



June 2016



主要内容

- 配置TMA Preferences
- 基本TM500 logs
- 如何抓取基本TM500 logs
- 进阶TM500 logs
- TM500帮助文档

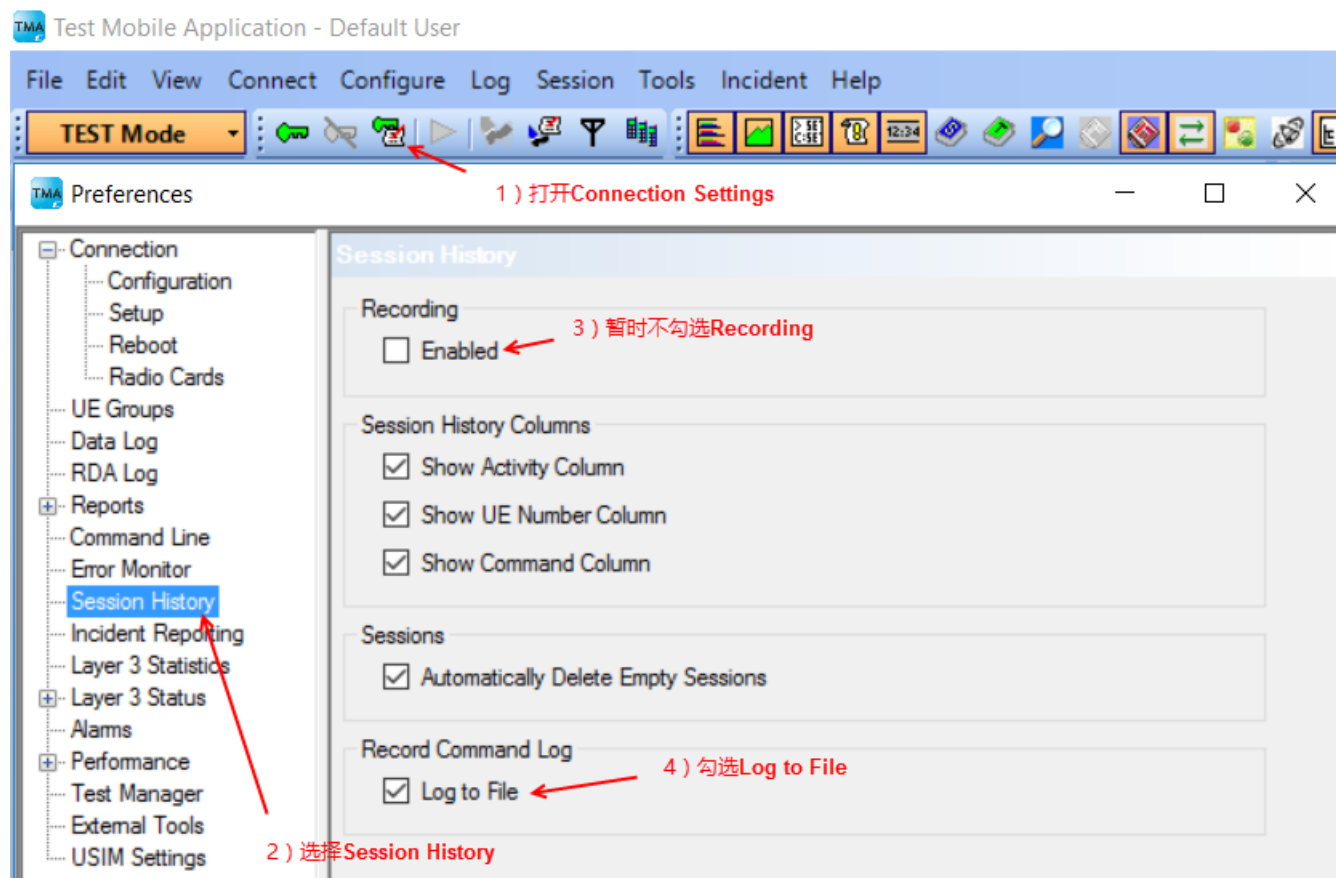


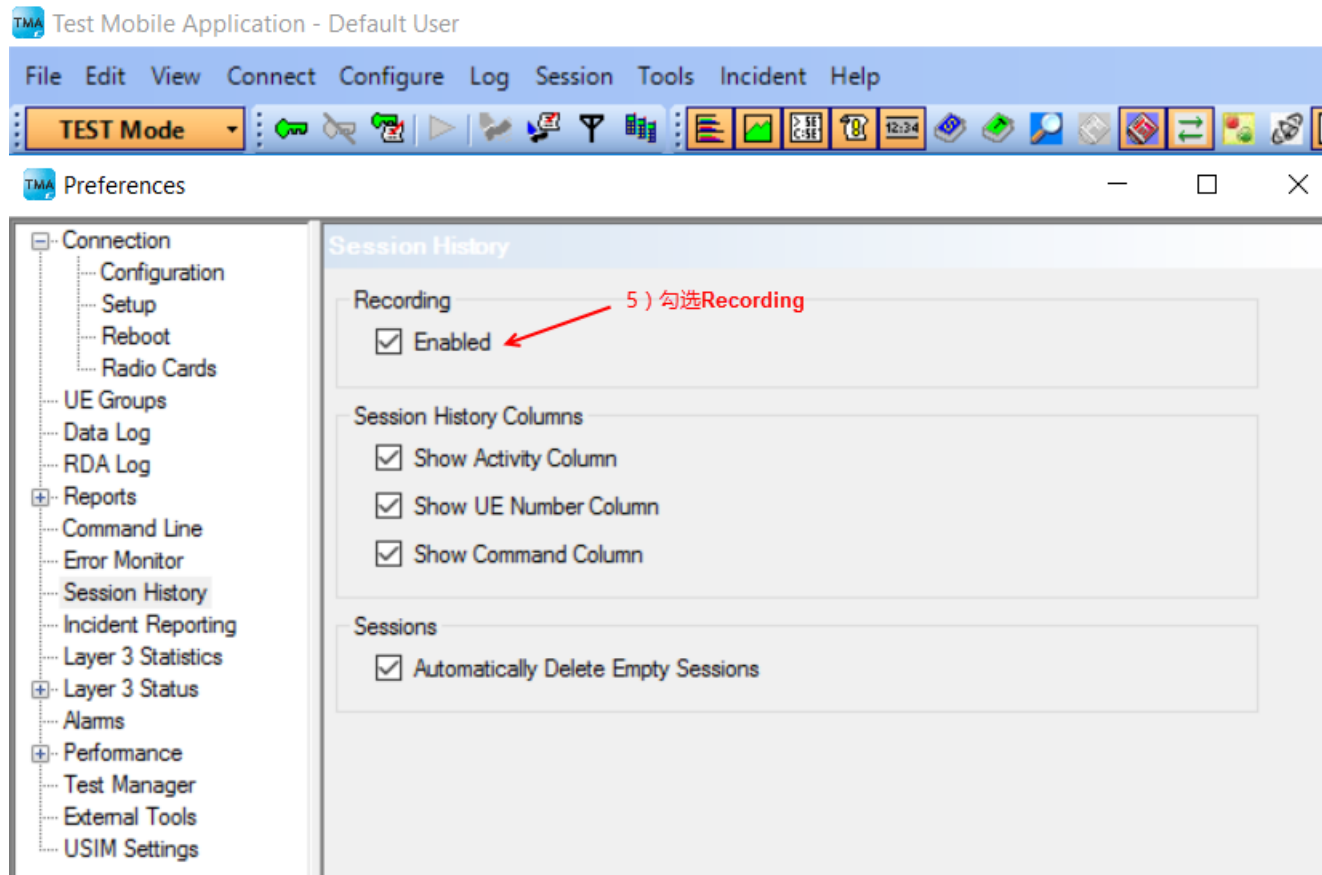
配置TMA Preferences

- 配置Session History
- 配置Incident Reporting
- 配置Reboot



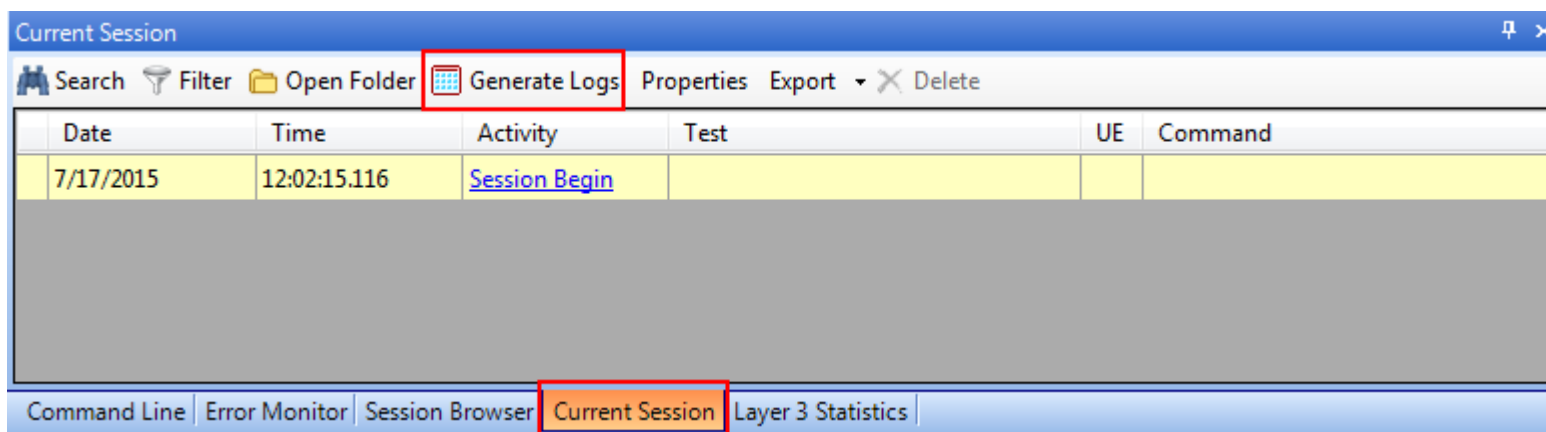
- 如图步骤1至5所示配置Session History，同时使能Log to File和Recording.



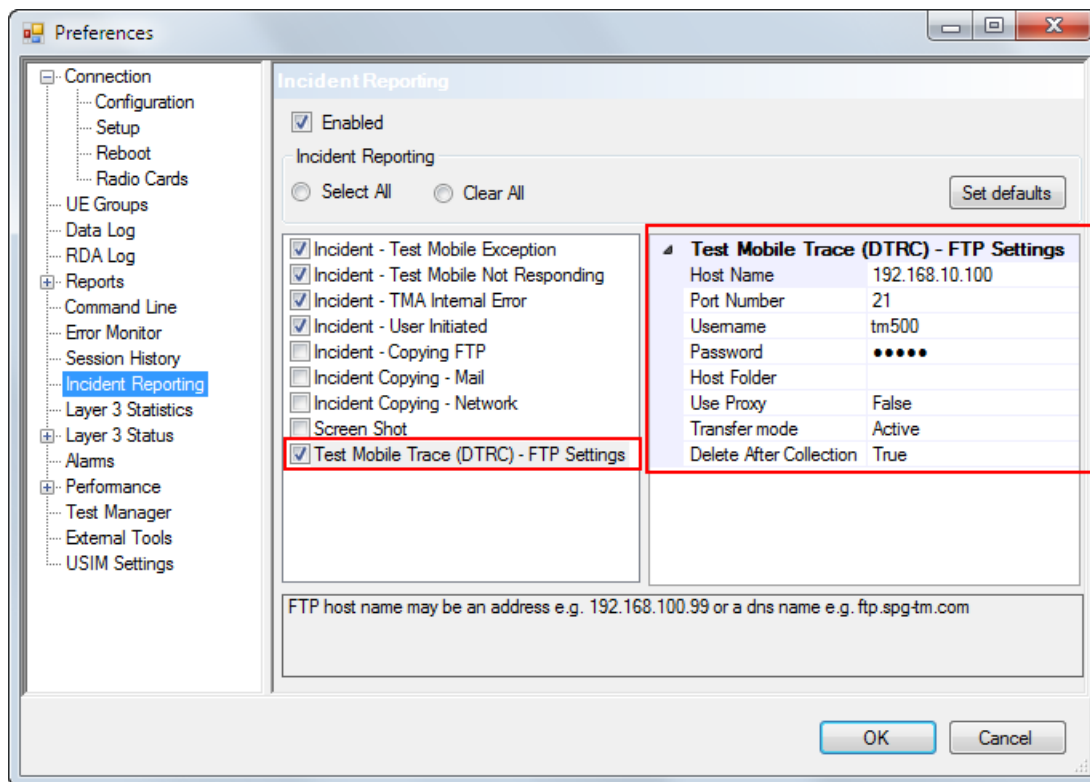


- **Log to File:** Command Line log以文本格式保存，文件保存在Current Session所在文件夹的根目录下。
 - 优点：测试过程中可以通过文本编辑工具随时直接查看文件内容；

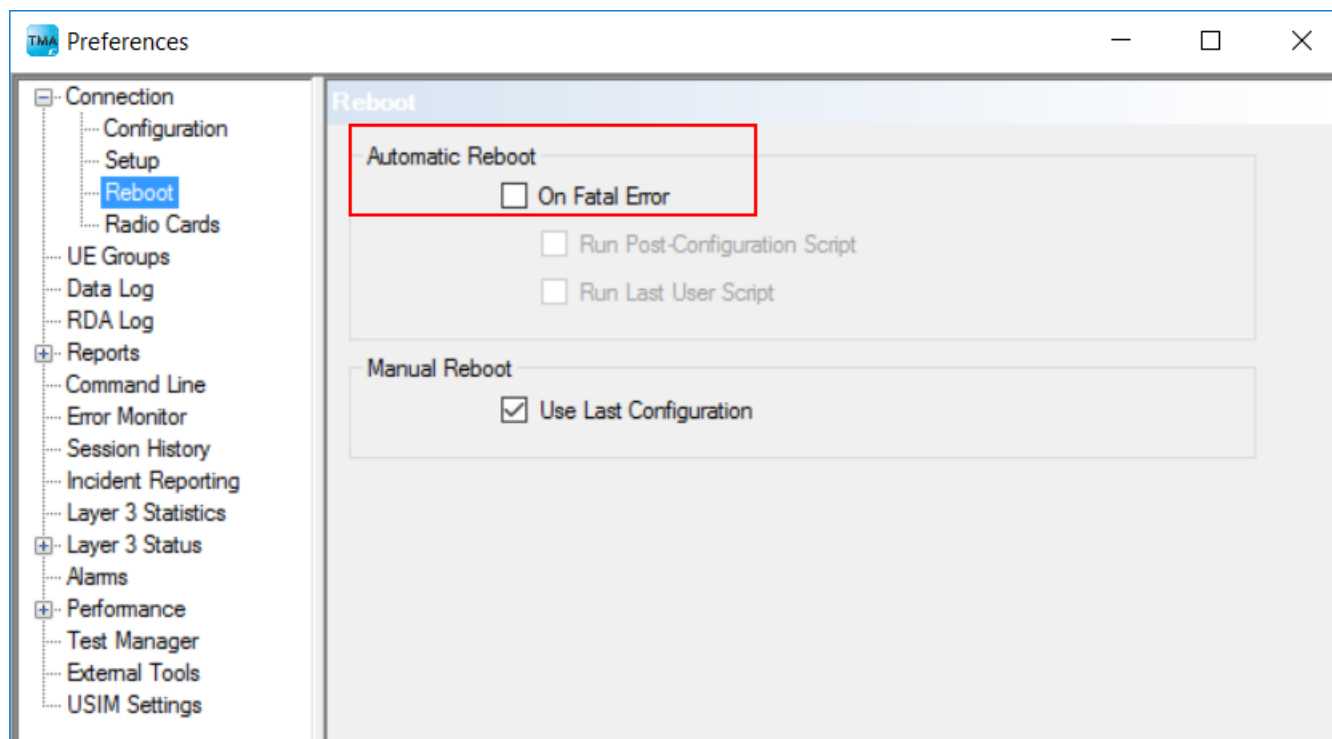
- 缺点：无法完整过滤出某个UE对应的所有Command Line log。
- **Recording:** Command Line log以.xml格式保存，文件保存在Current Session所在的文件夹的SessionHistory子文件夹下。
 - 优点：方便过滤过某个UE对应的所有Command Line log；
 - 缺点：需要通过Current Session -> Generate Logs把Command Line log由.xml格式转换为文本格式（.log），以方便查看。



- Test Mobile Trace (DTRC) – FTP Settings
 - Host Name: TM500控制电脑IP.
 - Username/Password: TM500（或FileZilla Server）配置的用户名和密码，默认值 *tm500/tm500*。



- 不要勾选Automatic Reboot On Fatal Error.

