca"
7/22/2016	13:22:31.062				\$\$\$\$DISCONNECT
7/22/2016	13:22:31.265		TM Disconnect		C: DISCONNECT 0x00 OK
7/22/2016	13:22:31.265				

Command Line | Error Monitor | Current Session | Layer 3 Statistics |

- D1000 License查询步骤如下所示。

1) 打开网页浏览器访问D1000 Edge : 192.168.10.200

Home Admin d1000 Admin Client Install Automation Miscellaneous Online Help

Welcome to TeraVM

Quick Links Menu

- Download TeraVM 11.4 Client
- Upgrade System
- Backup Test Configuration
- Restore Test Configuration
- Global Settings
- Card Resource Usage
- Download System Logs
- TeraVM Chassis Information

2) 点击访问TeraVM Chassis Information.

System Information

IP Address:	192.168.10.200
Network Mask:	255.255.0.0
MAC Address:	14:18:77:42:A6:67
Software Version:	11.4
Software Build:	613
Connected Clients:	192.168.10.100

US : 1900 McCarthy Boulevard, Suite 301, Milpitas, CA 95035 Tel: [408-385-7630](tel:408-385-7630)
Europe : Adelphi Plaza (Ground Floor), Upper Georges Street, Dun Laoghaire, Co. Dublin, Ireland. Tel: [+353 \(1\) 236 7002](tel:+353(1)2367002)

<http://www.cobhamwireless.com/>

http://192.168.10.200/miscellaneous

D1000 License查询

COBHAM

The screenshot shows a Microsoft Edge browser window with the URL 192.168.10.200. The page title is "Microsoft Edge". The content of the page is a basic authentication dialog from "TeraVM Configuration Utilities". The dialog asks for a user name and password. The user name field contains "diverAdmin" and the password field contains "diversifEye". A warning message at the top of the dialog states: "Warning: Your user name and password will be sent using basic authentication on a connection that isn't secure." Below the dialog, the Cobham TeraVM D1000 Admin interface is visible, showing a navigation bar with Home, Admin, d1000 Admin, Client Install, and a sidebar with various options like Quotas, Downloads, Backups, Restarts, Cache, and Logs.

System Information	
IP Address:	192.168.10.200
Network Mask:	255.255.0.0
MAC Address:	14:18:77:42:A6:67
Software Version:	11.4
Software Build:	613
Connected Clients:	192.168.10.100

US : 1900 McCarthy Boulevard, Suite 301, Milpitas, CA 95035 Tel: [408-385-7630](tel:408-385-7630)
Europe : Adelphi Plaza (Ground Floor), Upper Georges Street, Dun Laoghaire, Co. Dublin, Ireland. Tel: [+353 \(1\) 236 7002](tel:+353(1)2367002)
<http://www.cobhamwireless.com/>

TeraVM Licence Information:

Licences are installed for the following applications:

cli
ddos
dhcp
dual_hosted_voip_b2b
dual_hosted_voip_ua
ftp
http
http_adaptive_bit_rate
latency
multi_user
p2p
p2p_tcp_playback
passive_analysis
ping
pop3
pppoe
raw_port_playback
rtp
rtsp
smtp
tcp_playback
telepresence
teraflo
thresholding
twamp
udp_playback
voip
voip_b2b

4) 查看D1000 license信息。

D1000 License查询

COBHAM

The screenshot shows a web-based administration interface for a COBHAM TeraVM system. The URL in the address bar is 192.168.10.200/admin/system/chassis.

The top navigation bar includes links for Home, Admin, d1000 Admin, Client Install, Automation, Miscellaneous, and Online Help. The Admin link is currently selected.

The main content area displays the following sections:

- Chassis Info:** A table with columns for Chassis Info, Download, and Reload. The Download button is highlighted with a red box.
- TeraVM System Information:** A large text block containing system configuration files and logs. It includes parameters like CHASSIS_TYPE=d1000 and hardware_type=d1000, along with a detailed kickstart configuration section.
- System Information:** A table listing system details:

System Information	
IP Address:	192.168.10.200
Network Mask:	255.255.0.0
MAC Address:	14:18:77:42:A6:67
Software Version:	11.4
Software Build:	613
Connected Clients:	192.168.10.100 192.168.10.28 192.168.10.200

A red box highlights the "Download" button in the Chassis Info section.

固件升级



- 固件是指TM500射频卡对应的固件，主要包括API/CON/SIG/MOD TX/MOD RX.

```
UMBRA-1
    API: 20.0.0  Product: 3
    APP: 1.0.171  Built: Jul  5 2016 18:21:13
    CON: 3.5.3  Build: 0
    SIG: 2.1.1  Build: 46
    MMC: 1.7

    Carrier:      <Hardware Specific>
    PCB:         <Hardware Specific>
    SN:          <Hardware Specific>
    BarCode:     <Hardware Specific>
    MOD TX: 0.0.17  Build: 16
    MOD RX: 0.0.34  Build: 40
    Type:        <Hardware Specific>
    PCB:         <Hardware Specific>
    SN:          <Hardware Specific>
    BarCode:     <Hardware Specific>
```

- 每个TM500软件版本对应的固件信息可通过其Release Note的*Verifying Firmware Versions*章节查询。
- 不同的TM500软件版本所对应的固件如果有差异的话，首先需要升级固件，然后才能配置MTS Mode运行脚本。

● 固件升级步骤

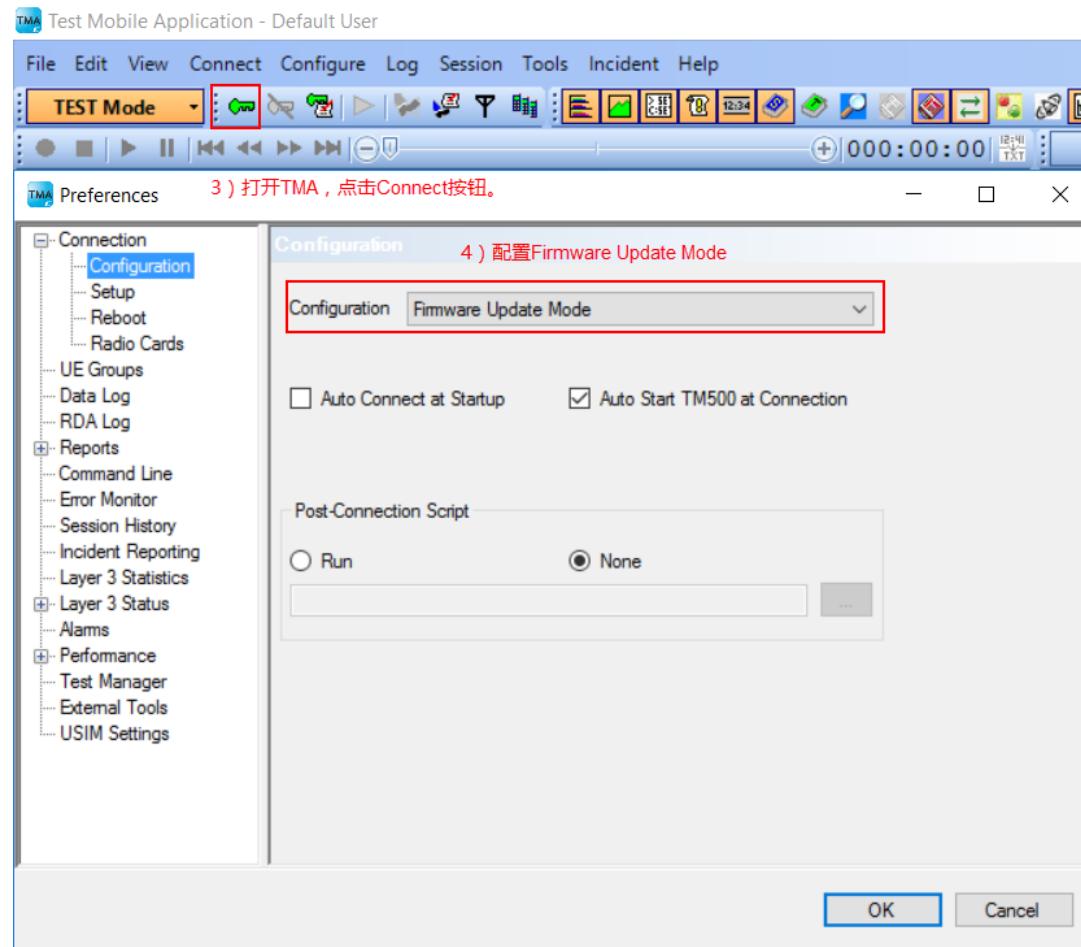
- 如果刚安装好新的TM500软件并且*tm500*用户组FileZilla Server共享路径已经配置完成，请通过PDU下电重启AC以及所有Cell Units，以加载新的软件。

