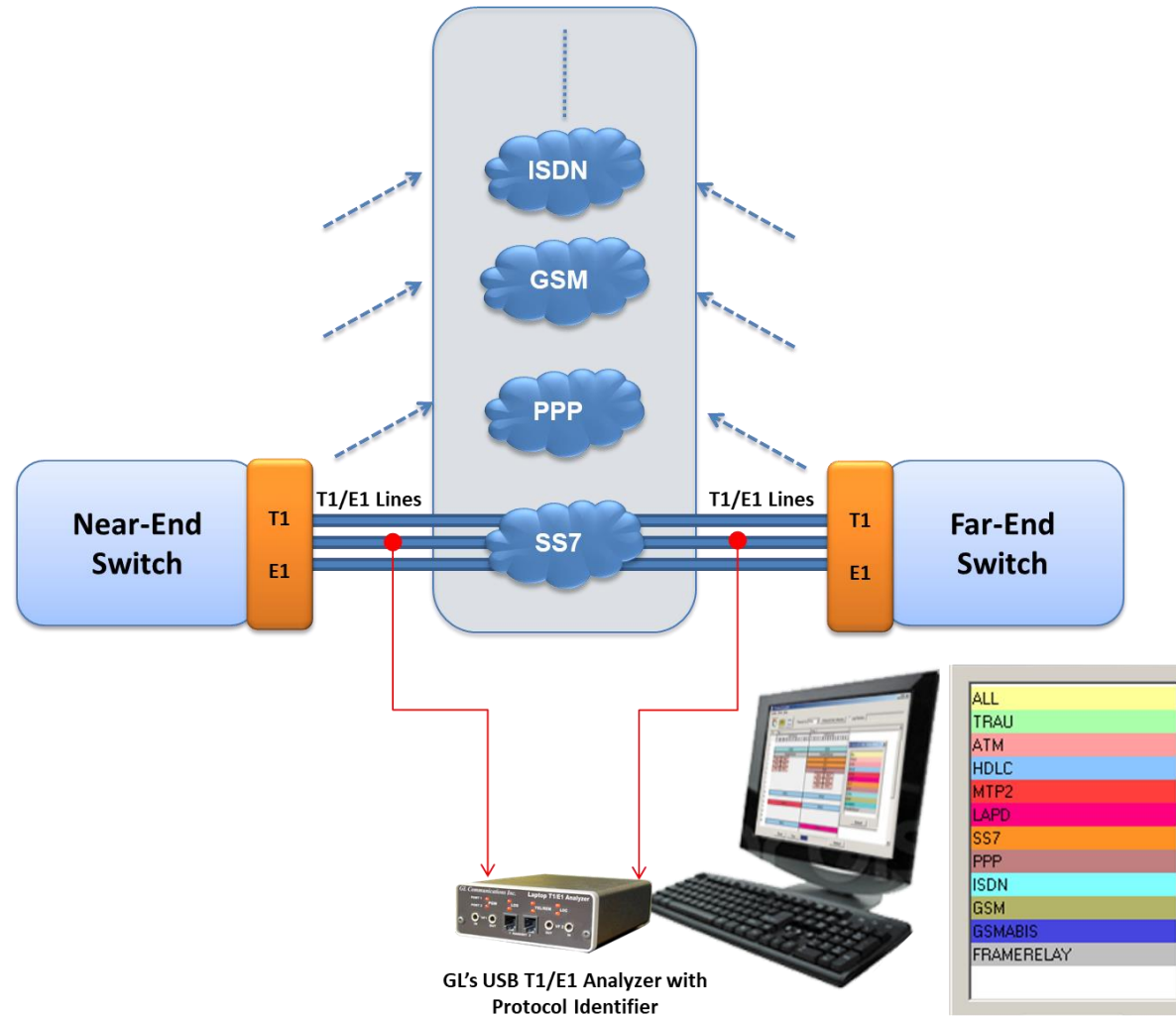

Protocol Identifier and Classifier



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Website: <https://www.gl.com>

Protocol Identifier



- Capable of detecting and classifying various protocols over T1/E1 lines.