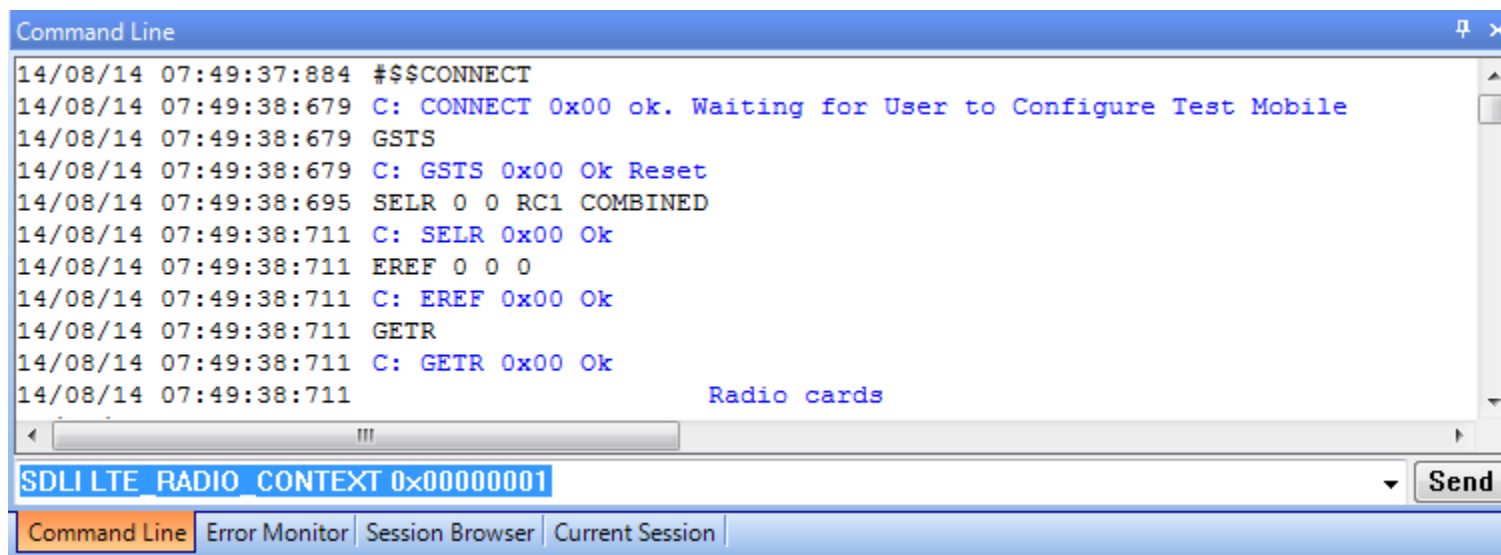


基本TM500 logs

- Command Line log
- Measurement log (GUI log)
- Serial log
- Dump Trace (DTRC log)



- Command Line log是运行脚本时，由TM500 控制电脑发送给TM500的所有命令，以及由TM500返回的响应或指示。
- 测试过程中，可以在Command Line窗口实时看到log。

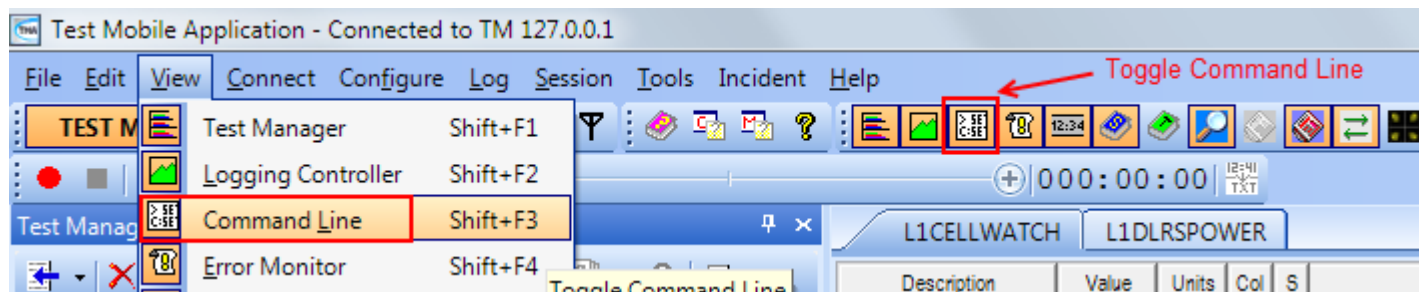


The screenshot shows a 'Command Line' window with a blue title bar. The main area contains a log of commands and responses, each preceded by a timestamp. The commands are: '\$\$\$CONNECT', 'CONNECT 0x00 ok. Waiting for User to Configure Test Mobile', 'GSTS', 'GSTS 0x00 Ok Reset', 'SELR 0 0 RC1 COMBINED', 'SELR 0x00 Ok', 'EREF 0 0 0', 'EREF 0x00 Ok', 'GETR', and 'GETR 0x00 Ok'. The response 'Radio cards' is also visible. At the bottom, there is a text input field containing 'SDLI LTE RADIO_CONTEXT 0x00000001' and a 'Send' button. Below the input field is a tabbed interface with four tabs: 'Command Line' (selected), 'Error Monitor', 'Session Browser', and 'Current Session'.

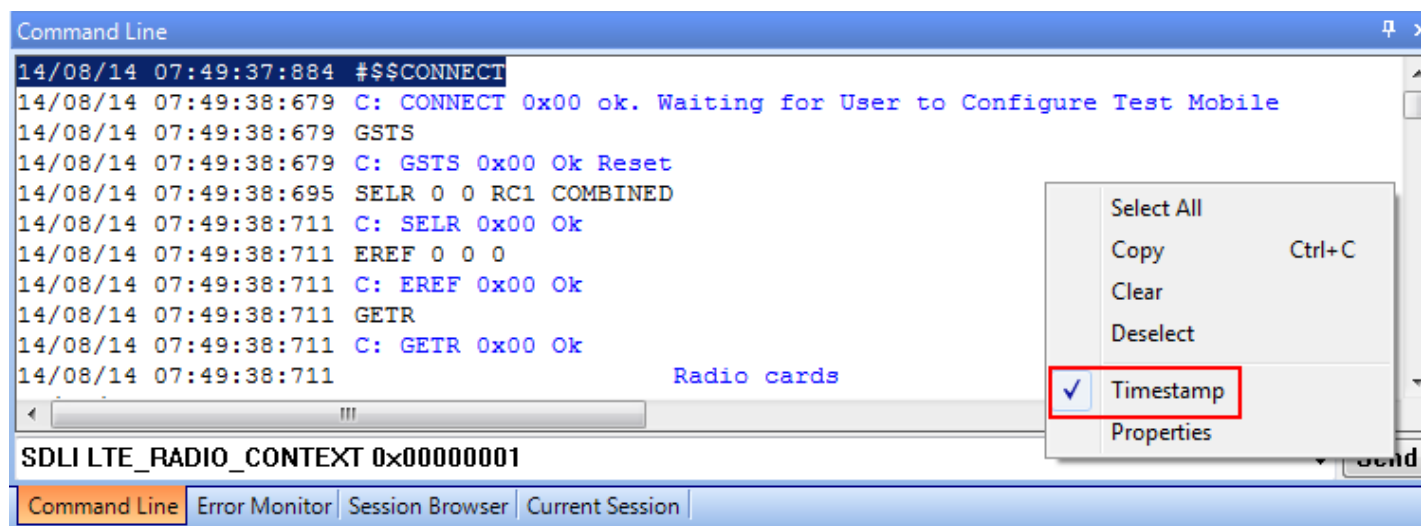
```
14/08/14 07:49:37:884 $$$CONNECT
14/08/14 07:49:38:679 C: CONNECT 0x00 ok. Waiting for User to Configure Test Mobile
14/08/14 07:49:38:679 GSTS
14/08/14 07:49:38:679 C: GSTS 0x00 Ok Reset
14/08/14 07:49:38:695 SELR 0 0 RC1 COMBINED
14/08/14 07:49:38:711 C: SELR 0x00 Ok
14/08/14 07:49:38:711 EREF 0 0 0
14/08/14 07:49:38:711 C: EREF 0x00 Ok
14/08/14 07:49:38:711 GETR
14/08/14 07:49:38:711 C: GETR 0x00 Ok
14/08/14 07:49:38:711 Radio cards

SDLI LTE RADIO_CONTEXT 0x00000001
```

- 如果Command Line窗口在TMA界面未显示的话，请通过菜单栏或是快捷方式打开。



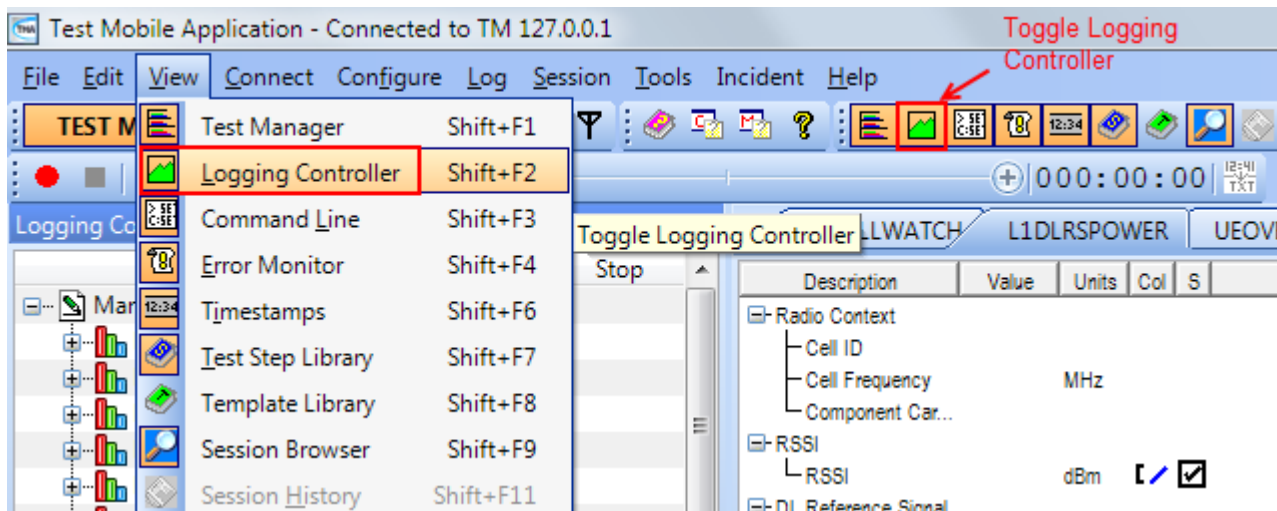
- 请确保Command Line窗口的时间戳是打开的，点击右键可以确认。



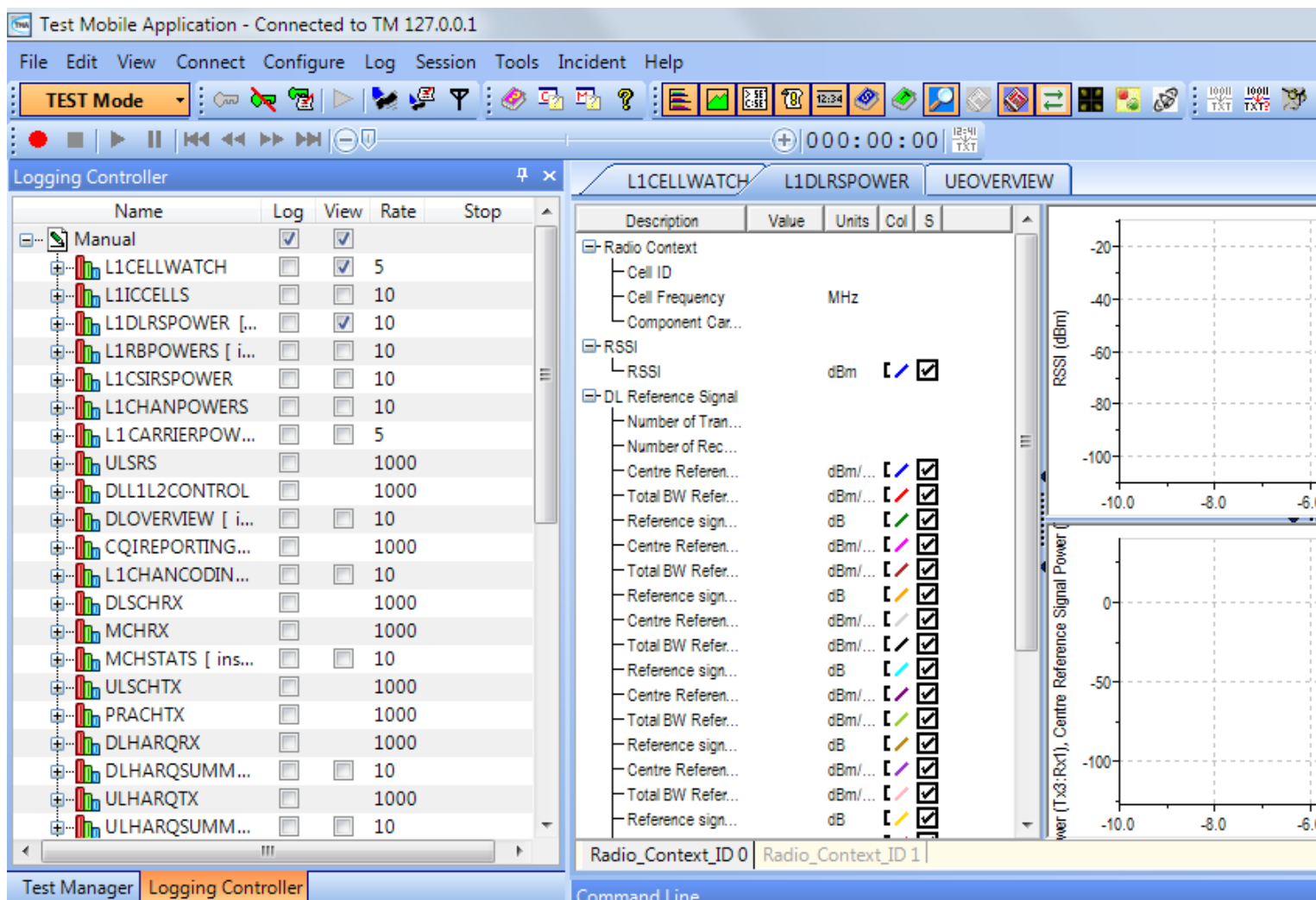
- 关于每个TM500命令对应参数的含义，请参阅TM500 Command Reference Manual。

Measurement log

- Measurement log用于测试过程中实时记录或查看调度和统计信息；log可转换为.log或.csv的格式，用于线下分析。
- 打开Logging Controller。