The screenshot shows the Raritan PX iPDU web interface. On the left, there's a navigation tree with 'my PX (192.168.10.4)' expanded, showing 'Inlet I1', 'Outlets', 'Overcurrent Protectors', 'Peripheral Devices', and 'Feature Port'. The main area has tabs for 'Outlets' and 'Sockets'. The 'Outlets' tab displays a table of outlets with columns: #, Name (Label), Status, Current, Active Power, Power Factor, Non Critical, and Receptacle Type. Outlets 2, 4, 6, and 10 are highlighted with red boxes. Below the table, instructions in red text say '1) 勾选TM500_1 , TM500_2 , TM500_3以及TM500_7.' and '2) 点击Cycle下电重启。' At the bottom, there are buttons for 'Load Shedding', 'Non-critical Outlet Setup', 'Switch outlets 2, 4, 6 and 10: [On|Off|Cycle]', 'Reset Active Energy', 'Setup', 'Bulk Setup', and a 'Logout' button.

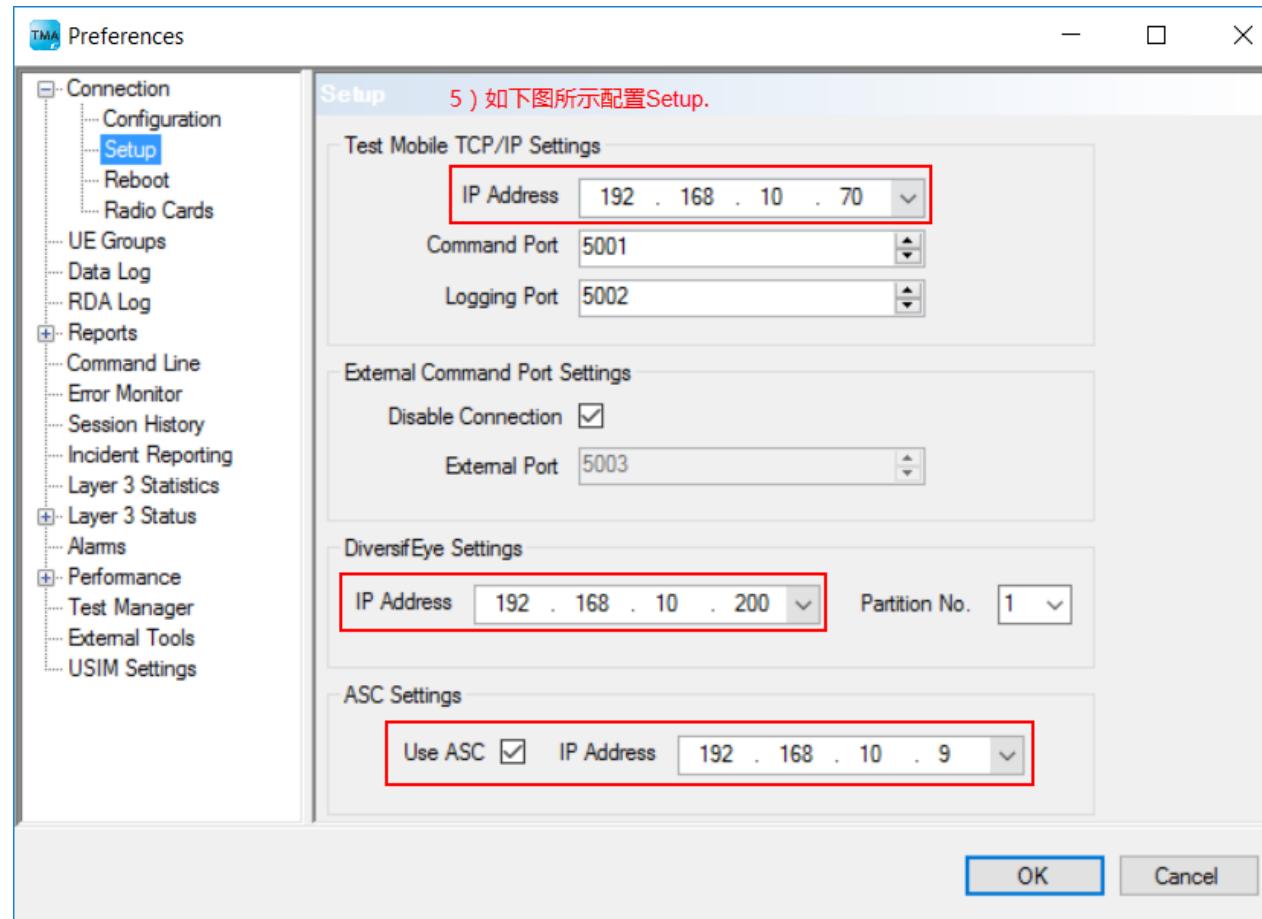
#	Name (Label)	Status	Current	Active Power	Power Factor	Non Critical	Receptacle Type
1	ASC (SRIO Controller) (1)	on	0.2 A	22 W	0.58	False	IEC 60320 C19
2	TM500_3 (2)	on	2.6 A	579 W	0.97	False	IEC 60320 C19
3	TM500_4 (3)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
4	TM500_7(AC) (4)	on	1.1 A	226 W	0.91	False	IEC 60320 C19
5	Digi_portserver (5)	on	0.1 A	11 W	0.53	False	IEC 60320 C19
6	TM500_1 (6)	on	2.6 A	590 W	0.97	False	IEC 60320 C19
7	Shenick_Edge (7)	on	0.8 A	172 W	0.96	False	IEC 60320 C19
8	TM500_5 (8)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
9	HP_Switch (9)	on	0.2 A	21 W	0.49	False	IEC 60320 C19
10	TM500_2 (10)	on	2.6 A	581 W	0.97	False	IEC 60320 C19
11	Shenick_Core (11)	on	0.8 A	177 W	0.96	False	IEC 60320 C19
12	TM500_6 (12)	off	0.0 A	0 W	1.00	False	IEC 60320 C19

1) 勾选TM500_1 , TM500_2 , TM500_3以及TM500_7.
2) 点击Cycle下电重启。

- 打开TMA，配置Firmware Upgrade Mode。



– 确认Setup配置如下图所示。



- 如下图所示配置Radio Cards，点击OK以后TM500将自动检测是否需要升级固件。

The screenshot shows the TM500 Preferences window with the 'Radio Cards' option selected in the left sidebar. The main area displays three tables for configuring Radio Cards across three units:

- Higher layer controller:** A table with columns: Card, Selected, Radio Context, REF IN, REF OUT, I/F Mode, Aggr Group. It lists cards RC1, RC2, T2-RC-A6, T2-RC1, and T2-RC2. The 'Selected' column for RC1 and RC2 is checked.
- TM500 Unit #1:** A table with columns: Card, Selected, Radio Context, REF IN, REF OUT, I/F Mode, Aggr Group. It lists cards RC1, RC2, and T2-RC-A6. The 'Selected' column for RC1 and RC2 is checked. The 'Radio Context' column has values 0 and 1 respectively. The 'I/F Mode' column for RC1 and RC2 is set to 'Combined'.
- TM500 Unit #2:** A table with columns: Card, Selected, Radio Context, REF IN, REF OUT, I/F Mode, Aggr Group. It lists cards RC1, RC2, T2-RC-A6, T2-RC1, and T2-RC2. The 'Selected' column for RC1 and RC2 is checked. The 'Radio Context' column has values 2 and 3 respectively. The 'I/F Mode' column for RC1 and RC2 is set to 'Combined'.
- TM500 Unit #3:** A table with columns: Card, Selected, Radio Context, REF IN, REF OUT, I/F Mode, Aggr Group. It lists cards RC1, RC2, and T2-RC-A6. The 'Selected' column for RC1 and RC2 is checked. The 'Radio Context' column has values 4 and 5 respectively. The 'I/F Mode' column for RC1 and RC2 is set to 'Combined'.

Red boxes highlight the 'Selected' checkboxes for RC1 and RC2 in each unit's table, and red borders surround the 'Number of Units' input field (set to 4) and the 'Use AC' checkbox in the top header.

- 如果提示需要升级固件的话，请在**Command Line**窗口输入如下命令，然后点击**Send**并耐心等待固件升级顺利完成。

forw fum updaterradio

```

Command Line
15/07/16 15:00:46:729 I: CMPI FUM    SIG VHDL: 2.1.1 Build: 46, (2.1.1 Build: 46)
15/07/16 15:00:46:729 I: CMPI FUM    MOD TX VHDL: 0.0.17 Build: 16, (0.0.17 Build: 16)
15/07/16 15:00:46:729 I: CMPI FUM * MOD RX VHDL: 0.0.31 Build: 34, (0.0.34 Build: 40)
15/07/16 15:00:46:729 I: CMPI FUM    FUM API: 1.0.0 Product ID: -1, (1.0.0 Product ID: -1)
15/07/16 15:00:46:729 I: CMPI FUM    FUM App: 1.1.0 Build: 0, (1.1.0 Build: 0)
15/07/16 15:00:46:729 I: CMPI FUM    FUM VHDL: 2.0.28 Build: 174, (2.0.28 Build: 174)
15/07/16 15:00:46:729 I: CMPI FUM ****
15/07/16 15:00:46:729 I: CMPI FUM Updates REQUIRED or (available) 7 ) 点击OK后，检测提示
15/07/16 15:00:46:729 I: CMPI FUM Card: [0] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM Card: [1] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM Card: [2] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM Card: [3] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM Card: [4] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM Card: [5] CON MODRX
15/07/16 15:00:46:729 I: CMPI FUM No bootrom updates required
15/07/16 15:00:46:729 I: CMPI FUM Firmware Update ready
<

```

GVER

Command Line | Error Monitor | Current Session | Layer 3 Statistics | Command Line

```

15/07/16 15:06:19:140 I: CMPI FUM Auto updating:
15/07/16 15:06:19:140 I: CMPI FUM Card: [0] CON MODRX
15/07/16 15:06:19:140 I: CMPI FUM Card: [1] CON MODRX
15/07/16 15:06:19:140 I: CMPI FUM Card: [2] CON MODRX
15/07/16 15:06:19:140 I: CMPI FUM Card: [3] CON MODRX
15/07/16 15:06:19:140 I: CMPI FUM Card: [4] CON MODRX
15/07/16 15:06:19:140 I: CMPI FUM Card: [5] CON MODRX
15/07/16 15:06:19:140 C: FORW 0x0 Ok FUM
15/07/16 15:06:19:140 DO NOT SWITCH OFF OR DISCONNECT FROM THE TEST MOBILE
15/07/16 15:06:19:140 Do not reboot until all components have been updated
15/07/16 15:06:19:140 This procedure may take several minutes to complete
15/07/16 15:06:19:140 Please be patient
15/07/16 15:06:20:144 I: CMPI FUM Decompressing CON...
15/07/16 15:06:21:386 I: CMPI FUM Image size: 52645872 bytes
15/07/16 15:06:21:387 I: CMPI FUM Programming... This may take some time...
15/07/16 15:06:21:387 I: CMPI FUM FUM: Sent packet Tgt:1 Pkt:0 Len:50 Last:0 Progress: 0%
<

```

forw fum updaterradio

Send

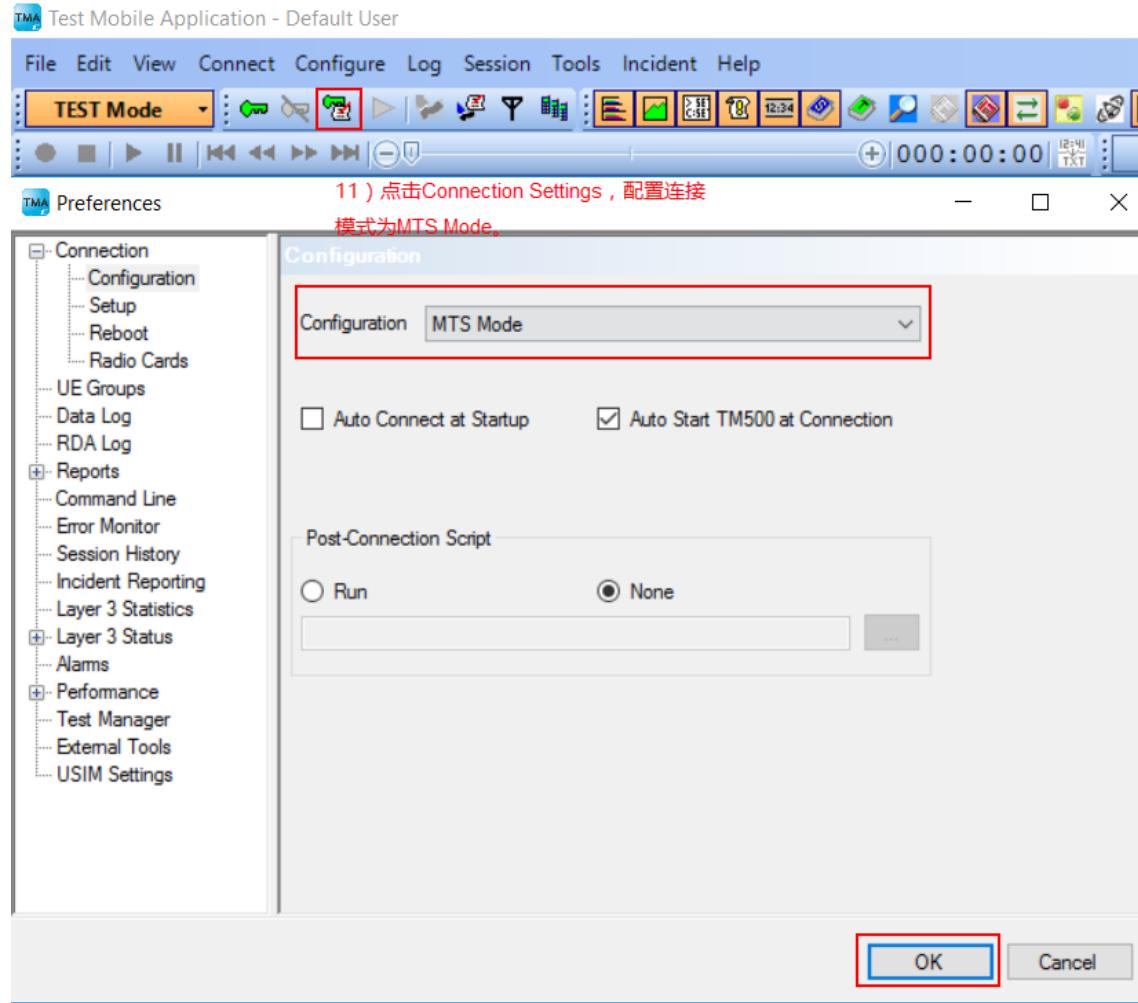
注意：固件升级过程中TM500不能断电，TM500和控制PC之前也不能断开连接，也不要关闭TMA，否则将导致射频卡损坏。

- 固件升级完成后，请先断开TMA连接，然后点击Connection Settings，连接模式修改为MTS Mode.