Measurement log

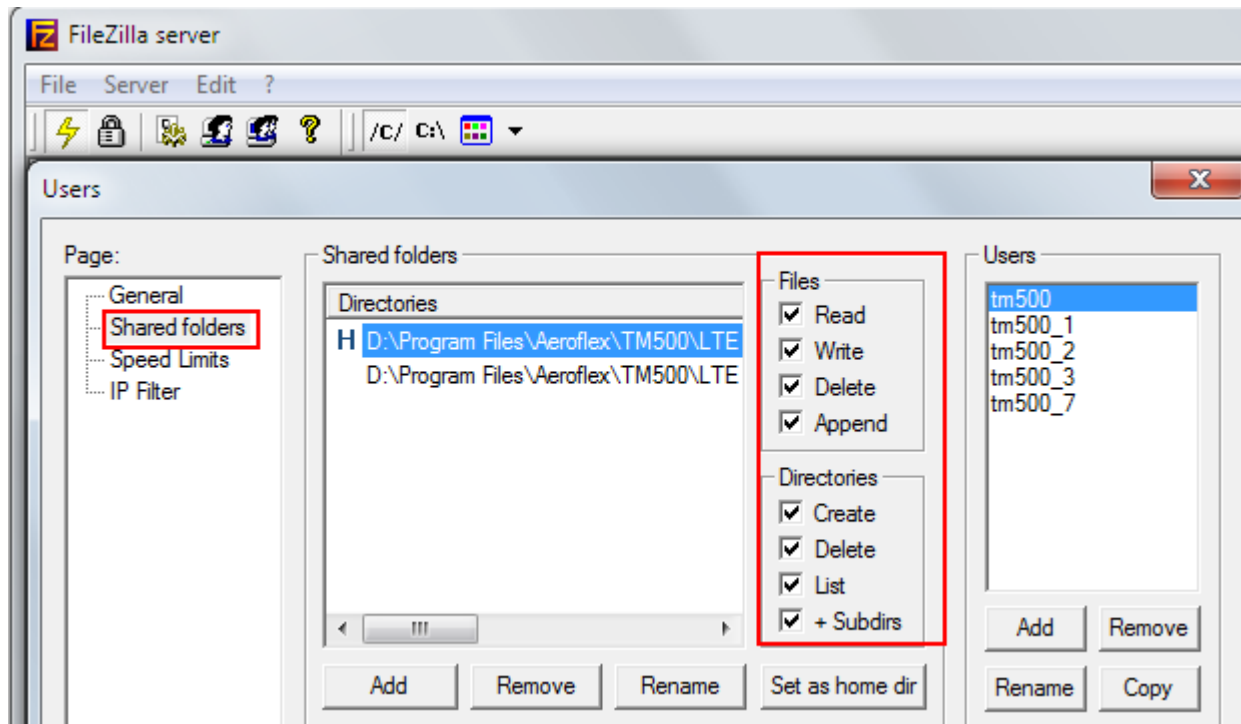


- 必选SUE/MUE log
 - L1CELLEATCH, L1DLRSPower, L1RBPOWERS, PRACHTX, CQIREPORTING, DLL1L2CONTROL, DLSCHRX, DLHARQTX, ULSCHTX, ULHARQTX, MACTX, MACRX, UEOverview, Protocol log.
- 可选SUE/MUE log
 - MACRXSTATS, MACTXSTATS, RLCRXSTATS, RLCTXSTATS, PDCPRXSTATS, PDCPTXSTATS.
 - SYSOVERVIEW (MUE only).
- 每个log的含义及其所能抓取的信息，请参考TM500 Measurement Reference Manual。

- 必选CUE log
 - L1CELLWATCH, SYSOVERVIEW, Protocol log.
- 可选CUE log
 - L1DLSTATS, L1ULSTATS, MACRXSTATS, MACTXSTATS, RLCRXSTATS, RLCTXSTATS, PDCPRXSTATS, PDCPTXSTATS, L1CELLDLOVERVIEW, L1CELLDLCARRIEROVERVIEW, L1CELLULOVERVIEW, L1CELLULCARRIEROVERVIEW, THROUGHPUT3D, CARRIERTHROUGHPUT3D, RRCSTATS, NASSTATS, RACHSTATS.
 - Functional Testing Logging
 - 最新的CUE新增了类似SUE/MUE的TTI级别的logging，最多支持前32个UE，默认最长抓取10分钟后自动停止，可以通过（*TMA Preferences -> Data Log -> Functional Test Logging*）配置。
 - L1L2FTL
 - L1DLRSPower, CQIREPORTING, DLL1L2CONTROL, DLSCHRX, DLHARQRX, ULSCHTX, ULHARQTX, MACTX, MACRX, UEOverview

- Serial log记录TM500运行过程中的调试信息。
- 最好从TM500上电开始抓取Serial log。
- 请参阅“CN-005-TM500_Serial_Log_MK3.pptx”，了解串口log的抓取方法。

- 当TM500出现ASSERT (crash)时，通过Dump Trace导出内存数据用于后续分析。
- 打开FileZilla Server，确保`ftp_root`对应`Files`和`Directories`的所有选项都已勾上。

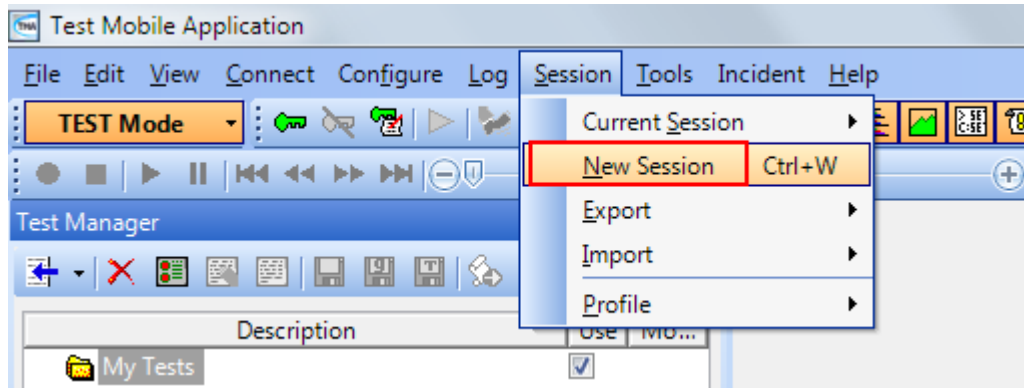


如何抓取基本TM500 logs

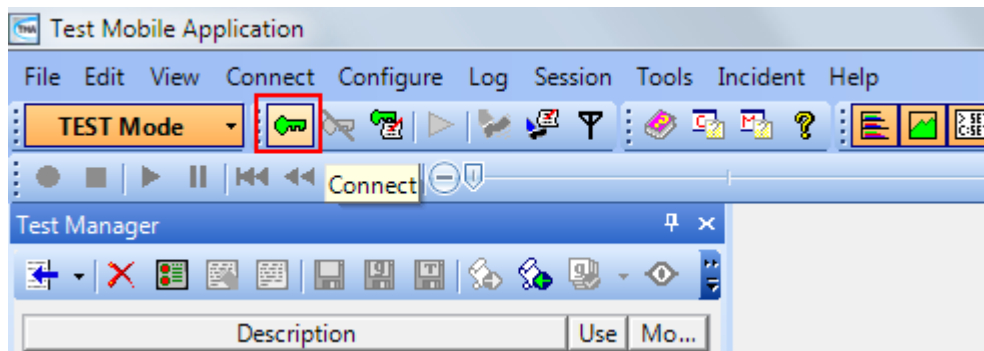


如何抓取TM500 logs

- 1) 连接TM500之前，请先New Session.

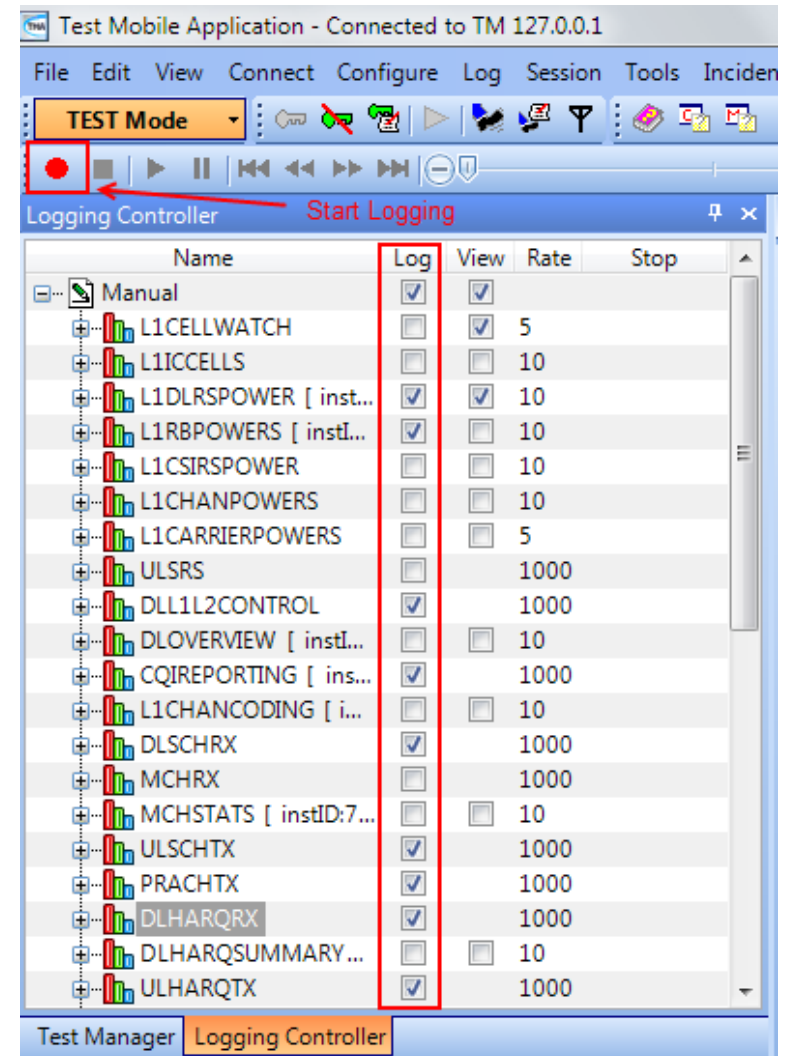


- 2) 点击绿色小钥匙连接TM500.



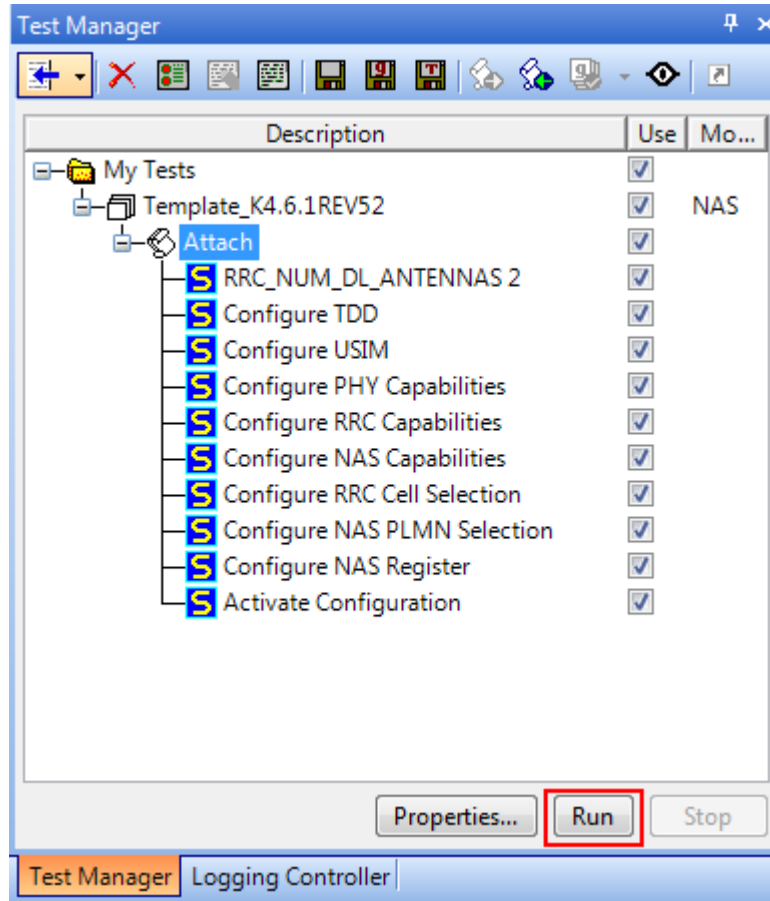
如何抓取TM500 logs

- 3) 选择所需抓取的log选项，然后点击红色圆形按钮开始抓取log。



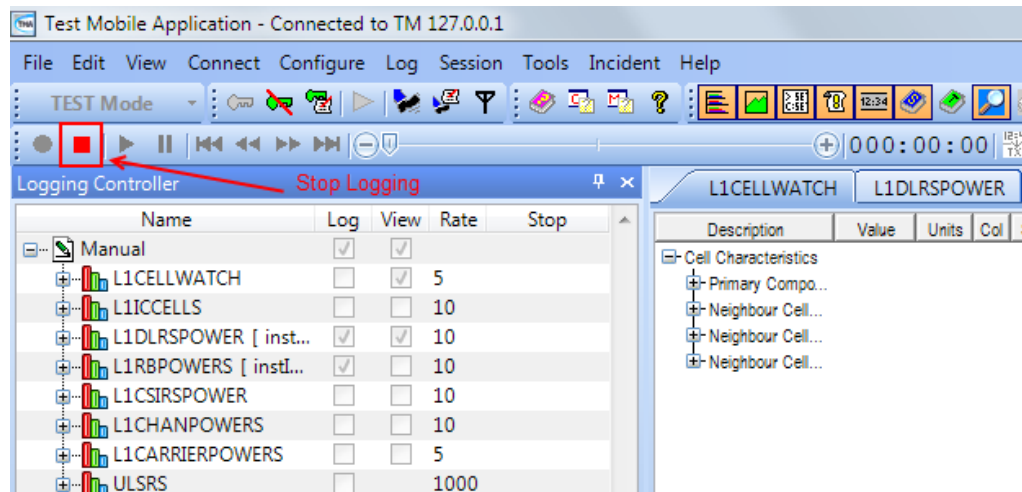
如何抓取TM500 logs

- 4) 运行TM500脚本。

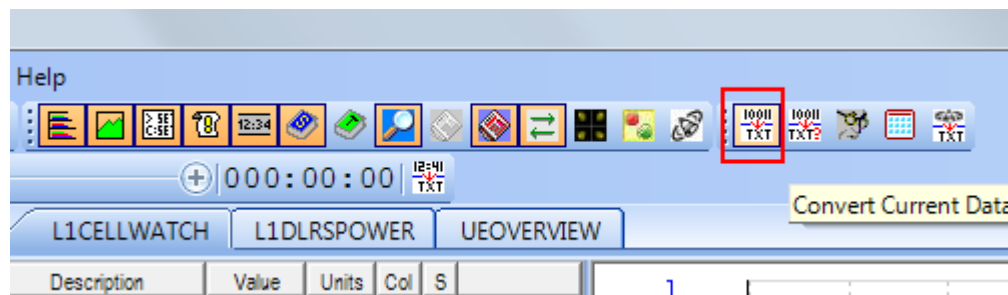


如何抓取TM500 logs

- 5) 测试完成后，点击方形红色按钮停止抓取log。



- 6) 点击“Convert Current Data”转换log为.csv格式。



如何抓取TM500 logs

- 7) 如果测试过程中，Command Line窗口打印ASSERT，例如：




24/02/14 11:29:28:287 I: ERNO 0x00000002 0x00000000 0x00000000 **Assert Fail:** "






24/02/14 11:29:28:287 >>>Remote Node Assert:




24/02/14 11:29:28:287 "*** DSP 13.0 **ASSERTED:**

..|lte_dsp_app|dl_srp|code|dl_srp_ctrl_scheduler.c, 1416: DL SRP scheduler: Channel estimate queue overflow., Assert param: 0x00000003 ***"

- TM500将自动发送命令抓取DTRC log，并保存在Current Session所对应的文件夹，例如：

Name	Date modified	Type	Size
 2015_12_09_16_15_08_777_Incident	12/9/2015 4:21 PM	File folder	
 151209_161121	12/9/2015 4:22 PM	File folder	
 151209_155252_Command_Log000	12/9/2015 4:17 PM	TXT File	109 KB

Name	Date modified	Type	Size
 DTRC	12/9/2015 4:21 PM	File folder	
 2015_12_09_16_15_08_777_Incident_Report	12/9/2015 4:15 PM	TXT File	3 KB
 Incident_Profile_Default User	12/9/2015 4:09 PM	XML Document	461 KB
 Incident_ScreenShot	12/9/2015 4:15 PM	JPEG image	217 KB
 Incident_TMA_Layout_Default User.layout	12/8/2015 11:22 PM	XML Document	