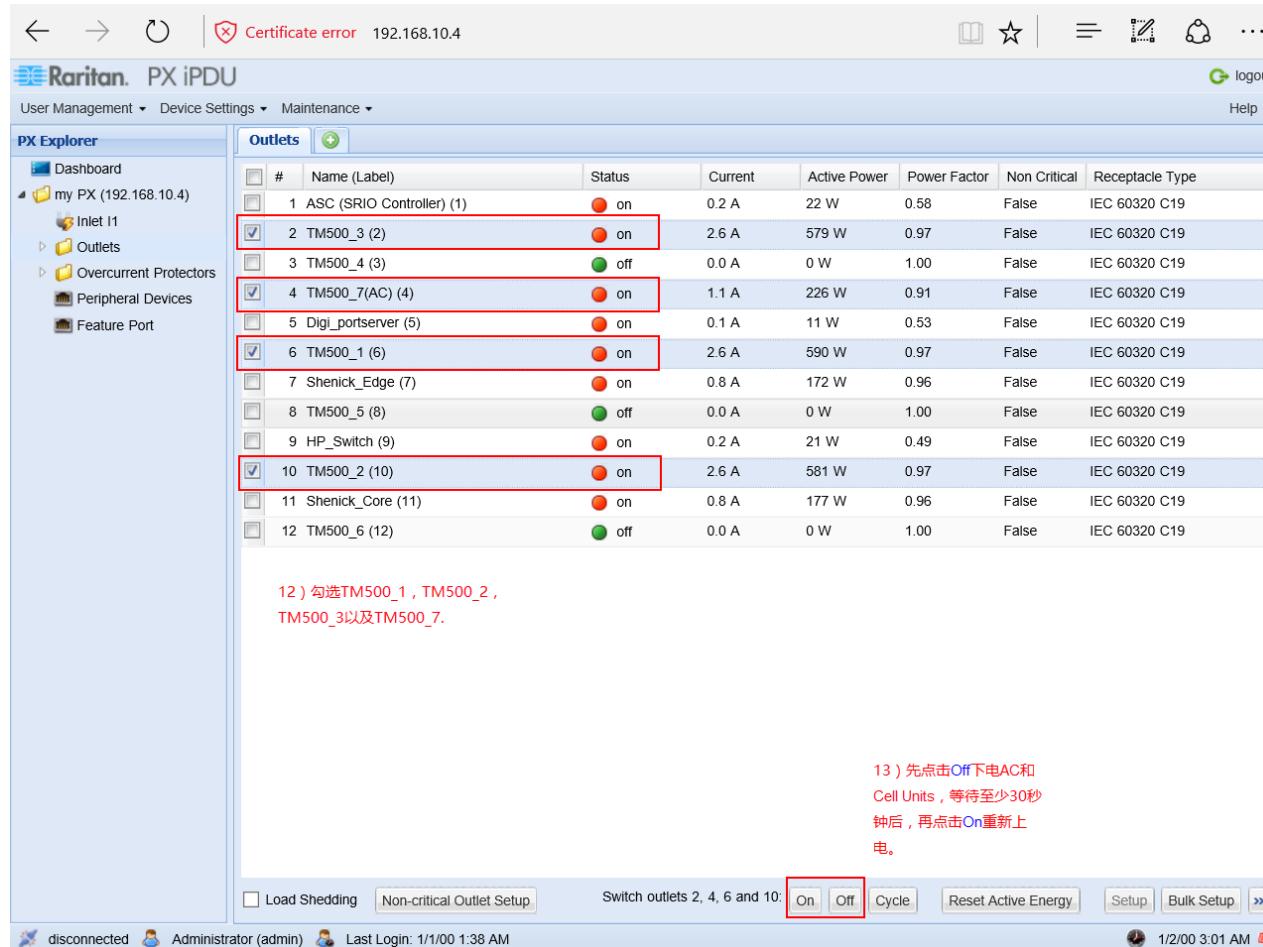
The screenshot shows a Command Line window with the following log entries:

```
15/07/16 15:14:45:592 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:10000 Len:50 Last:0 Progress: 6%
15/07/16 15:14:54:876 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:20000 Len:50 Last:0 Progress: 13%
15/07/16 15:15:04:164 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:30000 Len:50 Last:0 Progress: 20%
15/07/16 15:15:13:447 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:40000 Len:50 Last:0 Progress: 27%
15/07/16 15:15:22:730 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:50000 Len:50 Last:0 Progress: 33%
15/07/16 15:15:32:013 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:60000 Len:50 Last:0 Progress: 40%
15/07/16 15:15:41:297 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:70000 Len:50 Last:0 Progress: 47%
15/07/16 15:15:50:580 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:80000 Len:50 Last:0 Progress: 54%
15/07/16 15:15:59:864 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:90000 Len:50 Last:0 Progress: 60%
15/07/16 15:16:28:697 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:100000 Len:50 Last:0 Progress: 67%
15/07/16 15:16:29:213 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:110000 Len:50 Last:0 Progress: 74%
15/07/16 15:16:29:729 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:120000 Len:50 Last:0 Progress: 81%
15/07/16 15:16:30:245 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:130000 Len:50 Last:0 Progress: 87%
15/07/16 15:16:30:745 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:140000 Len:50 Last:0 Progress: 94%
15/07/16 15:16:31:151 I: CMPI FUM FUM: Sent packet Tgt:2 Pkt:147803 Len:11 Last:1 Progress: 100%
15/07/16 15:16:31:151 I: CMPI FUM UMBRA Update Complete 10 ) 固件升级完成。
```

The interface includes tabs for Command Line, Error Monitor, Current Session, and Layer 3 Statistics. The Command Line tab is selected.



- 请通过PDU下电AC和Cell Units，等待至少30秒钟以后再重新上电；等重启完成后，即可开始运行测试用例。



12) 勾选TM500_1 , TM500_2 ,
TM500_3以及TM500_7.

13) 先点击Off下电AC和
Cell Units , 等待至少30秒
钟后 , 再点击On重新上
电。

Load Shedding Non-critical Outlet Setup Switch outlets 2, 4, 6 and 10: >>

disconnected Administrator (admin) Last Login: 1/1/00 1:38 AM 1/2/00 3:01 AM

- 如果不需要升级固件的话请断开TMA连接，打开Connection Settings，修改模式为MTS Mode，然后通过PDU下电AC和所有Cell Units，等待**至少30秒钟**后再重新上电。

```
22/07/16 14:18:15:970 I: CMPI FUM FUM API: 1.0.0 Product ID: -1, (1.0.0 Product ID: -1)
22/07/16 14:18:15:970 I: CMPI FUM FUM App: 1.1.0 Build: 0, (1.1.0 Build: 0)
22/07/16 14:18:15:970 I: CMPI FUM FUM VHDL: 2.0.28 Build: 174, (2.0.28 Build: 174)
22/07/16 14:18:15:970 I: CMPI FUM =====
22/07/16 14:18:15:970 I: CMPI FUM Radio card: 5 => RC2, chassis 3, Module Type = 200
22/07/16 14:18:15:970 I: CMPI FUM Fail-safe update is active
22/07/16 14:18:15:970 I: CMPI FUM Versions: Current, (Update Package)
22/07/16 14:18:15:970 I: CMPI FUM CON API: 22.0.0 Product ID: 3, (22.0.0 Product ID: 3)
22/07/16 14:18:15:970 I: CMPI FUM CON App: 1.0.173 Build: 0, (1.0.173 Build: 0)
22/07/16 14:18:15:970 I: CMPI FUM CON VHDL: 3.5.3 Build: 0, (3.5.3 Build: 0)
22/07/16 14:18:15:970 I: CMPI FUM SIG VHDL: 2.1.1 Build: 46, (2.1.1 Build: 46)
22/07/16 14:18:15:970 I: CMPI FUM MOD TX VHDL: 0.0.17 Build: 16, (0.0.17 Build: 16)
22/07/16 14:18:15:970 I: CMPI FUM MOD RX VHDL: 0.0.34 Build: 40, (0.0.34 Build: 40)
22/07/16 14:18:15:970 I: CMPI FUM FUM API: 1.0.0 Product ID: -1, (1.0.0 Product ID: -1)
22/07/16 14:18:15:970 I: CMPI FUM FUM App: 1.1.0 Build: 0, (1.1.0 Build: 0)
22/07/16 14:18:15:970 I: CMPI FUM FUM VHDL: 2.0.28 Build: 174, (2.0.28 Build: 174)
22/07/16 14:18:15:970 I: CMPI FUM =====
22/07/16 14:18:15:970 I: CMPI FUM No bootrom updates required
22/07/16 14:18:15:970 I: CMPI FUM No Radio card updates required
22/07/16 14:18:15:970 I: CMPI FUM Firmware Update ready
```

E500下电



- E500下电前, 请确保:
 - AC和Cell Units均已通过PDU安全下电。
 - D1000 Edge & Core通过D100 Client GUI或SSH安全关机。

- AC & Cell Units下电步骤如下图所示。

#	Name (Label)	Status	Current	Active Power	Power Factor	Non Critical	Receptacle Type
1	ASC (SRIO Controller) (1)	on	0.2 A	22 W	0.58	False	IEC 60320 C19
<input checked="" type="checkbox"/>	2 TM500_3 (2)	on	2.6 A	579 W	0.97	False	IEC 60320 C19
	3 TM500_4 (3)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
<input checked="" type="checkbox"/>	4 TM500_7(AC) (4)	on	1.1 A	226 W	0.91	False	IEC 60320 C19
	5 Digi_portserver (5)	on	0.1 A	11 W	0.53	False	IEC 60320 C19
<input checked="" type="checkbox"/>	6 TM500_1 (6)	on	2.6 A	590 W	0.97	False	IEC 60320 C19
	7 Shenick_Edge (7)	on	0.8 A	172 W	0.96	False	IEC 60320 C19
	8 TM500_5 (8)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
	9 HP_Switch (9)	on	0.2 A	21 W	0.49	False	IEC 60320 C19
<input checked="" type="checkbox"/>	10 TM500_2 (10)	on	2.6 A	581 W	0.97	False	IEC 60320 C19
	11 Shenick_Core (11)	on	0.8 A	177 W	0.96	False	IEC 60320 C19
	12 TM500_6 (12)	off	0.0 A	0 W	1.00	False	IEC 60320 C19

2) 勾选TM500_1 , TM500_2 ,
TM500_3以及TM500_7.

3) 点击Off下电AC
和Cell Units.

Switch outlets 2, 4, 6 and 10: On Off Cycle Reset Active Energy Setup Bulk Setup >>

disconnected Administrator (admin) Last Login: 1/1/00 1:38 AM 1/2/00 3:01 AM

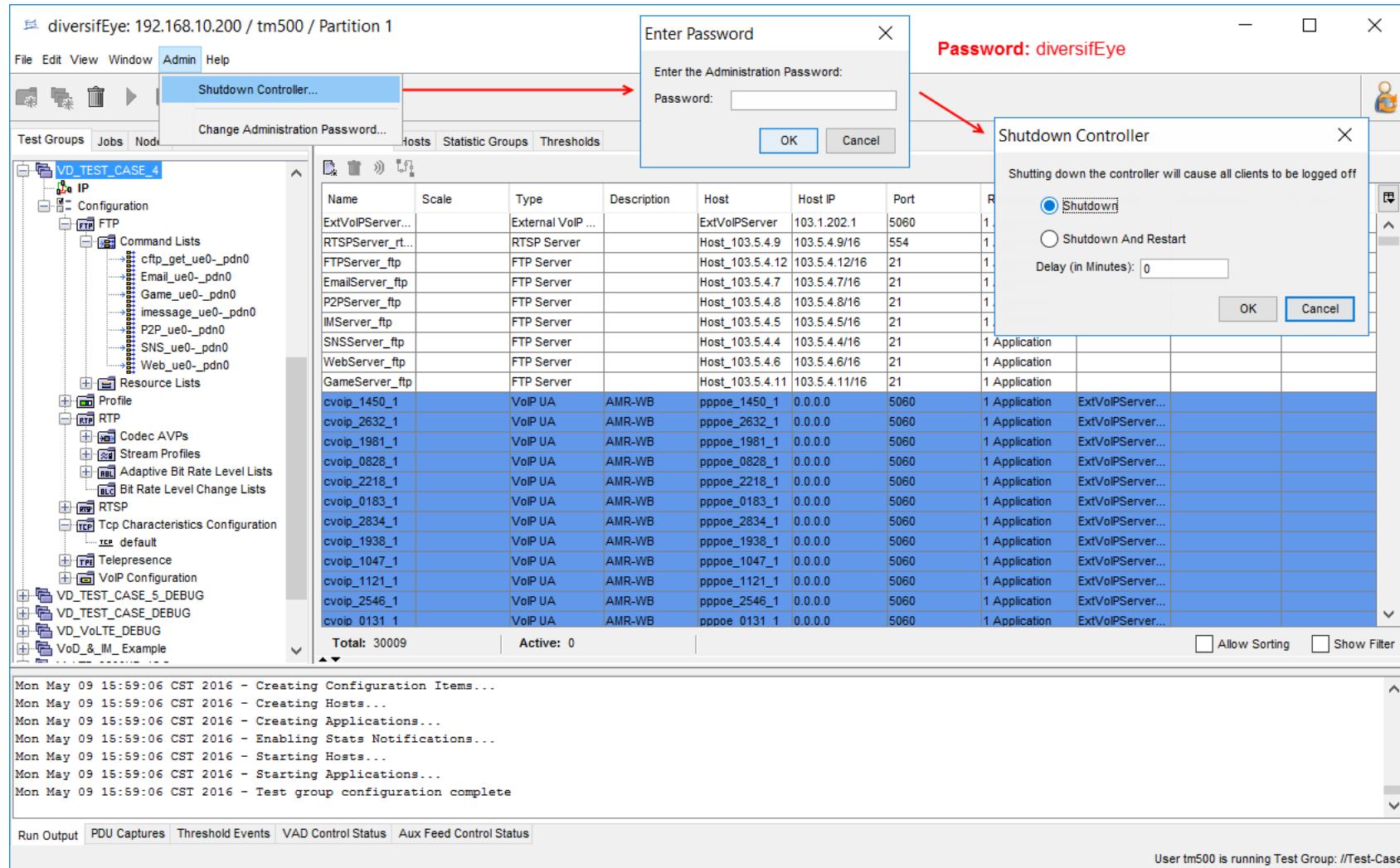
- D1000重启和关机的两种方式
 - D1000 Client GUI
 - 对于Edge & Core的配置，通过此方式将同时重启或下电两台设备。
 - SSH
 - 对于Edge & Core的配置，需要分别SSH到Edge（默认IP: 192.168.10.200）和Core（默认IP: 192.168.10.201）进行重启或下电的操作。
 - 重启
 - 用户名: reboot 密码: restartd
 - 关机
 - 用户名: poweroff 密码: shutdown

注意：异常断电可能导致RDA损坏，需要返厂维修，所以请不要强行下电或拔电源。

D1000重启和关机

COBHAM

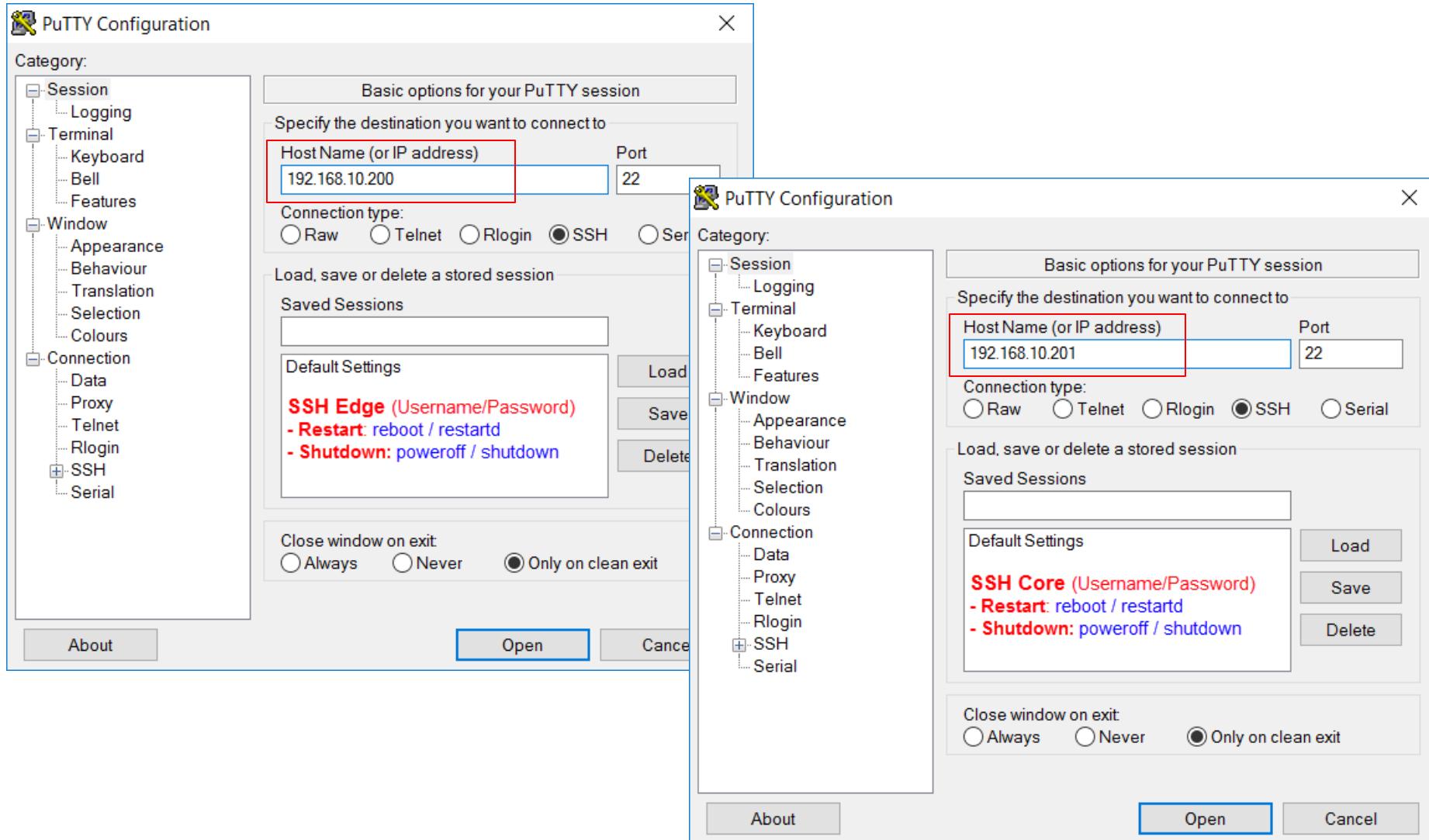
via D1000 Client GUI



D1000重启和关机

COBHAM

via SSH



- 请检查E500机柜，再次确认AC和所有Cell Units的均已下电成功（所有板卡的指示灯不亮）。
- 检查D1000 Edge & Core的电源按钮，指示灯不亮表明D1000已成功关机。