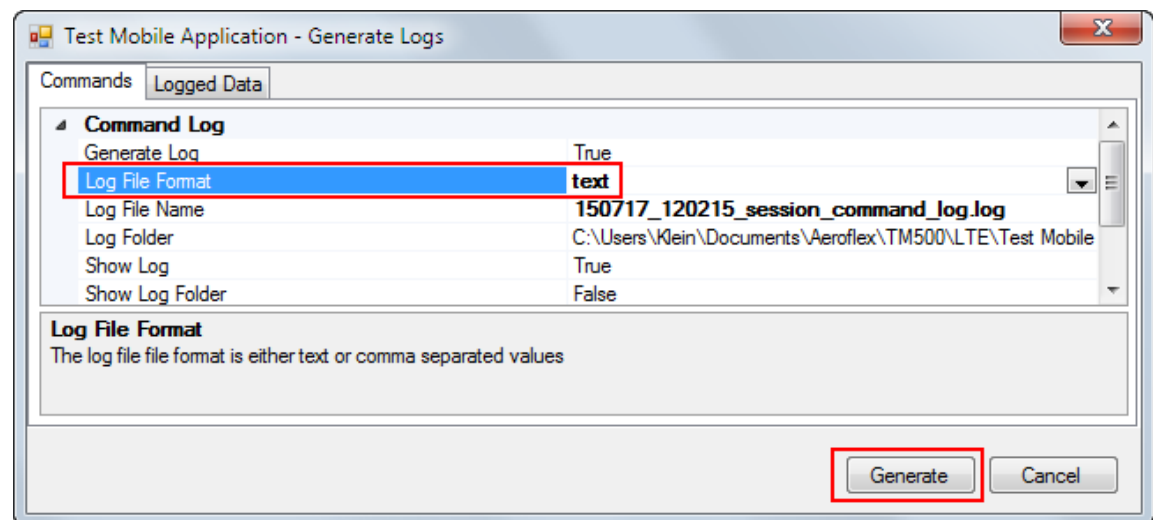
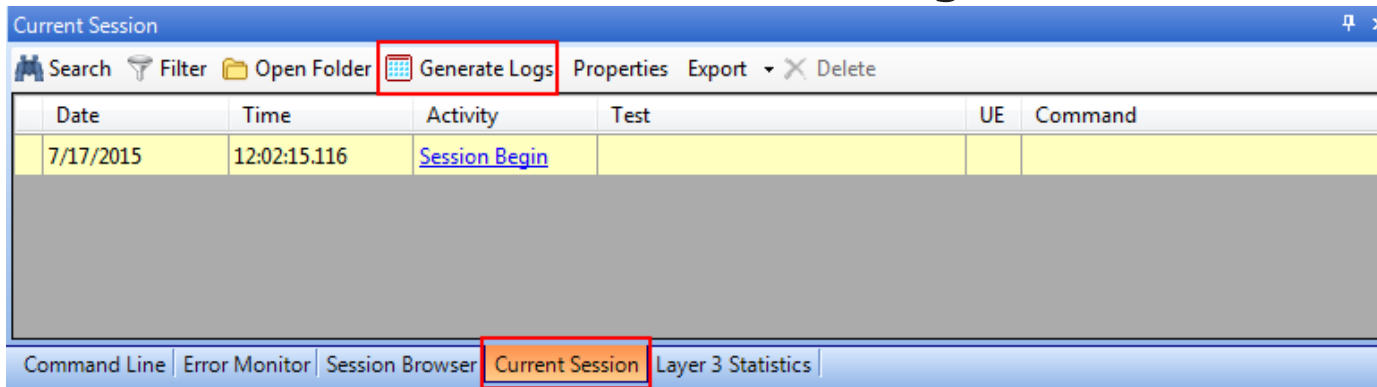
Name	Date modified	Type	Size
 2015_12_09_16_15_04_dump	12/9/2015 4:15 PM	Text Document	20 KB
 2015_12_09_16_15_04_dump.mux	12/9/2015 4:15 PM	MUX File	12,777 KB
 2015_12_09_16_15_04_dump	12/9/2015 4:15 PM	Wireshark capture...	49,470 KB

- 如果TM500没有自动抓取DTRC log成功的话，请在Command Line窗口运行 “*DTRC dumptrace*”，然后在FileZilla Server配置的*ftp_root*目录下生成三个文件：*dumptrace.log*, *dumptrace.trc* & *dumptrace.mux*，这就是Dump Trace log。

备注：如果测试过程中没有出现*ASSERT*的话，不需要抓取*Dump Trace log*。

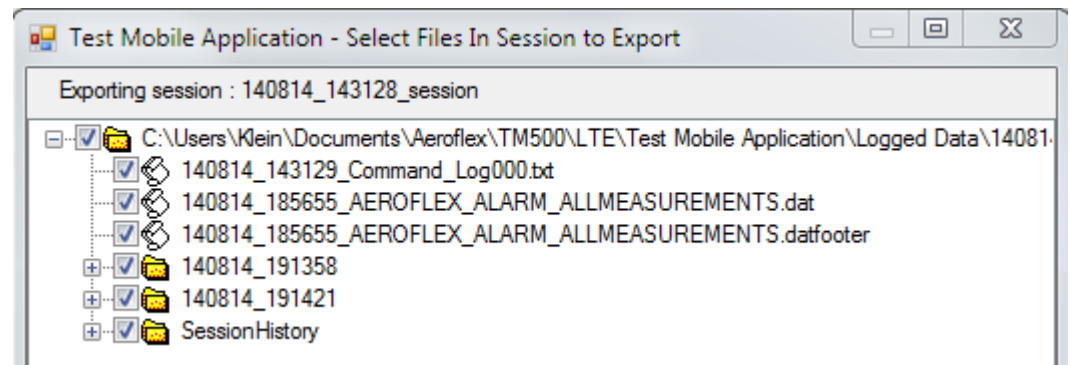
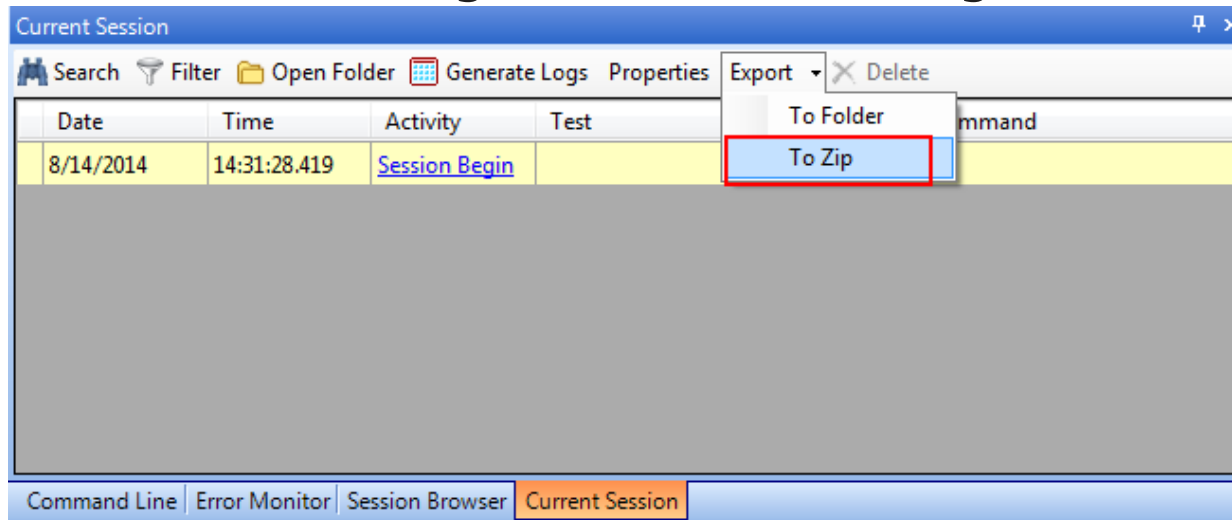
如何抓取TM500 logs

- 8) 选择 *Current Session*, 点击 *Generate Logs* 并配置 *Log File Format* 为 *text*, “Generate” 生成log.



如何抓取TM500 logs

- 9) 点击 *Export* 的 “*To Zip*” 导出 Session log, 文件包含 Command Line log 和 Measurement logs.



如何抓取TM500 logs

- 通过以上9个步骤，所抓取的log包含：
 - Command Line log;
 - Measurement logs;
 - Dump Trace log (如果出现TM500 ASSERT);
 - Serial log (从TM500上电开始抓取);

以上4个log对于定位TM500相关问题非常重要，请尽可能在第一时间提供完整的log。

备注：如果是硬件问题或者TMA 无法连接TM500的问题，请务必提供Serial log.

如何独立抓取Logical Channel/Radio Bearer/Access Bearer log - SUE

- 以Logical Channel 3和4为例:

```
drb-ToAddModList {
{
  eps-BearerIdentity 5,
  drb-Identity 4,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
  rlc-Config am : {
    ul-AM-RLC {
      t-PollRetransmit ms120,
      pollPDU p64,
      pollByte kB750,
      maxRetxThreshold t16
    },
    dl-AM-RLC {
      t-Reordering ms50,
      t-StatusProhibit ms50
    }
  },
  logicalChannelIdentity 3,
  logicalChannelConfig {
    ul-SpecificParameters {
      priority 10,
      prioritisedBitRate kbps8,
      bucketSizeDuration ms100,
      logicalChannelGroup 3
    }
  }
}
```

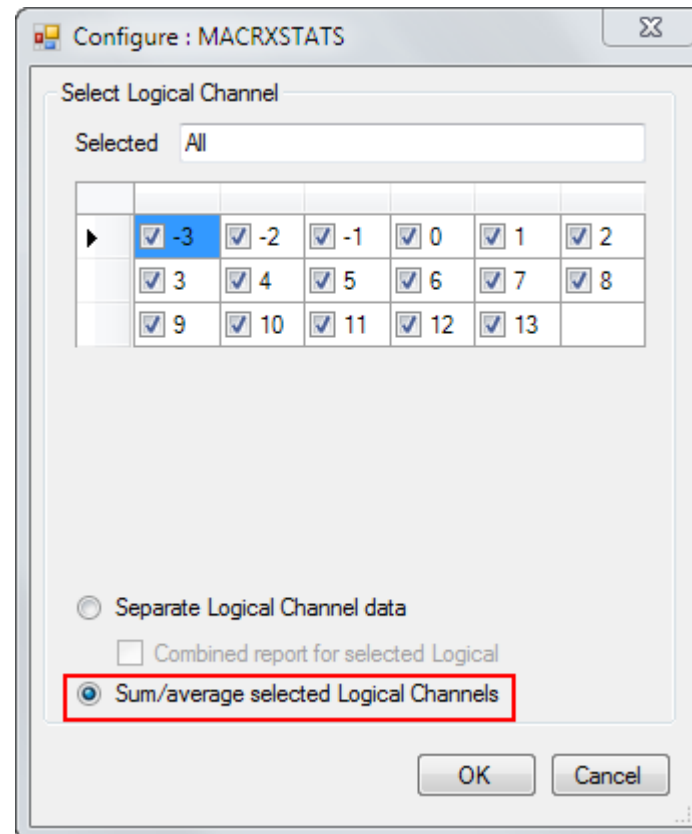
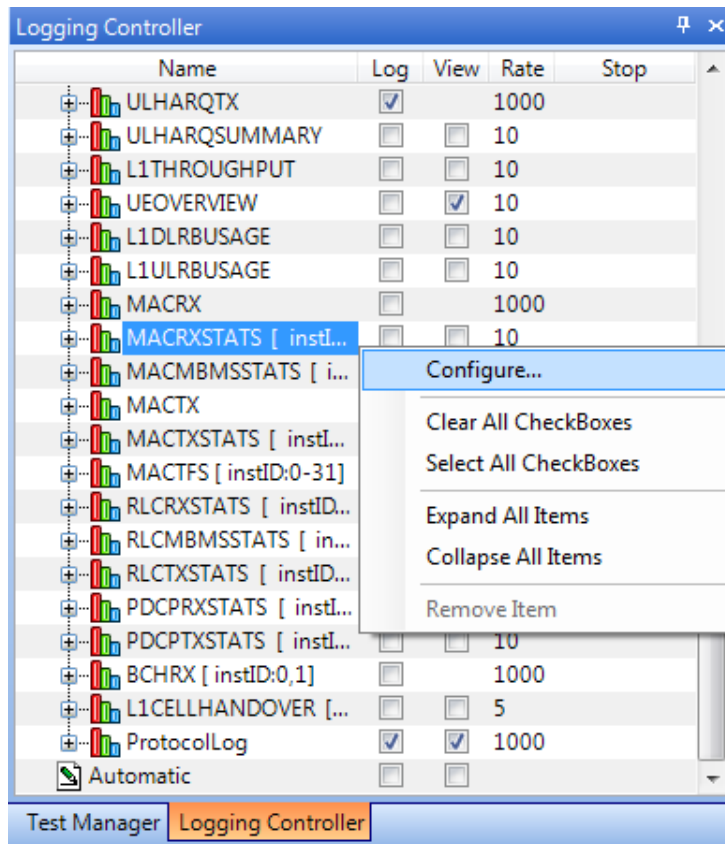
```
drb-ToAddModList {
{
  eps-BearerIdentity 6,
  drb-Identity 5,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
  rlc-Config am : {
    ul-AM-RLC {
      t-PollRetransmit ms120,
      pollPDU p64,
      pollByte kB750,
      maxRetxThreshold t16
    },
    dl-AM-RLC {
      t-Reordering ms50,
      t-StatusProhibit ms50
    }
  },
  logicalChannelIdentity 4,
  logicalChannelConfig {
    ul-SpecificParameters {
      priority 9,
      prioritisedBitRate kbps8,
      bucketSizeDuration ms300,
      logicalChannelGroup 3
    }
  }
}
```

如何抓取每个Logical Channel的log

- SUE

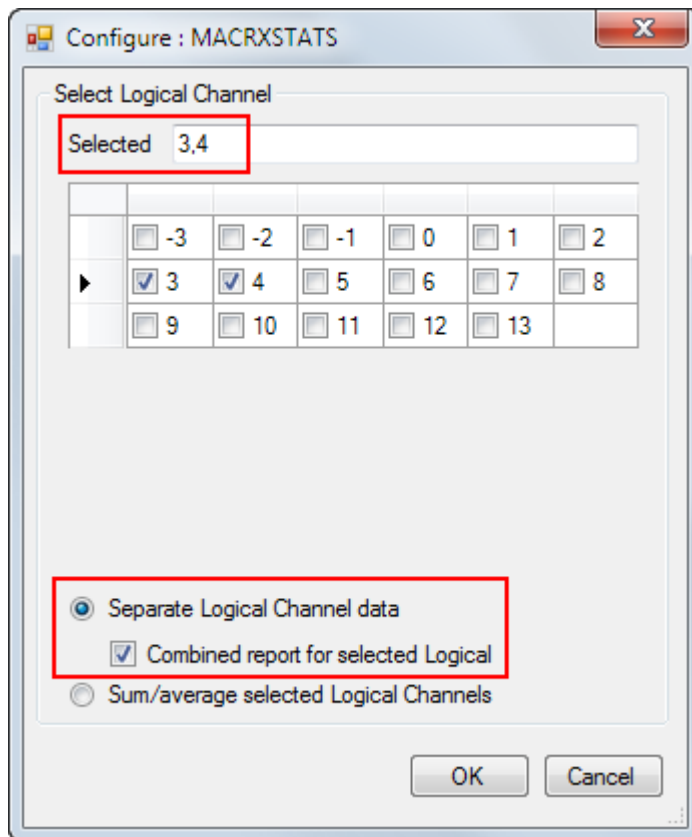
- MACRXSTATS/MACTXSTATS

- 默认设置：所有Logical Channel合并统计，以MACRXSTATS为例。



如何抓取每个Logical Channel的log

- 分别抓取每个Logical Channel的log，以MACRXSTATS为例。
 - 根据测试需要，选择所希望抓取的Logical Channel，其中Logical Channel ID对应Protocol log的 “*logicalChannelIdentity*” 。



```
logicalChannelIdentity 3,  
logicalChannelConfig {  
    ul-SpecificParameters {  
        priority 10,  
        prioritisedBitRate kbps8,  
        bucketSizeDuration ms100,  
        logicalChannelGroup 3  
    }  
}
```

```
logicalChannelIdentity 4,  
logicalChannelConfig {  
    ul-SpecificParameters {  
        priority 9,  
        prioritisedBitRate kbps8,  
        bucketSizeDuration ms300,  
        logicalChannelGroup 3  
    }  
}
```

如何抓取每个Logical Channel的log

- 配置完成后，实时抓取和查看每个Logical Channel的统计信息。

The screenshot displays the 'Logging Controller' window. On the left, a list of logging channels is shown with columns for Name, Log, View, Rate, and Stop. The 'MACRXSTATS [instI...' channel is selected. On the right, the 'MACRXSTATS' tab is active, showing a tree view of statistics including MAC PDU, MAC SDU, and Padding. The bottom status bar shows 'Logical_Channel_ID 3' and 'Logical_Channel_ID 4'.