- 准备就绪，可开始下电E500。

The screenshot shows the Raritan PX iPDUs web interface. On the left, the 'PX Explorer' sidebar lists various device categories and their sub-devices. The 'Outlets' tab is selected, displaying a table of 12 outlets. Each outlet row includes a checkbox, the outlet number, name, status (red dot for on, green dot for off), current draw, active power, power factor, non-critical status, and receptacle type. Outlets 1, 5, 7, 9, 10, and 11 are currently on. Below the table, a note in blue text reads: '注意：ASC/Digi_PortServer/HP_Switch/Shenick_Edge /Shenick_Core请保持上电状态。' At the bottom, there are buttons for 'Load Shedding' and 'Non-critical Outlet Setup', and a section for switching outlets 2, 4, 6, and 10 with buttons for 'On', 'Off', 'Cycle', 'Reset Active Energy', and 'Sequence Setup'. The bottom navigation bar shows the URL 'my PX (192.168.10.4)', user 'Administrator (admin)', last login '1/1/00 1:38 AM', and the date '1/1/00 4:46 AM'.

#	Name (Label)	Status	Current	Active Power	Power Factor	Non Critical	Receptacle Type
1	ASC (SRIO Controller) (1)	on	0.2 A	22 W	0.59	False	IEC 60320 C19
2	TM500_3 (2)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
3	TM500_4 (3)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
4	TM500_7(AC) (4)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
5	Digi_portserver (5)	on	0.1 A	11 W	0.52	False	IEC 60320 C19
6	TM500_1 (6)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
7	Shenick_Edge (7)	on	0.8 A	169 W	0.96	False	IEC 60320 C19
8	TM500_5 (8)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
9	HP_Switch (9)	on	0.2 A	19 W	0.49	False	IEC 60320 C19
10	TM500_2 (10)	off	0.0 A	0 W	1.00	False	IEC 60320 C19
11	Shenick_Core (11)	on	0.8 A	174 W	0.96	False	IEC 60320 C19
12	TM500_6 (12)	off	0.0 A	0 W	1.00	False	IEC 60320 C19

Add Codec AVPs



Add Codec AVPs

TeraVM: 192.168.10.200 / tm500 / Partition 3

**Provisioning默认生成
如下Codec AVPs.**

后续将介绍如何添加AMR-WB 23.85kbps / AMR-WB 12.65kbps / AMR-NB 12.2 kbps Codec AVPs.

STREAM PROFILE
Name: cvoip_ue0-_pdn1
Used For: Multimedia

Name	Type	Data	Data Override
Default AMR-WB	Pcap Replay	Default_Amr_Wb_Media.pcap	

Ignore all configured data and use arbitrary data.

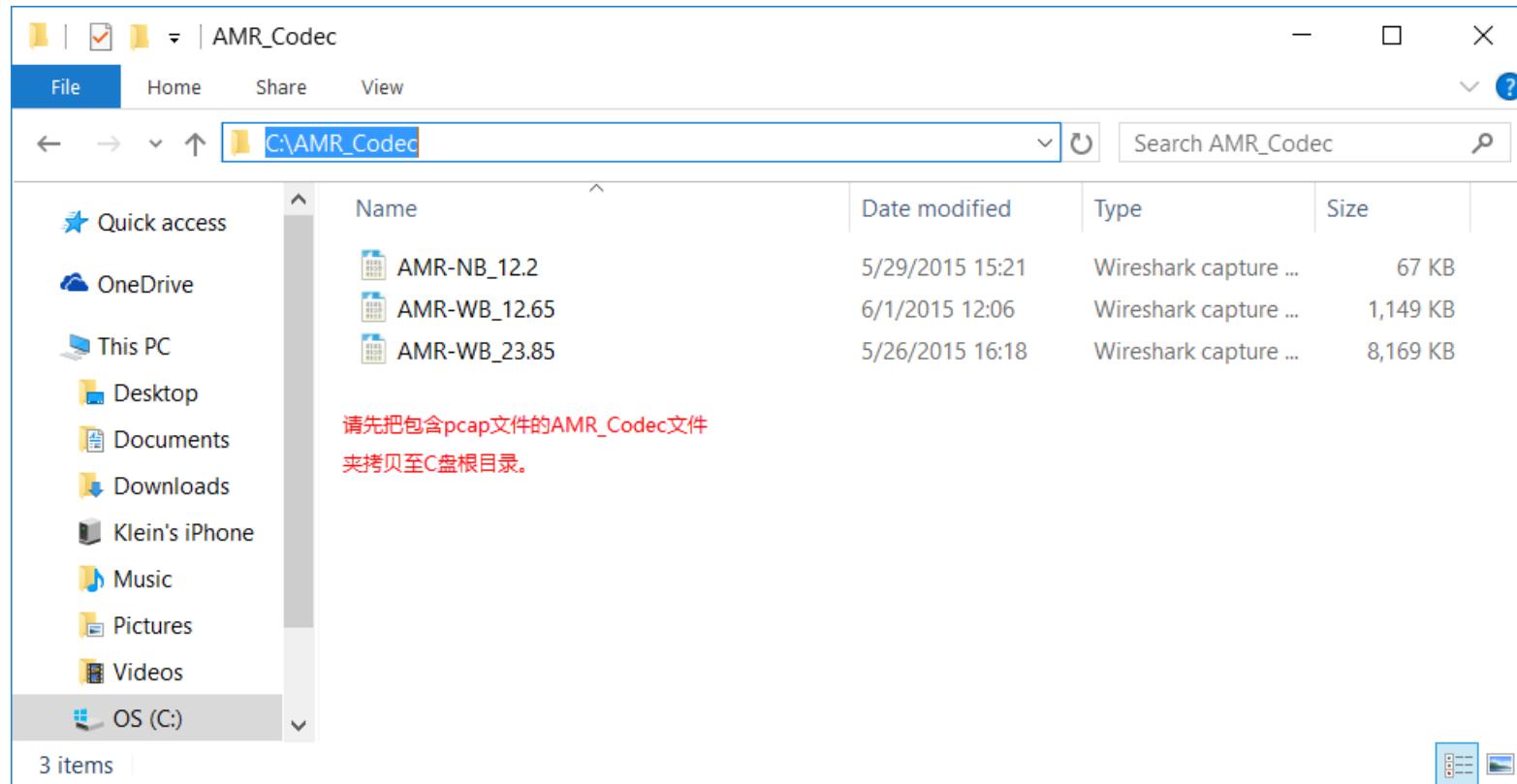
Mon Jul 25 16:06:10 CST 2016 - Importing from XML file:C:\Users\Klein Jiang\Desktop\E500_VoLTE_AKA.xml
 Mon Jul 25 16:06:10 CST 2016 - Parsing contents of XML file...
 Mon Jul 25 16:06:10 CST 2016 - Checking structure of XML file...
 Mon Jul 25 16:06:10 CST 2016 - Importing contents of XML file...
 Mon Jul 25 16:06:13 CST 2016 - Processing Aggregate Groups
 Mon Jul 25 16:06:14 CST 2016 - Processing Hosts
 Mon Jul 25 16:06:16 CST 2016 - Optimizing Hosts

Run Output PDU Captures Threshold Events VAD Control Status Aux Feed Control Status XML Import: E500_VoLTE_AKA.xml

Ready

Add Codec AVPs

COBHAM



Add Codec AVPs

AMR-WB 23.85

RTP CODEC AVP FOLDER

Codec AVPs:

- Name
- Default G.723 5.3 kbits/s (MP-MLQ)
- Default G.722 (ACELP)
- Default G.728
- Default G.729
- Default iLBC 13.33 kbits/s
- Default iLBC 15.2 kbits/s
- Default CTS H.264
- Default CTS AAC-LD
- Default Cisco E20-C20 H.264
- Default Cisco E20-C20 MP4A

1) 右键选择Codec AVPs , 然后选
择Add Codec AVP.

```

Mon Jul 25 16:06:10 CST 2016 - Importing from XML file:C:\Users\Klein Jiang\Desktop\E500_VoLTE_AKA.xml
Mon Jul 25 16:06:10 CST 2016 - Parsing contents of XML file...
Mon Jul 25 16:06:10 CST 2016 - Checking structure of XML file...
Mon Jul 25 16:06:10 CST 2016 - Importing contents of XML file...
Mon Jul 25 16:06:13 CST 2016 - Processing Aggregate Groups
Mon Jul 25 16:06:14 CST 2016 - Processing Hosts
Mon Jul 25 16:06:16 CST 2016 - Optimizing Hosts
Mon Jul 25 16:06:16 CST 2016 - Processing Applications
Mon Jul 25 16:06:18 CST 2016 - Optimizing Applications
Mon Jul 25 16:06:18 CST 2016 - Processing Thresholds
Mon Jul 25 16:06:18 CST 2016 - Import Complete.

```

Run Output PDU Captures Threshold Events VAD Control Status Aux Feed Control Status XML Import: E500_VoLTE_AKA.xml

Ready

Add Codec AVPs

AMR-WB 23.85

2) 如下图所示配置AMR-WB 23.85kbps相关参数。

The 'Add RTP Codec AVP' window shows fields for Name, Used For (set to 'Voice Only'), Encoding Name (set to 'AMR'), Media Type (set to 'audio'), Payload Type (set to '112'), and SDP Attributes. A note at the top says 'RTP Codec AVP默认配置'.

The 'Configure SDP Attributes' window shows a list of SDP Attributes with buttons for Add, Edit, and Delete. It also has OK and Cancel buttons.

The 'Configure SDP Attribute' window shows a single attribute 'b=AS:40' with OK and Cancel buttons. A red box highlights the 'Configure...' button in the middle window.

Add Codec AVPs

AMR-WB 23.85

Test Groups Jobs Nodes

Test Groups
E500_VoLTE_AKA
IP
Configuration
Profile
RTP
Codec AVPs
AMR-WB 23.85
Default AMR-NB
Default AMR-WB
Default Cisco E20-C20 H.264
Default Cisco E20-C20 MP4A
Default CTS AAC-LD
Default CTS H.264
Default G.711a (PCMA)
Default G.711u (PCM)
Default G.722 (ACELP)
Default G.723 5.3 kbit/s (MP-MLQ)
Default G.723 6.3 kbit/s (MP-MLQ)
Default G.728
Default G.729
Default GSM
Default H.264 128x96px 100 kbit/s
Default H.264 128x96px 300 kbit/s
Default H.264 176x144px 350 kbit/s
Default H.264 320x240px 600 kbit/s
Default H.264 320x240px 900 kbit/s
Default iLBC 13.33 kbit/s
Default iLBC 15.2 kbit/s
MPEG2
Stream Profiles
cvoip_ue0_pdn1

RTP CODEC AVP

Name: AMR-WB 23.85
Used For: Pcap Replay
Encoding Name: AMR-WB
Media Type: audio
Payload Type: 120
Payload Size:
ms/Packet:
Delay:
Packet Rate:
Stream Rate:
Frequency: 16000 Hz
Channels: None
Data: C:/AMR_Codec/AMR-WB_23.85.pcap
SDP Attributes: b=AS:40

Suppress Proprietary SDP Attributes

The screenshot shows the Cobham test configuration interface. On the left, a tree view displays various test groups and profiles, with a red annotation '3) AMR-WB 23.85' pointing to the 'AMR-WB 23.85' entry under the RTP Codec AVPs. The main right panel shows the configuration details for this specific AVP, including fields for Name, Used For, Encoding Name, Media Type, Payload Type, Frequency, and Data. The 'Data' field is set to a local file path. The 'SDP Attributes' field contains the value 'b=AS:40'. A checkbox for 'Suppress Proprietary SDP Attributes' is also present.

Add Codec AVPs

AMR-WB 23.85

TeraVM: 192.168.10.200 / tm500 / Partition 3

File Edit View Window Admin Help

Test Groups Jobs Nodes

STREAM PROFILE
Name: cvoip_ue0-_pdn1
Used For: Multimedia

RTP Codec AVPs Data Settings Silence Suppression Adaptive Stream Changes

Name	Type	Data	Data Override
Default AMR-WB	Pcap Replay	Default_Amr_Wb_Media.pcap	

4) 右键选择VoLTE对应的Stream Profiles，然后选择Properties.

Ignore all configured data and use arbitrary data.

```

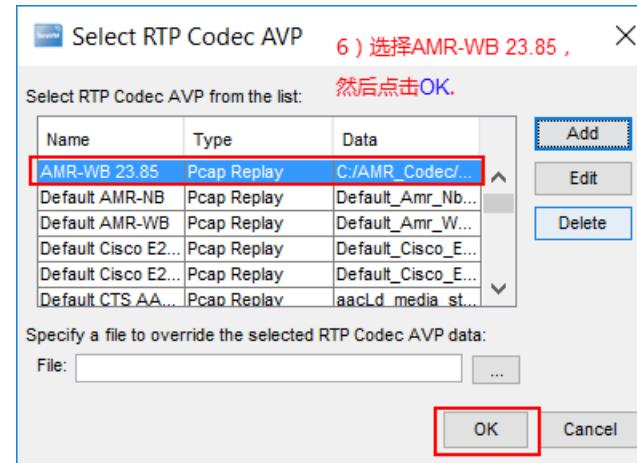
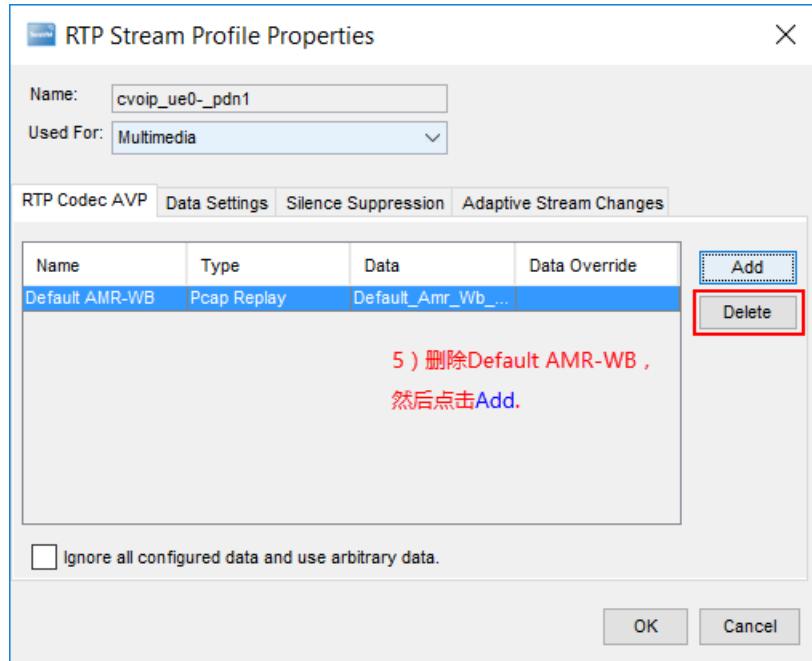
Mon Jul 25 16:06:10 CST 2016 - Importing from XML file:C:\Users\Klein Jiang\Desktop\E500_VoLTE_AKA.xml
Mon Jul 25 16:06:10 CST 2016 - Parsing contents of XML file...
Mon Jul 25 16:06:10 CST 2016 - Checking structure of XML file...
Mon Jul 25 16:06:10 CST 2016 - Importing contents of XML file...
Mon Jul 25 16:06:13 CST 2016 - Processing Aggregate Groups
Mon Jul 25 16:06:14 CST 2016 - Processing Hosts
Mon Jul 25 16:06:16 CST 2016 - Optimizing Hosts

```

Run Output PDU Captures Threshold Events VAD Control Status Aux Feed Control Status XML Import: E500_VoLTE_AKA.xml Ready

Add Codec AVPs

AMR-WB 23.85



Add Codec AVPs

AMR-WB 23.85

RTP Stream Profile Properties

Name: cvoip_ue0-_pdn1
Used For: Multimedia

RTP Codec AVP Data Settings Silence Suppression Adaptive Stream Changes

Name	Type	Data	Data Override
AMR-WB 23.85	Pcap Replay	C:/AMR_Codec/A...	