Name	Log	View	Rate	Stop
ULHARQTX	<input checked="" type="checkbox"/>		1000	
ULHARQSUMMARY	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1THROUGHPUT	<input type="checkbox"/>	<input type="checkbox"/>	10	
UEOVERVIEW	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1DLRBUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1ULRBUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACRX	<input type="checkbox"/>		1000	
MACRXSTATS [instI...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	
MACMBMSSTATS [i...	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACTX	<input type="checkbox"/>		1000	
MACTXSTATS [instI...	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACTFS [instID:0-31]	<input type="checkbox"/>		1000	
RLCRXSTATS [instID...	<input type="checkbox"/>	<input type="checkbox"/>	10	
RLCMBMSSTATS [in...	<input type="checkbox"/>	<input type="checkbox"/>	10	
RLCTXSTATS [instID...	<input type="checkbox"/>	<input type="checkbox"/>	10	
PDCPRXSTATS [instI...	<input type="checkbox"/>	<input type="checkbox"/>	10	
PDCPTXSTATS [instI...	<input type="checkbox"/>	<input type="checkbox"/>	10	
BCHRX [instID:0,1]	<input type="checkbox"/>		1000	
L1CELLHANDOVER [...]	<input type="checkbox"/>	<input type="checkbox"/>	5	
ProtocolLog	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1000	
Automatic	<input type="checkbox"/>	<input type="checkbox"/>		

Description	Value	Units	Col	S
MAC PDU				
PDU Throughput		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Control Blocks			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Discards			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MAC SDU				
SDU Throughput		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Average SDU S...		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Padding				
Padding Size		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Padding Overh...		%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

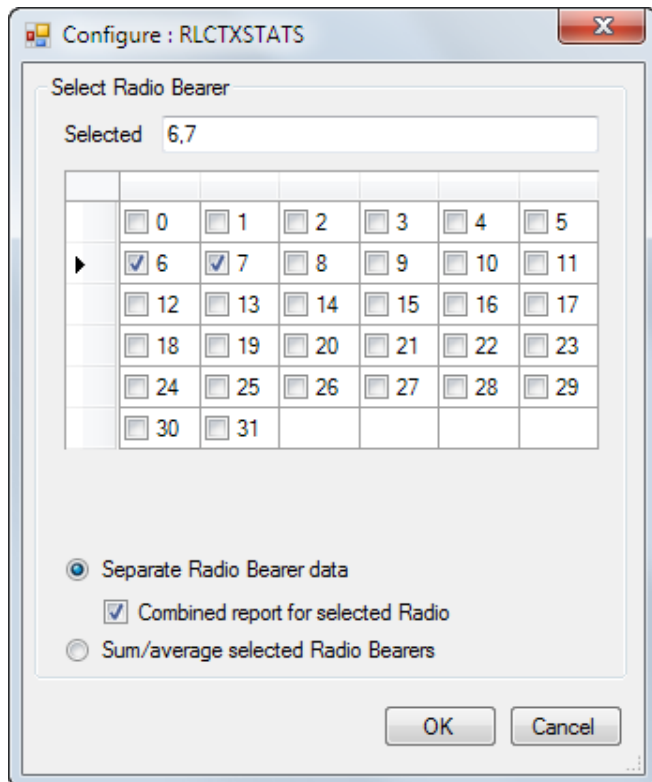
Test Manager | Logging Controller | Logical_Channel_ID 3 | Logical_Channel_ID 4

如何抓取每个Radio Bearer的log

• SUE

– RLCRXSTATS/RLCTXSTATS

- 方法和配置MACRXSTATS/MACTXSTATS类似。
 - *Radio Bearer ID = "drb-Identity + 2".*



```
drb-ToAddModList {
{
  eps-BearerIdentity 5,
  drb-Identity 4,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
drb-ToAddModList {
{
  eps-BearerIdentity 6,
  drb-Identity 5,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
}
```

如何抓取每个Radio Bearer的log

- 配置完成后，实时抓取和查看每个Radio Bearer的统计信息。

The screenshot displays the 'Logging Controller' window, which is used to configure logging for various radio bearers. The window is divided into two main sections: a list of loggers on the left and a detailed view of the selected logger on the right.

Left Panel: Logger List

Name	Log	View	Rate	Stop
ULHARQTX	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1000	<input type="checkbox"/>
ULHARQSUMMARY	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
L1THROUGHPUT	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
UEOVERVIEW	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
L1DLRUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
L1ULRUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
MACRX	<input type="checkbox"/>	<input type="checkbox"/>	1000	<input type="checkbox"/>
MACRXSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
MACMBMSSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
MACTX	<input type="checkbox"/>	<input type="checkbox"/>	1000	<input type="checkbox"/>
MACTXSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
MACTFS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	1000	<input type="checkbox"/>
RLCRXSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
RLCMBMSSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
RLCTXSTATS [instID:0-31]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	<input type="checkbox"/>
PDCPRXSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
PDCPTXSTATS [instID:0-31]	<input type="checkbox"/>	<input type="checkbox"/>	10	<input type="checkbox"/>
BCHRX [instID:0,1]	<input type="checkbox"/>	<input type="checkbox"/>	1000	<input type="checkbox"/>
L1CELLHANDOVER [instID:0,1]	<input type="checkbox"/>	<input type="checkbox"/>	5	<input type="checkbox"/>
ProtocolLog	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1000	<input type="checkbox"/>
Automatic	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Right Panel: RLCTXSTATS Detail View

Description	Value	Units	Col	S
Total Throughput				
Total Throughput		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Radio Bearer Stats				
PDU Transmit Rate		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Throughput		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Receive Rate		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Average PDU Size		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Average SDU Size		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BO		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Average Window Size			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PDU ACK Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PDU NACK Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PDU Retry Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sub-PDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Resegmentation Depth			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Poll Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Status PDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reset Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RTT		mS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Latency		mS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Bottom Panel: Test Manager

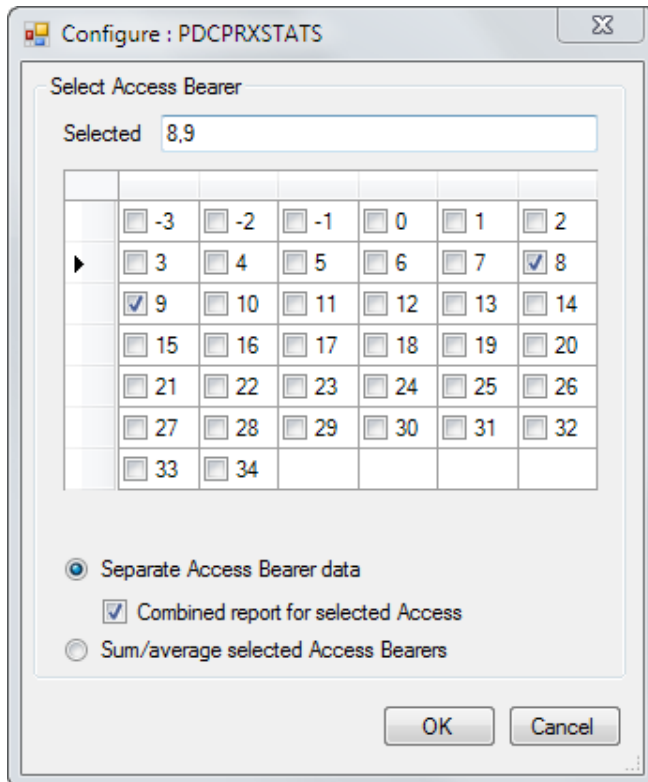
The bottom panel shows the 'Test Manager' tab, which includes a 'Logging Controller' sub-tab. Below this, there are two input fields for 'Radio_Bearer_ID 6' and 'Radio_Bearer_ID 7', which are highlighted with a red box.

如何抓取每个Access Bearer的log

- SUE

- PDCPRXSTATS/PDCPTXSTATS

- 方法和配置MACRXSTATS/MACTXSTATS类似。
 - *Access Bearer ID = "eps-BearerIdentity + 3".*



```

{
  eps-BearerIdentity 5,
  drb-Identity 4,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
}

{
  eps-BearerIdentity 6,
  drb-Identity 5,
  pdcp-Config {
    discardTimer ms750,
    rlc-AM {
      statusReportRequired TRUE
    },
    headerCompression notUsed : NULL
  },
}
  
```

如何抓取每个Access Bearer的log

- 配置完成后，实时抓取和查看每个Access Bearer的统计信息。

The screenshot displays the 'Logging Controller' window. On the left, a list of logging categories is shown with columns for Name, Log, View, Rate, and Stop. The 'PDCPRXSTATS' category is selected and configured. On the right, the 'PDCPRXSTATS' configuration panel is visible, showing a tree view of statistics and their corresponding units and checkboxes.

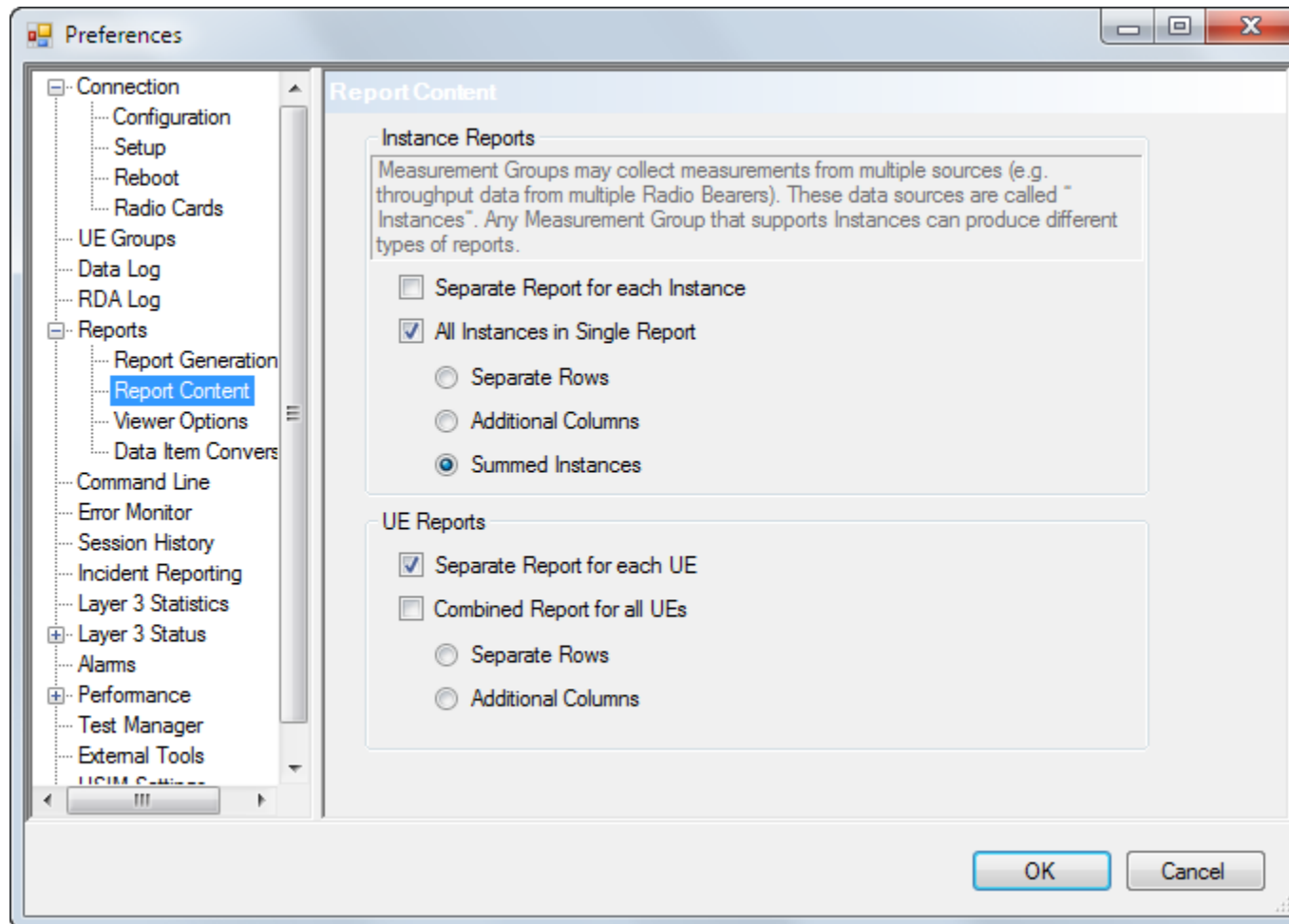
Name	Log	View	Rate	Stop
ULHARQTX	<input checked="" type="checkbox"/>		1000	
ULHARQSUMMARY	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1THROUGHPUT	<input type="checkbox"/>	<input type="checkbox"/>	10	
UEOVERVIEW	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1DLRUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	
L1ULRUSAGE	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACRX	<input type="checkbox"/>		1000	
MACRXSTATS [instl...	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACMBMSSTATS [i...	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACTX	<input type="checkbox"/>		1000	
MACTXSTATS [instl...	<input type="checkbox"/>	<input type="checkbox"/>	10	
MACTFS [instID:0-31]	<input type="checkbox"/>		1000	
RLCRXSTATS [instID...	<input type="checkbox"/>	<input type="checkbox"/>	10	
RLCMBMSSTATS [in...	<input type="checkbox"/>	<input type="checkbox"/>	10	
RLCTXSTATS [instID...	<input type="checkbox"/>	<input type="checkbox"/>	10	
PDCPRXSTATS [instl...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	
PDCPTXSTATS [instl...	<input type="checkbox"/>	<input type="checkbox"/>	10	
BCHRX [instID:0,1]	<input type="checkbox"/>		1000	
L1CELLHANDOVER [...]	<input type="checkbox"/>	<input type="checkbox"/>	5	
ProtocolLog	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1000	
Automatic	<input type="checkbox"/>	<input type="checkbox"/>		

Description	Value	Units	Col	S
Total Throughput				
Total Throughput		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Access Bearer Stats				
PDU Receive R...		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Transmit...		Kbps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDU Count			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Average PDU S...		Bytes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Out of order PD...			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Duplicate PDUs			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lost PDUs			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

At the bottom of the window, the 'Test Manager' tab is active, and the 'Logging Controller' sub-tab is selected. Below the main window, there are two input fields: 'Access_Bearer_ID 8' and 'Access_Bearer_ID 9'.

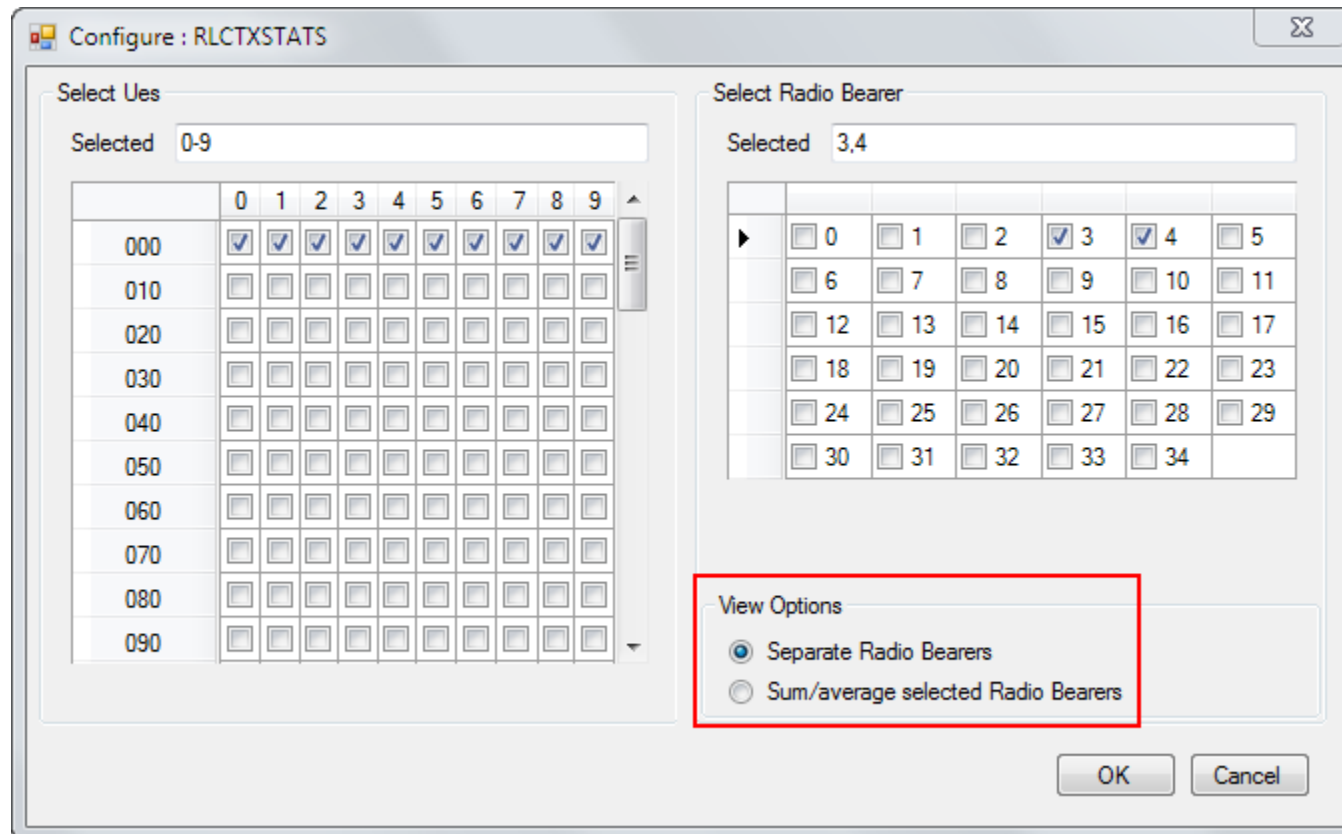
如何独立抓取Logical Channel/Radio Bearer/Access Bearer log - CUE

- 配置 “*Report Content*” .



如何独立抓取Logical Channel/Radio Bearer/Access Bearer log - CUE

- 配置方法和SUE类似。

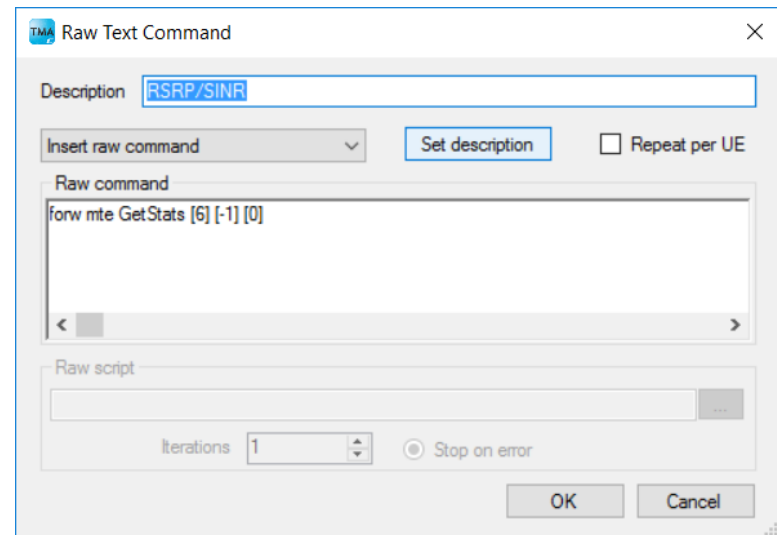
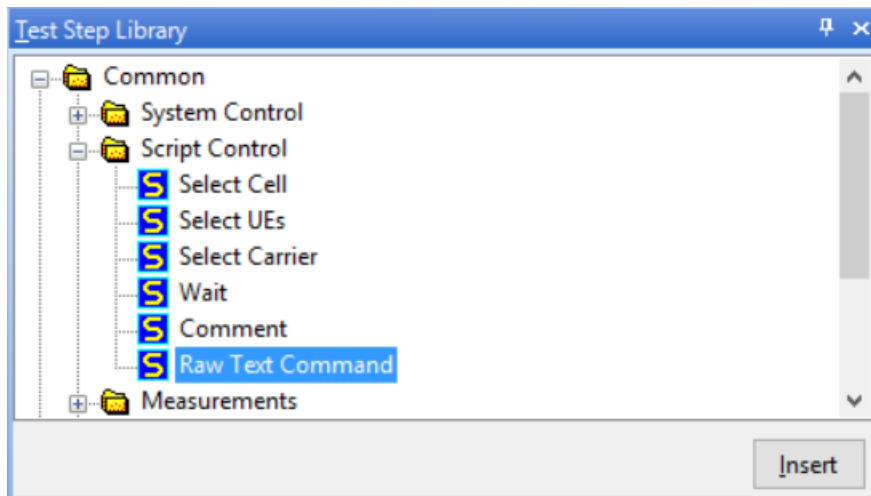


进阶TM500 logs

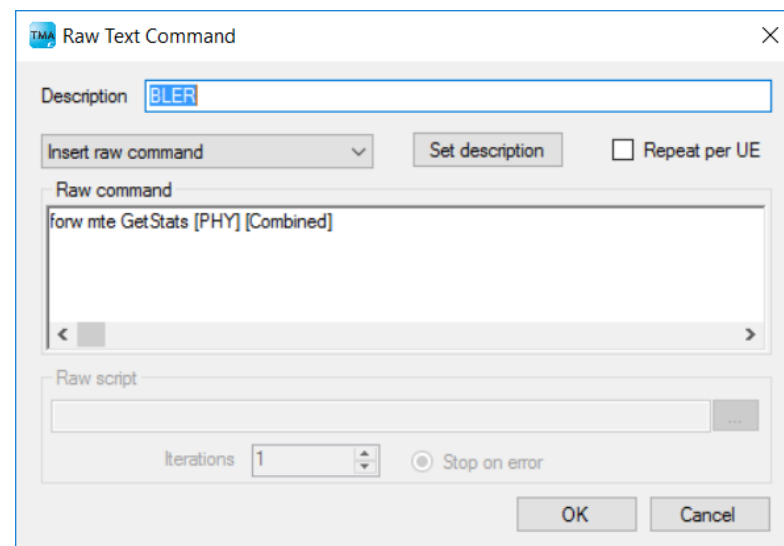
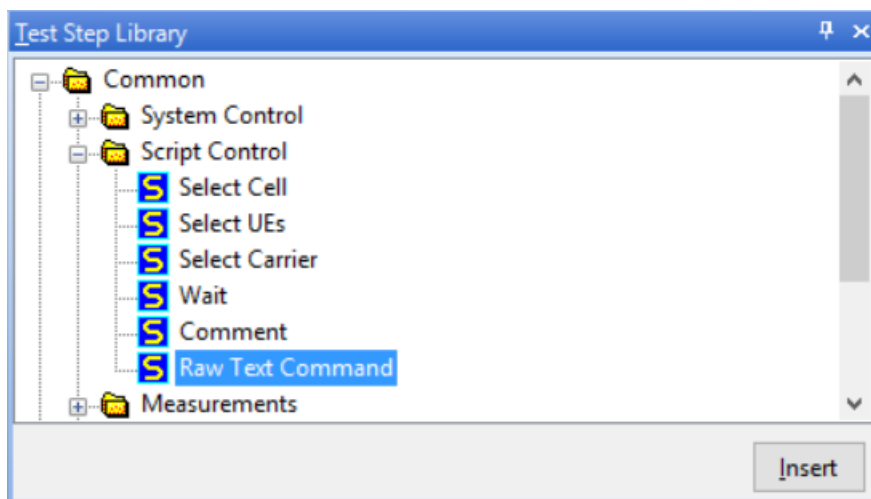
- RSRP/SINR
- BLER/L1 Throughput
- Display UE Status
- Display KPI Statistics
- Display RACH Statistics
- Layer 3 Statistics
- System Summary
- DSP/HLC log



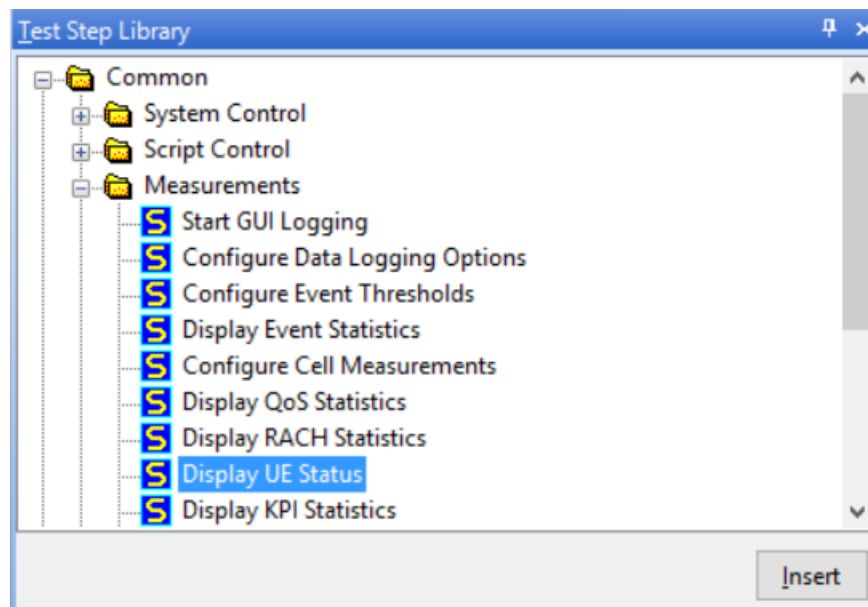
- 功能：查询每个小区的RSRP/SINR
 - **Raw command:** *forw mte GetStats [6] [-1] [0]*
 - **Description:** RSRP/SINR



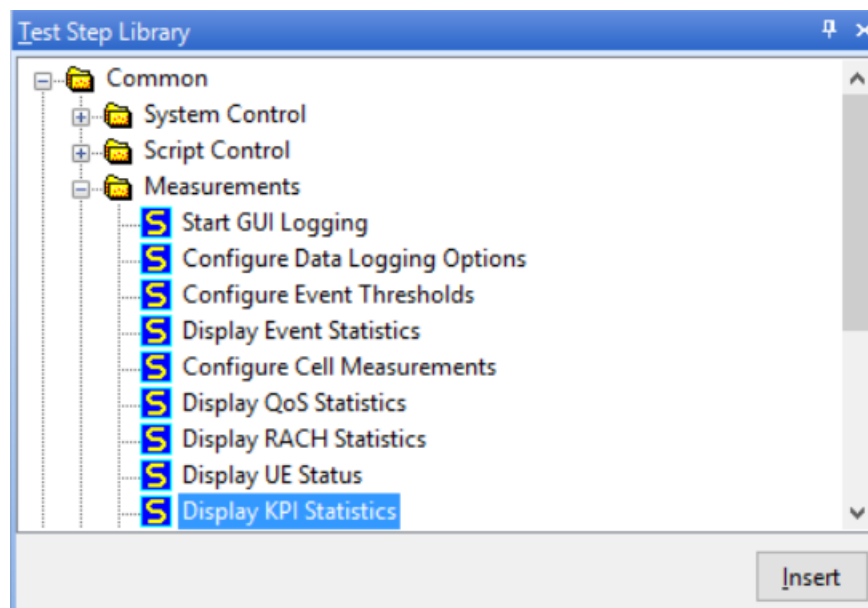
- 功能：查询每个小区的BLER以及物理层吞吐量。
 - **Raw command:** *forw mte GetStats [PHY] [Combined]*
 - **Description:** BLER



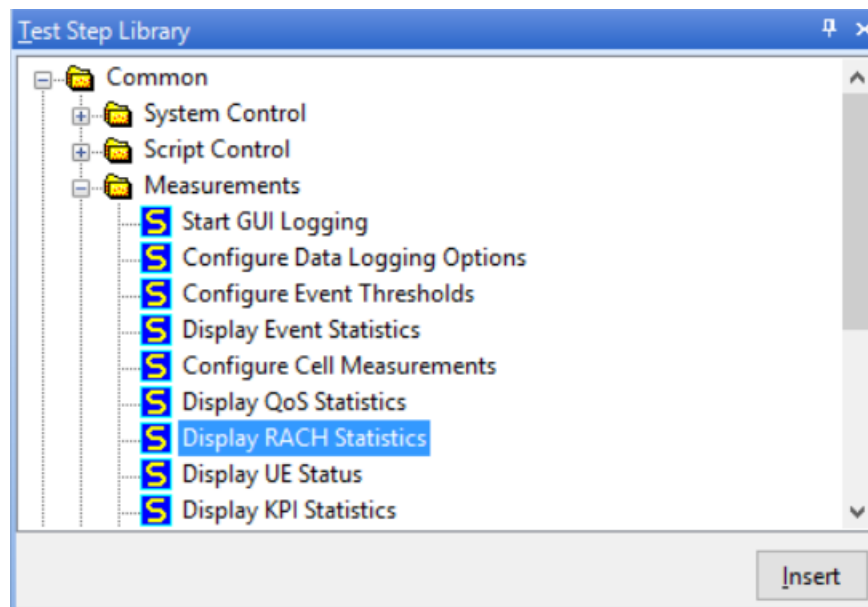
- 功能：查询UE的RRC/NAS/DTE/MTS Traffic/MTS Mobility状态。



- 功能：查询RRC/NAS各项KPI.

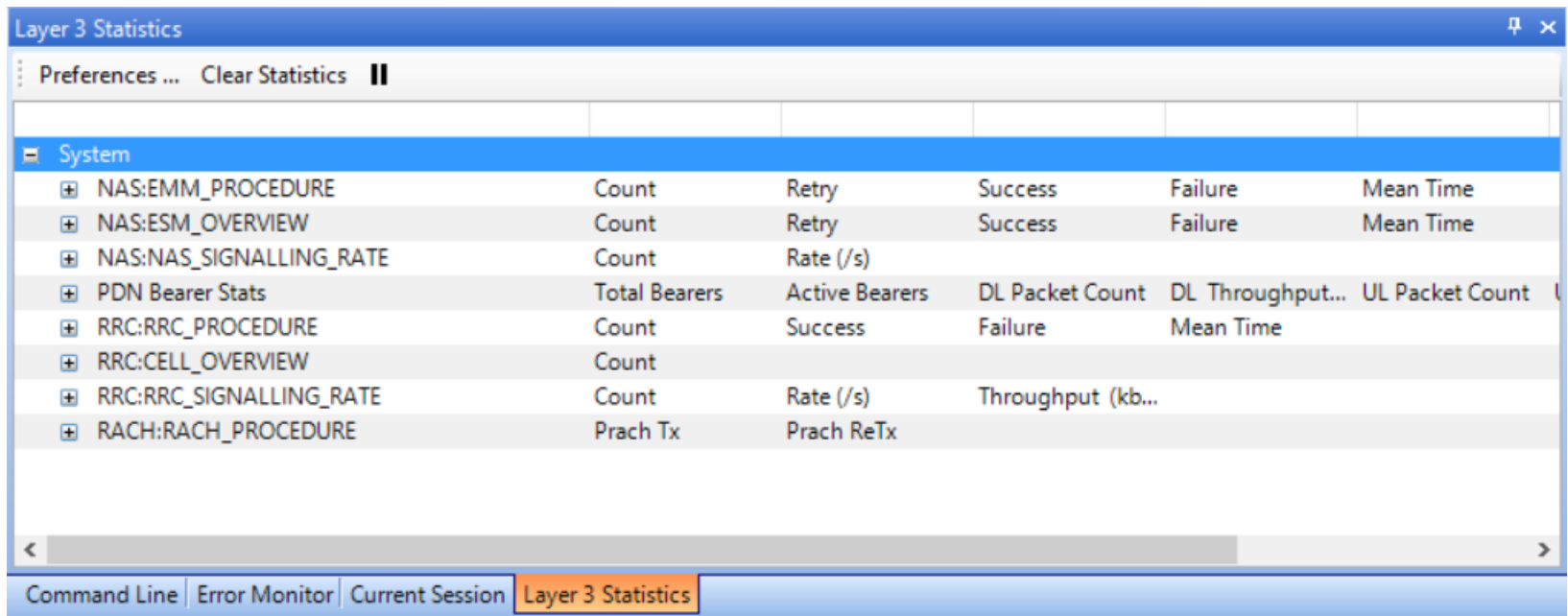


- 功能：查询RACH相关的各项KPI.