Add Delete

Ignore all configured data and use arbitrary data.

7) 点击OK完成RTP Codec AVPs修改。

OK Cancel

Test Groups Jobs Nodes

STREAM PROFILE Name: cvoip_ue0-_pdn1

Used For: Multimedia

RTP Codec AVPs Data Settings Silence Suppression Adaptive Stream Changes

Name	Type	Data	Data Override
AMR-WB 23.85	Pcap Replay	C:/AMR_Codec/AMR-WB_23.85.pcap	

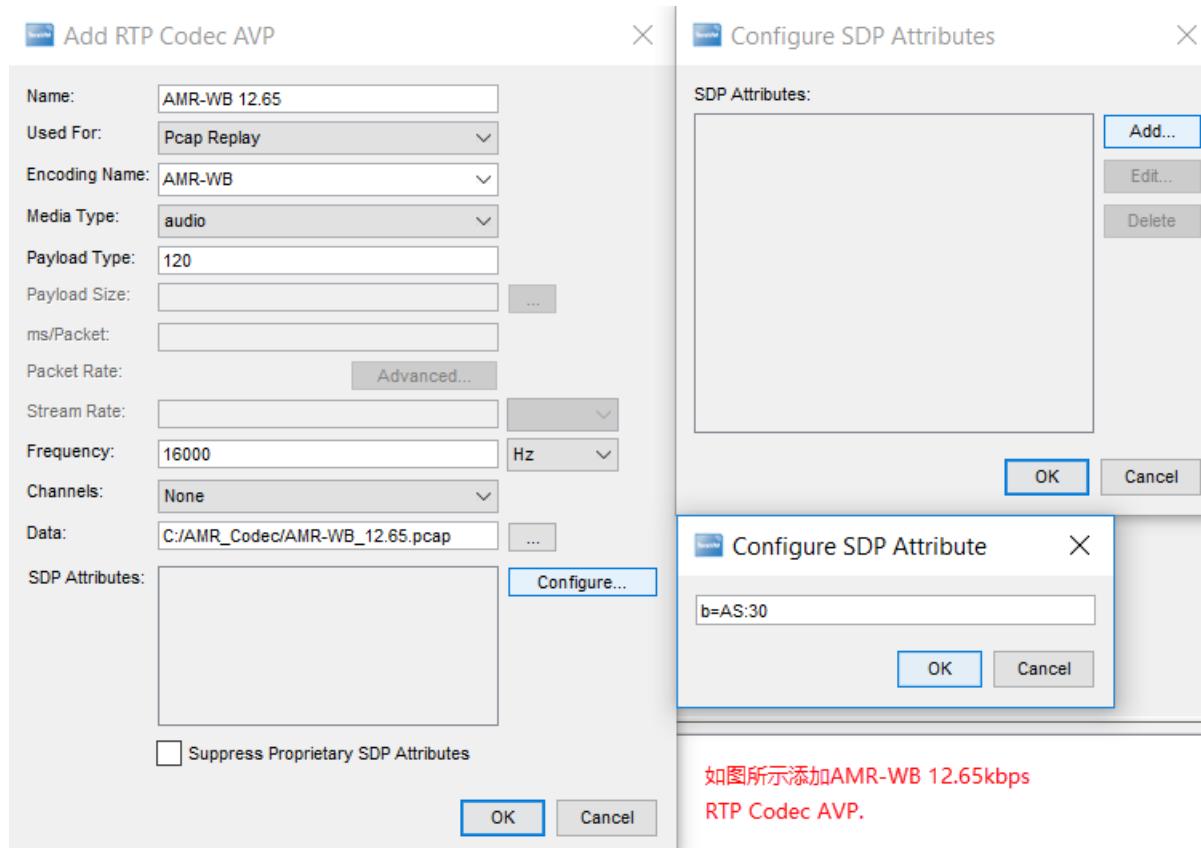
Ignore all configured data and use arbitrary data.

Test Groups

- E500_VoLTE_AKA
 - IP
 - Configuration
 - Profile
 - RTP
 - Codec AVPs
 - Stream Profiles
 - cvoip_ue0-_pdn1
 - Adaptive Bit Rate Level Lists
 - Default AMR-NB Levels
 - Default AMR-WB Levels
 - Bit Rate Level Change Lists
- Tcp Characteristics Configuration
- Telepresence
- VoIP Configuration

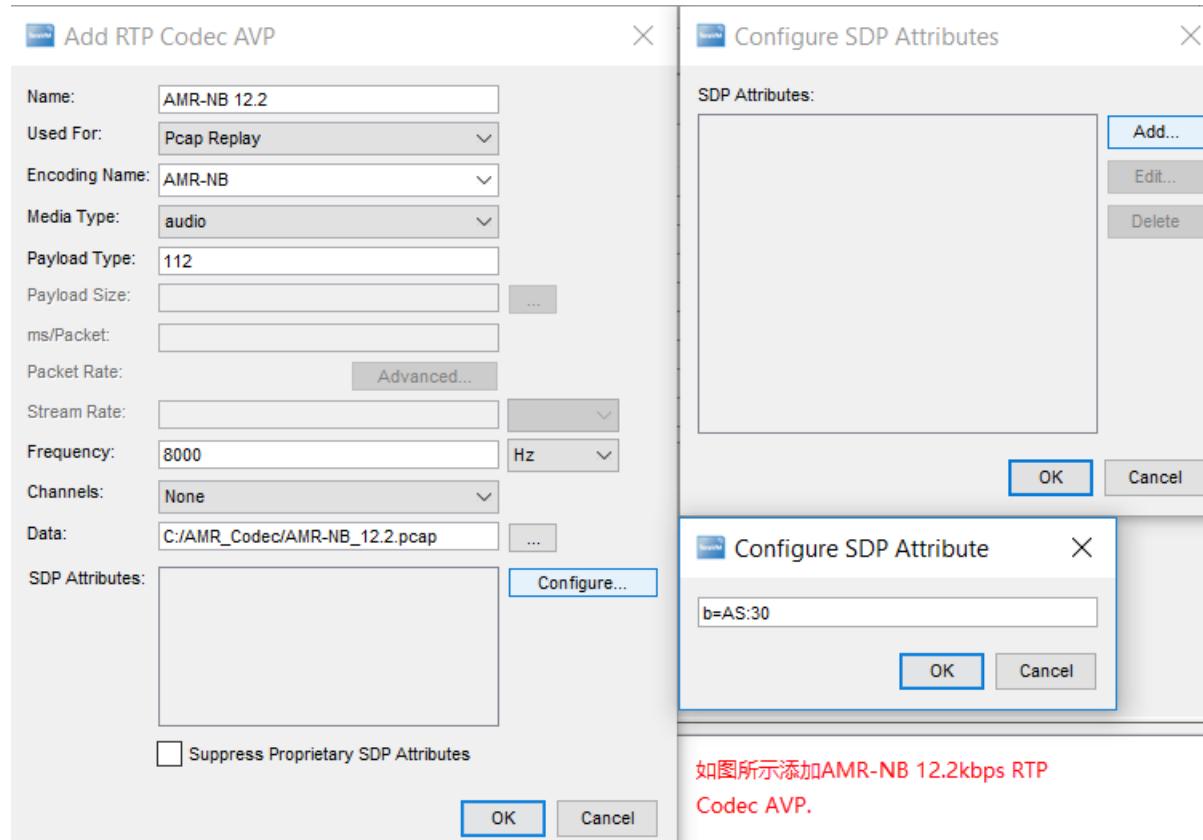
Add Codec AVPs

AMR-WB 12.65



Add Codec AVPs

AMR-NB 12.2



- E500LTE-C_Installation_Guide.pdf
- TM500LTE_InstallGuide.pdf
- TM500LTE_diversifeye500.pdf
- TM500LTE_TMA_UserGuide.pdf
- CN-001-TM500_MTS_Test_Script
- CN-002-Real_Data_Application
- CN-004-TMA_Installation & Switch
- CN-005-TM500_Serial_Log_MK3

Change History



Connected – Seamless – Wireless