Layer 3 Statistics

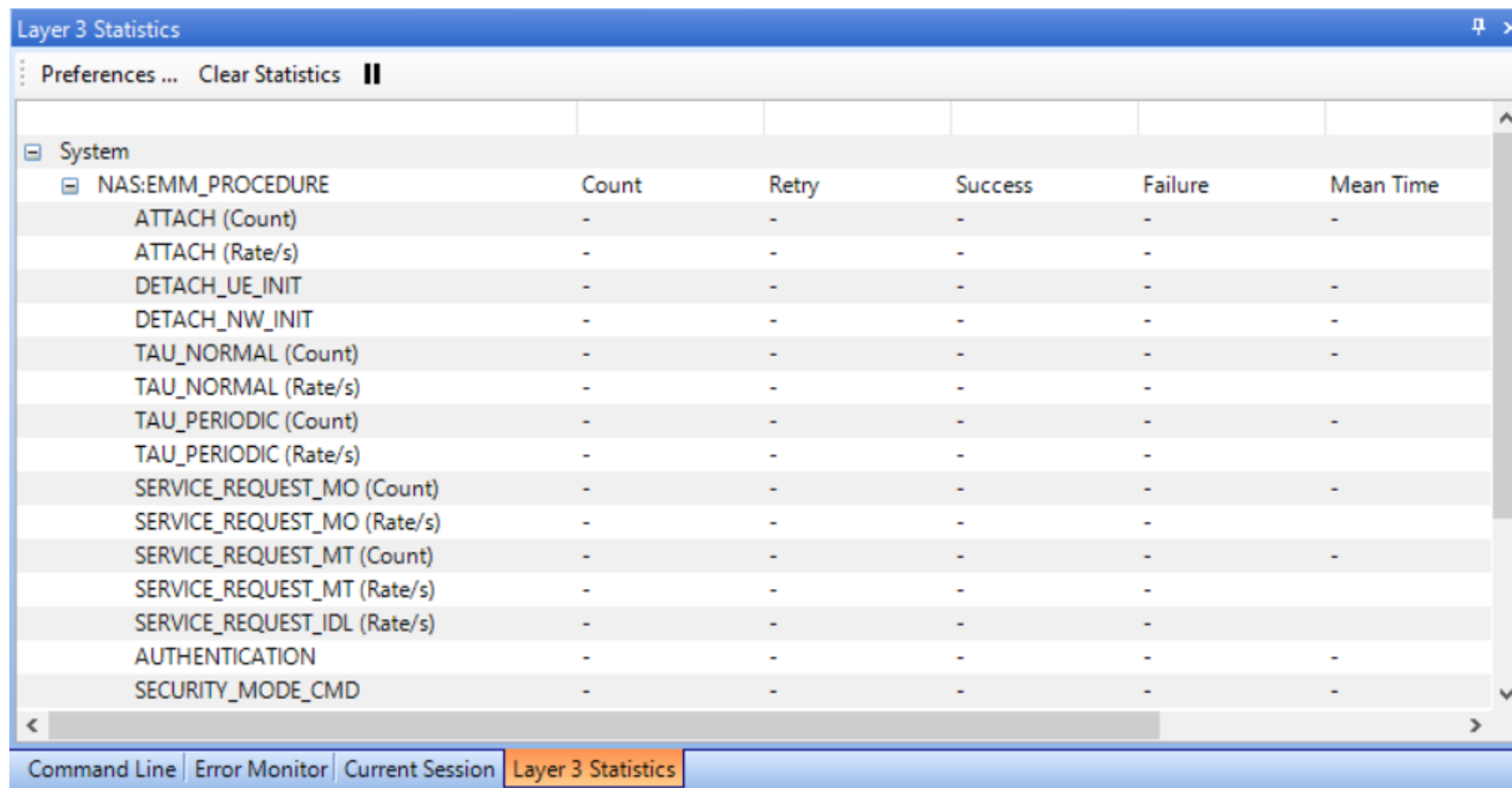
- 实时查看系统或小区的RRC/NAS KPI.
 - 可以用Display KPI Statistics将结果打印至Command Line log.
 - GUI log: RRCSTATS/NASSTATS



Layer 3 Statistics						
Preferences ... Clear Statistics						
System						
+	NAS:EMM_PROCEDURE	Count	Retry	Success	Failure	Mean Time
+	NAS:ESM_OVERVIEW	Count	Retry	Success	Failure	Mean Time
+	NAS:NAS_SIGNALLING_RATE	Count	Rate (/s)			
+	PDN Bearer Stats	Total Bearers	Active Bearers	DL Packet Count	DL Throughput...	UL Packet Count
+	RRC:RRC_PROCEDURE	Count	Success	Failure	Mean Time	
+	RRC:CELL_OVERVIEW	Count				
+	RRC:RRC_SIGNALLING_RATE	Count	Rate (/s)	Throughput (kb...		
+	RACH:RACH_PROCEDURE	Prach Tx	Prach ReTx			

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

Layer 3 Statistics



The screenshot shows a software window titled "Layer 3 Statistics". At the top, there are buttons for "Preferences ..." and "Clear Statistics", followed by a pause icon. Below this is a tree view with "System" expanded, showing "NAS:EMM_PROCEDURE". The main area is a table with columns: Count, Retry, Success, Failure, and Mean Time. The table lists various EMM procedures and their associated metrics, all showing dashes (-) for values. At the bottom, there is a tabbed interface with four tabs: "Command Line", "Error Monitor", "Current Session", and "Layer 3 Statistics" (which is selected and highlighted with an orange border).

	Count	Retry	Success	Failure	Mean Time
ATTACH (Count)	-	-	-	-	-
ATTACH (Rate/s)	-	-	-	-	-
DETACH_UE_INIT	-	-	-	-	-
DETACH_NW_INIT	-	-	-	-	-
TAU_NORMAL (Count)	-	-	-	-	-
TAU_NORMAL (Rate/s)	-	-	-	-	-
TAU_PERIODIC (Count)	-	-	-	-	-
TAU_PERIODIC (Rate/s)	-	-	-	-	-
SERVICE_REQUEST_MO (Count)	-	-	-	-	-
SERVICE_REQUEST_MO (Rate/s)	-	-	-	-	-
SERVICE_REQUEST_MT (Count)	-	-	-	-	-
SERVICE_REQUEST_MT (Rate/s)	-	-	-	-	-
SERVICE_REQUEST_IDL (Rate/s)	-	-	-	-	-
AUTHENTICATION	-	-	-	-	-
SECURITY_MODE_CMD	-	-	-	-	-

Layer 3 Statistics

Layer 3 Statistics					
Preferences ... Clear Statistics					
System					
NAS:EMM_PROCEDURE	Count	Retry	Success	Failure	Mean Time
NAS:ESM_OVERVIEW	Count	Retry	Success	Failure	Mean Time
PDN_CONNECTIVITY	-	-	-	-	-
PDN_DISCONNECT	-	-	-	-	-
BEARER_RESOURCE_ADD (Count)	-	-	-	-	-
BEARER_RESOURCE_ADD (Rate/s)	-	-	-	-	-
BEARER_RESOURCE_DELETE	-	-	-	-	-
BEARER_RESOURCE_MODIFY	-	-	-	-	-
NW_ACTIVATE_DEDICATED_BEARER	-	-	-	-	-
NW_MODIFY_BEARER	-	-	-	-	-
NW_DEACTIVATE_BEARER	-	-	-	-	-
NAS:NAS_SIGNALLING_RATE	Count	Rate (/s)			
PDN Bearer Stats	Total Bearers	Active Bearers	DL Packet Count	DL Throughput...	UL Packet Count
RRC:RRC_PROCEDURE	Count	Success	Failure	Mean Time	
RRC:CELL_OVERVIEW	Count				
RRC:RRC_SIGNALLING_RATE	Count	Rate (/s)	Throughput (kb...		

Layer 3 Statistics

Layer 3 Statistics					
Preferences ... Clear Statistics					
System					
NAS:EMM_PROCEDURE	Count	Retry	Success	Failure	Mean Time
NAS:ESM_OVERVIEW	Count	Retry	Success	Failure	Mean Time
NAS:NAS_SIGNALLING_RATE	Count	Rate (/s)			
NAS_DOWNLINK	-	-			
NAS_UPLINK	-	-			
PDN Bearer Stats	Total Bearers	Active Bearers	DL Packet Count	DL Throughput...	UL Packet Count
0 (DEFAULT)	-	-	-	-	-
0 (DEDICATED)	-	-	-	-	-
1 (DEFAULT)	-	-	-	-	-
1 (DEDICATED)	-	-	-	-	-
2 (DEFAULT)	-	-	-	-	-
2 (DEDICATED)	-	-	-	-	-
3 (DEFAULT)	-	-	-	-	-
3 (DEDICATED)	-	-	-	-	-
Total	-	-	-	-	-
RRC:RRC_PROCEDURE	Count	Success	Failure	Mean Time	

Layer 3 Statistics

Layer 3 Statistics					
Preferences ... Clear Statistics					
+	PDN Bearer Stats	Total Bearers	Active Bearers	DL Packet Count	DL Throughput... UL Packet Count
-	RRC:RRC_PROCEDURE	Count	Success	Failure	Mean Time
	RRC_CONNECTION_REQUEST (Count)	-	-	-	-
	RRC_CONNECTION_REQUEST (Rate/s)	-	-	-	-
	RRC_CONNECTION_REESTABLISHMENT	-	-	-	-
	RRC_HANDOVER (Count)	-	-	-	-
	RRC_HANDOVER (Rate/s)	-	-	-	-
	RRC_CONNECTION_RELEASE	-			
	RRC_CONNECTION_REJECT	-			
	PAGING_REQUEST_IDLE (Count)	-	-	-	
	PAGING_REQUEST_IDLE (Rate/s)	-	-	-	
	PAGING_REQUEST_OVERALL (Count)	-	-	-	
	PAGING_REQUEST_OVERALL (Rate/s)	-	-	-	
	MEASUREMENT_REPORT	-			
+	RRC:CELL_OVERVIEW	Count			
+	RRC:RRC_SIGNALLING_RATE	Count	Rate (/s)	Throughput (kb...	
+	RACH:RACH_PROCEDURE	Prach Tx	Prach ReTx		

Layer 3 Statistics

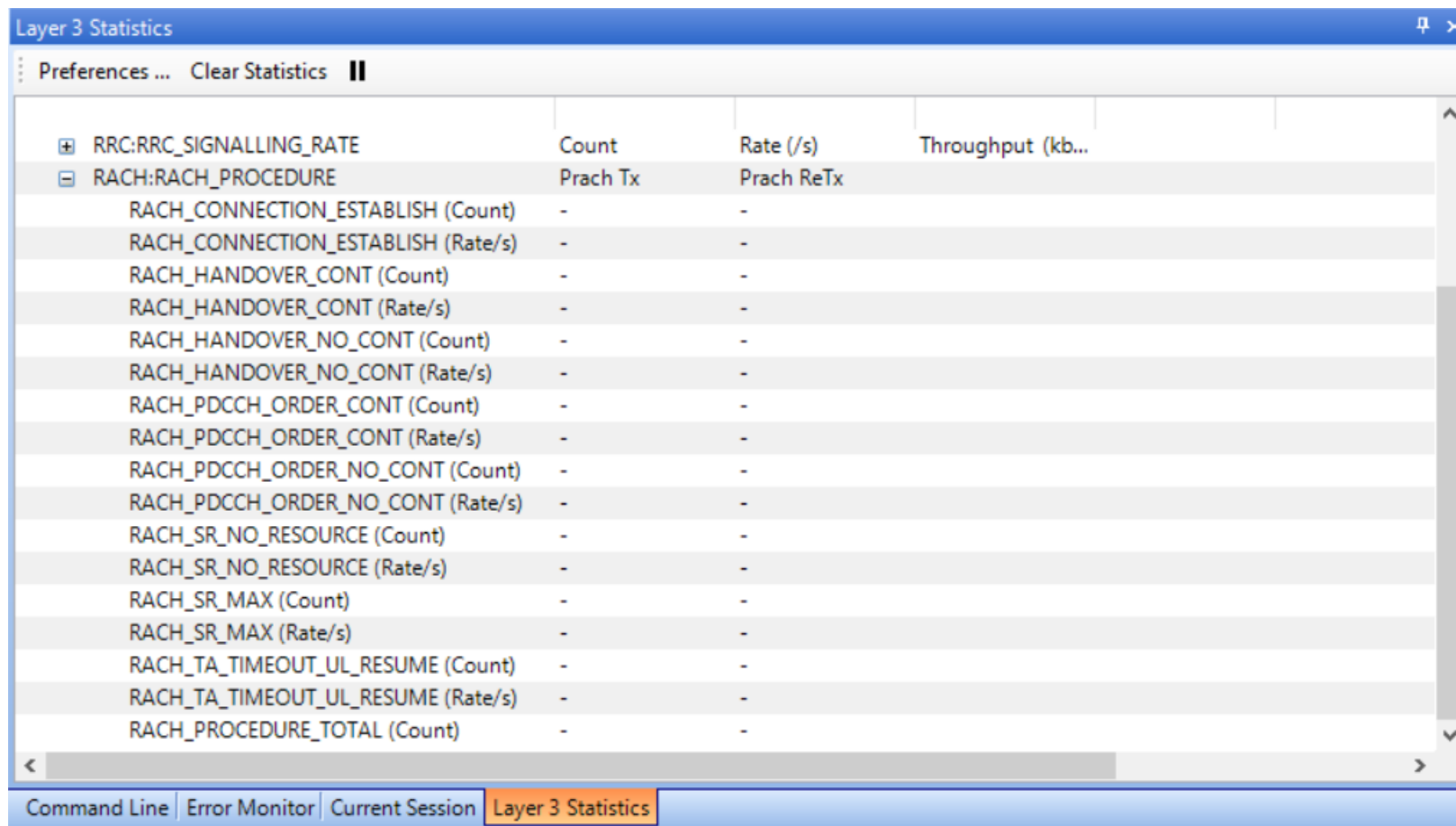
Layer 3 Statistics

Preferences ... Clear Statistics

System						
NAS:EMM_PROCEDURE	Count	Retry	Success	Failure	Mean Time	
NAS:ESM_OVERVIEW	Count	Retry	Success	Failure	Mean Time	
NAS:NAS_SIGNALLING_RATE	Count	Rate (/s)				
PDN Bearer Stats	Total Bearers	Active Bearers	DL Packet Count	DL Throughput...	UL Packet Count	
RRC:RRC_PROCEDURE	Count	Success	Failure	Mean Time		
RRC:CELL_OVERVIEW						
ATTACHED_UES		-				
CONNECTED_UES		-				
INACTIVE_UES		-				
IDLE_UES		-				
RRC:RRC_SIGNALLING_RATE	Count	Rate (/s)	Throughput (kb...			
RRC_DOWNLINK		-	-	-		
RRC_UPLINK		-	-	-		
RACH:RACH_PROCEDURE	Prach Tx	Prach ReTx				

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

Layer 3 Statistics

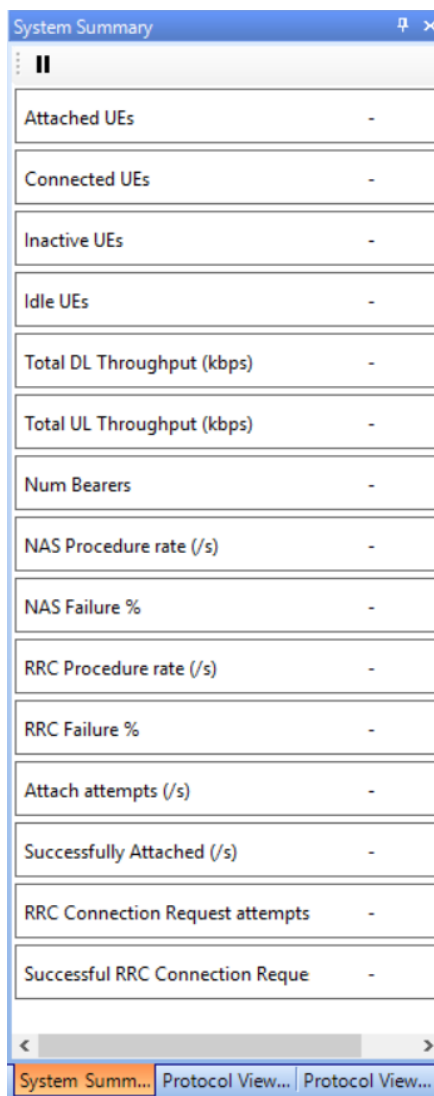


The screenshot shows a software window titled "Layer 3 Statistics". At the top, there are buttons for "Preferences ...", "Clear Statistics", and a pause icon. The main area contains a table with the following data:

	Count	Rate (/s)	Throughput (kb...
⊕ RRC:RRC_SIGNALLING_RATE			
⊖ RACH:RACH_PROCEDURE	Prach Tx	Prach ReTx	
RACH_CONNECTION_ESTABLISH (Count)	-	-	
RACH_CONNECTION_ESTABLISH (Rate/s)	-	-	
RACH_HANDOVER_CONT (Count)	-	-	
RACH_HANDOVER_CONT (Rate/s)	-	-	
RACH_HANDOVER_NO_CONT (Count)	-	-	
RACH_HANDOVER_NO_CONT (Rate/s)	-	-	
RACH_PDCCH_ORDER_CONT (Count)	-	-	
RACH_PDCCH_ORDER_CONT (Rate/s)	-	-	
RACH_PDCCH_ORDER_NO_CONT (Count)	-	-	
RACH_PDCCH_ORDER_NO_CONT (Rate/s)	-	-	
RACH_SR_NO_RESOURCE (Count)	-	-	
RACH_SR_NO_RESOURCE (Rate/s)	-	-	
RACH_SR_MAX (Count)	-	-	
RACH_SR_MAX (Rate/s)	-	-	
RACH_TA_TIMEOUT_UL_RESUME (Count)	-	-	
RACH_TA_TIMEOUT_UL_RESUME (Rate/s)	-	-	
RACH_PROCEDURE_TOTAL (Count)	-	-	

At the bottom of the window, there is a tabbed interface with four tabs: "Command Line", "Error Monitor", "Current Session", and "Layer 3 Statistics". The "Layer 3 Statistics" tab is currently selected and highlighted with an orange border.

- 实时查看系统级统计。



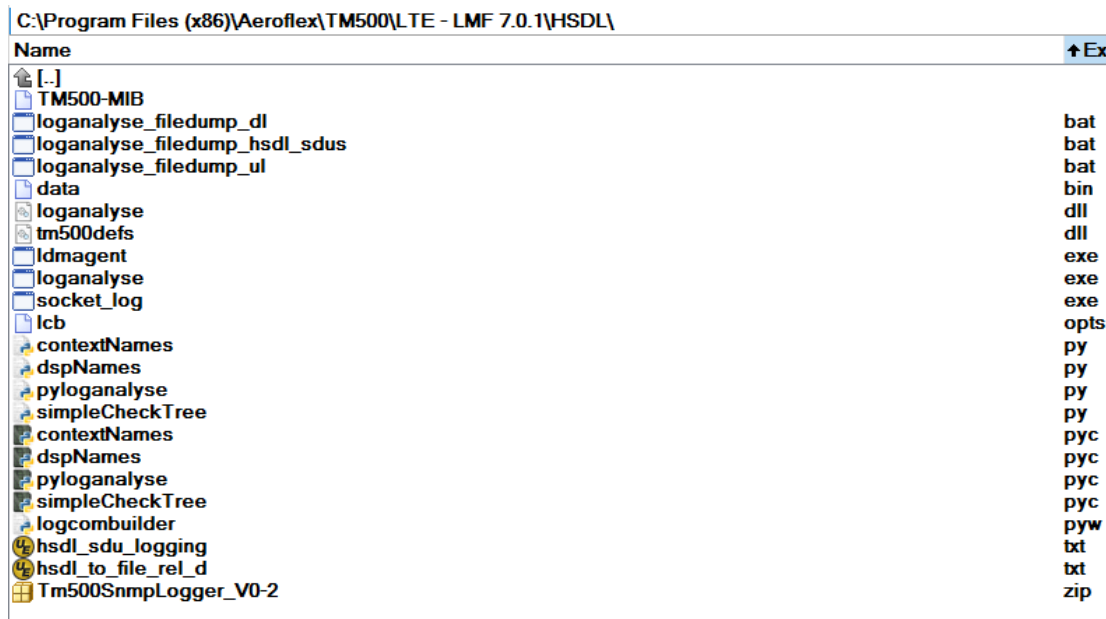
The screenshot shows a window titled "System Summary" with a list of network statistics. The statistics are as follows:

Statistic	Value
Attached UEs	-
Connected UEs	-
Inactive UEs	-
Idle UEs	-
Total DL Throughput (kbps)	-
Total UL Throughput (kbps)	-
Num Bearers	-
NAS Procedure rate (/s)	-
NAS Failure %	-
RRC Procedure rate (/s)	-
RRC Failure %	-
Attach attempts (/s)	-
Successfully Attached (/s)	-
RRC Connection Request attempts	-
Successful RRC Connection Reque	-

The window has a status bar at the bottom with three tabs: "System Summ...", "Protocol View...", and "Protocol View...". The "System Summ..." tab is currently selected.

DSP/HLC log

- 除了GUI log，TM500还支持调试级别的DSP/HLC log，非常详细打印出L1/MAC/RLC/PDCP/RRC相关信息，最小时间粒度是TTI。
 - DSP log: L1相关相关。
 - HLC log: MAC/RLC/PDCP/RRC相关信息。
- 每个T500软件安装目录下自带HSDL文件夹，DSP/HLC log抓取相关的文件包括
 - socket_log.exe
 - loganalyse.exe/loganalyse.dll/tm500defs.dll



- DSP/HCL log抓取之前需要运行DSP logging mask，以打开不同的log开关。针对不同问题的定位，请咨询TM500 FAE获取对应的logging mask。
- 抓取DSP/HLC log时，请严格按照TM500 FAE建议的步骤抓取。
- ***socket_log***和***loganalyse***都可以用于抓取DSP/HLC log，但为避免流控，先用***socket_log***抓取二进制码流，然后再离线用***loganalyse***解析二进制码流为文本格式。
- 不同TM500软件之间的***socket_log***基本是通用的，但为保险起见，建议还是采用当前使用的TM500软件HSDL文件夹下的***socket_log***。
- 不同TM500软件之间的***loganalyse/tm500defs***有区别，所以请**务必**采用当前使用的TM500软件HSDL文件夹下的***loganalyse/tm500defs***，否则将导致DSP/HLC log解析异常。

- DSP/HLC log都通过统一的端口 **25700** 输出，命令格式例如：

```
socket_log.exe 192.168.10.70 25700 -f MUX.dat -s 200 -l 20
```

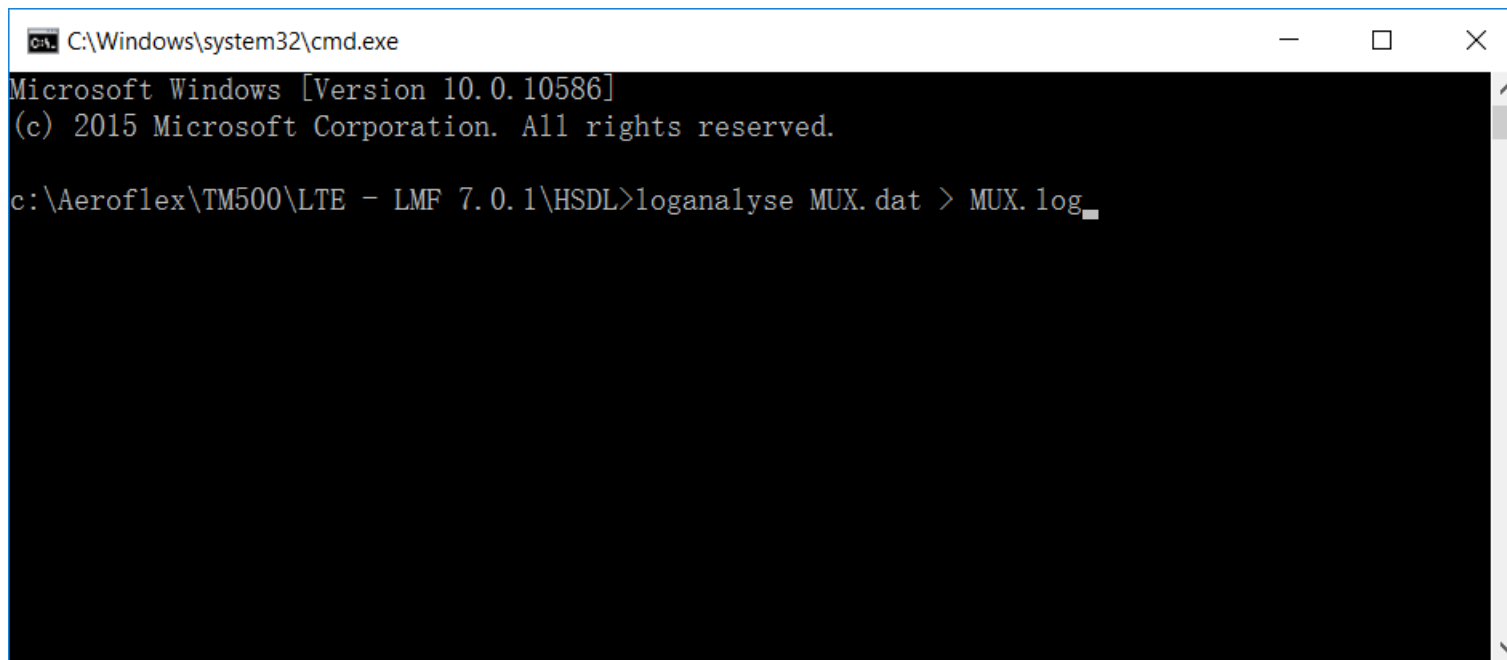
-f: 保存的文件名

-s: 指定文件大小进行分段，建议以**200MB**分段。

-l: log抓取的时间

- loganalyse解析

- 请在loganalyse所在文件夹下打开DOS窗口，然后运行解析命令。
- 请参阅后续*loganalyse Options*更多解析选项。



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.10586]
(c) 2015 Microsoft Corporation. All rights reserved.

c:\Aeroflex\TM500\LTE - LMF 7.0.1\HSDL>loganalyse MUX.dat > MUX.log
```



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.10586]
(c) 2015 Microsoft Corporation. All rights reserved.

c:\Aeroflex\TM500\LTE - LMF 7.0.1\HSDL>loganalyse -h

Usage: loganalyse [options] [-] [filename]

Options:
  -h [<option>]
    Prints detailed help for <option>. If <option> not specified, prints
    available options.
  -v
    This is used to report version information for loganalyse and each
    successfully loaded logging definition DLL.
  -i {<IP address>:<port>|<IP address>:|:<port>}
    Indicates that a TCP/IP socket should be used for input rather than
    a file.
  -D {<rat>| [<rat>-] <domain> [-<instance>.<core>] } [;...]
    Filters specified RAT and/or domain and/or node from the output,
    supplied as a semicolon delimited list.
    where:
        <rat>      - SA|LTE|UMTS|GERAN (case insensitive)
        <domain>   - HLC|DSP|UMBRA (case insensitive)
        <instance> - 0..255
        <core>     - 0..7
    Default: All RATs, domains & nodes are output when option not
    supplied
    NOTE1: See also -d which performs the inverse of this function.
    NOTE2: This option cannot be used at the same time as -d.
  -d {<rat>| [<rat>-] <domain> [-<instance>.<core>] } [;...]
    Selects the RATs and/or domains and/or nodes for which data is to be
```

```
C:\Windows\system32\cmd.exe

NOTE2: This option cannot be used at the same time as -d.
-d {<rat>| [<rat>-]<domain>[-<instance>.<core>]}[:...]
  Selects the RATs and/or domains and/or nodes for which data is to be
  reported, supplied as a semicolon delimited list.
  where:
    <rat>      - SA|LTE|UMTS|GERAN (case insensitive)
    <domain>   - HLC|DSP|UMBRA (case insensitive)
    <instance> - 0..255
    <core>     - 0..7
  Default: All RATs, domains & nodes when option not supplied
NOTE1: See also -D which performs the inverse of this function.
NOTE2: This option cannot be used at the same time as -D.
-F [{<rat>| [<rat>-]<domain>}:]{<message>|<base>}[:...]
  Filters one message or all messages in a base from the textual
  output, for a specified RAT and/or domain or all nodes, supplied as
  a semicolon delimited list.
  where:
    <rat>      - SA|LTE|UMTS|GERAN (case insensitive)
    <domain>   - HLC|DSP|UMBRA (case insensitive)
    <message>  - Message name (case sensitive)
    <base>     - Message base name (case sensitive)

NOTE1: See also -f which performs the inverse of this function.
NOTE2: This option cannot be used at the same time as -f.
-f [{<rat>| [<rat>-]<domain>}:]{<message>|<base>}[:...]
  Includes one message or all messages in a base in the textual
  output, for a specified RAT and/or domain or all nodes, at the
  exclusion of all others, supplied as a semicolon delimited list.
  where:
    <rat>      - SA|LTE|UMTS|GERAN (case insensitive)
```

```
C:\Windows\system32\cmd.exe

<rat>      - SA|LTE|UMTS|GERAN (case insensitive)
<domain>   - HLC|DSP|UMBRA (case insensitive)
<message>  - Message name (case sensitive)
<base>     - Message base name (case sensitive)

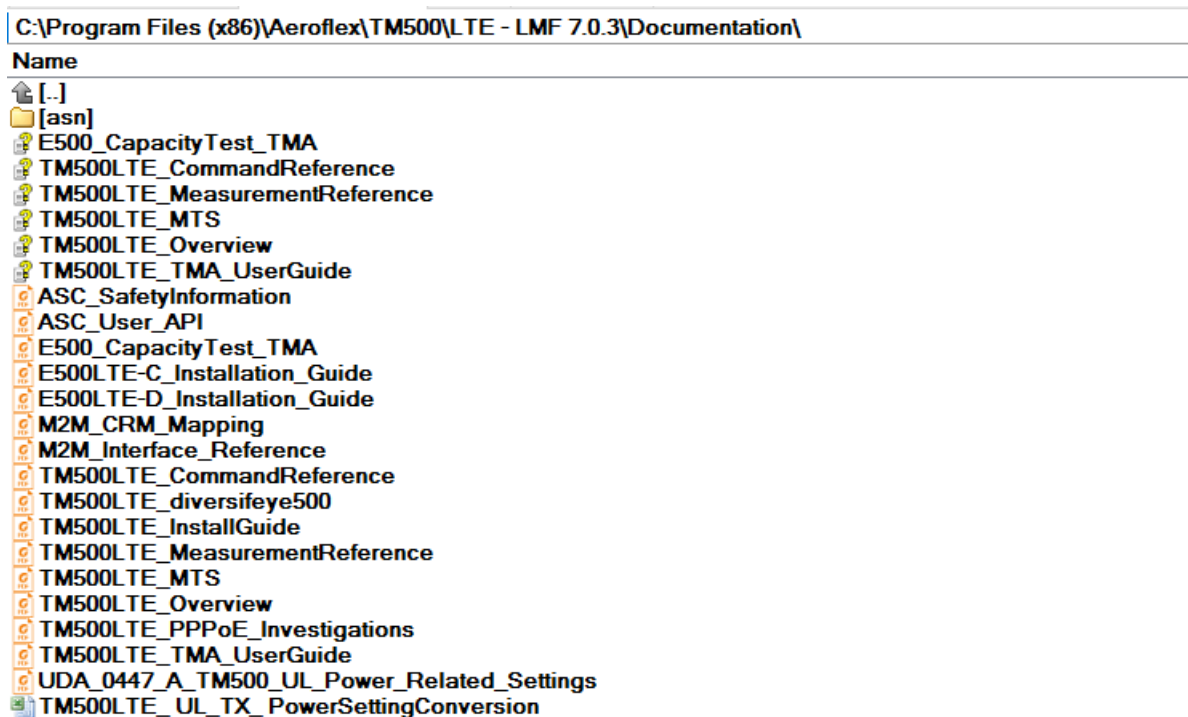
NOTE1: See also -F which performs the inverse of this function.
NOTE2: This option cannot be used at the same time as -F.
-w        Indicates that loganalyse should wait for a key press before
        exiting.
-N {on|off}
        Indicates whether loganalyse should prefix log text with a node
        identifier string (e.g. 'UMTS HLC 8.0').
-a [{on|off}]
        Indicates whether loganalyse should be operating in non-interactive
        (a.k.a. automation) mode
-r <logging definitions root directory>
        This is used to force a specific root directory to be searched for
        logging definition DLLs.
-o {<options file>|none}
        Override the default options file.
-g <graph type>[:...]
        This is used to generate a graphical view on the specified logging
        data.
-G <graph type>[:...]
        This shows the same graphical view as the -g option but filters the
        graphed messages from the textual output.
-t [{<format>}]
        This option is used to change the format of the time field in the
        textual output

'- ' can be used after an option with an optional parameter to prevent the
filename from being interpreted as the parameter.
```

TM500帮助文档



- 每个TM500软件的安装目录下都有 *Documentation* 的文件夹，例如：



- **Command Reference Manual**
 - TM500所有命令及参数的描述。
- **MTS Reference Manual (CUE)**
 - Mobility and Traffic Mode (MTS)相关命令及参数描述。
- **Measurement Reference Manual**
 - TM500所有log的描述。
- **TM500/E500 Install Guide**
 - TM500/E500环境搭建及配置，包括如何配置Hyper Terminal抓取Serial log。
- **TMA User Guide**
 - Test Mobile Application (TMA)用户界面的介绍和使用。

- TM500LTE_TMA_UserGuide.pdf
- TM500LTE_MeasurementReference.pdf

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