Main Features

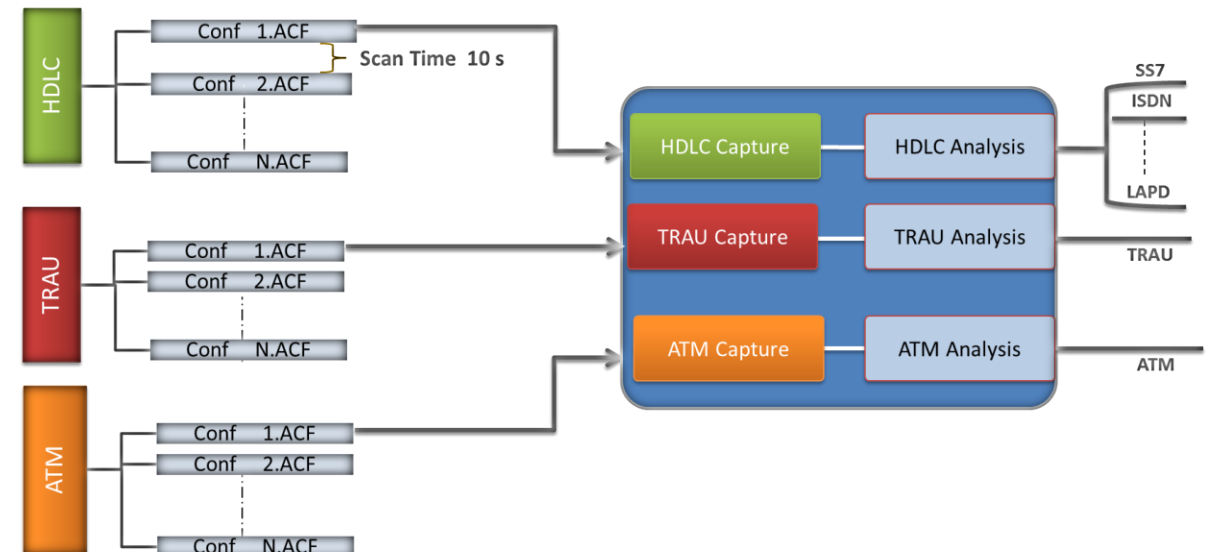
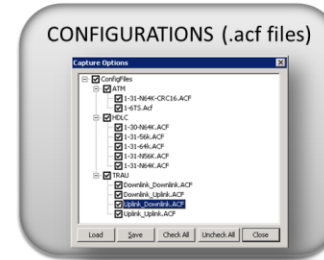
- HDLC based, ATM, and TRAU protocol classification supported.
- Classification of HDLC based protocols such as ISDN, SS7, PPP, Frame Relay, and GSM.
- Graphical view displays the timeslots and subchannels of the identified protocols.
- Statistical view displays the different protocols with the details of port, timeslots and subchannels.
- Stream Statistics view shows the count of total number of timeslots, sub-channels, and hyper-channels used by each protocol.
- Provides an option to log the protocol detected with device and channel information into a text file.
- Ability to Save configurations from HDLC, ATM, and TRAU protocols in Protocol Identifier.
- Detects protocols based on pre-defined configurations files for hyper-channels, sub-channels, and data rates.
- Supports filtering to display the unique selected protocol.
- Supports custom configuration of the colors to easily distinguish protocols.

Applications

- **Snapshot:** Obtain a real-time snapshot of protocol traffic on T1E1 lines.
- **Surveillance:** Identify protocol traffic on all the timeslots/sub channels simultaneously on multiple T1E1 lines.
- **Maintenance:** Helps technicians to quickly identify the content of any T1 or E1.
- **Troubleshooting:** Signaling (SS7, ISDN) can be detected on any T1/E1 timeslots; this helps technicians to quickly identify the timeslot of signaling links for further protocol analysis.

Working Principle

- Provides ready configurations for selecting various combination of channels, such as single timeslots, full rate hyper channels, multiple hyper-channels of different data rate – 64 kbbs, 56 kbbs (bits 2-8), 56 kbbs(bits 1-7), or sub-channels of 8k to 56k combinations.



Graphical View

- Graphical View identifies the protocols on each timeslot and sub channel of T1/E1 ports being monitored, and indicates using different colors.
- The colors can be customized for different protocols as per user requirement.

The screenshot displays the 'PC Protocol Classifier' software interface in 'Graphical View'. The main window shows a grid of timeslots (TS) and subchannels for two ports (Port 1 and Port 2). The protocols are color-coded: ISDN (cyan), FRAMERELAY (grey), TRAU (orange), SS7 (dark orange), PPP (brown), HDLC (blue), MTP2 (red), GSM (olive green), GSMABIS (magenta), and LAPD (pink). A 'Protocol Color Selection' dialog box is open on the right, showing a list of protocols with corresponding color swatches and a 'Default' button. The interface includes a menu bar (Config, Views, Help), a toolbar with icons for refresh, help, and search, and a status bar with 'Reset', 'Stop', and 'Refresh' buttons.

TS	Port 1								Port 2							
	SubChannel								SubChannel							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
0																
1	ISDN								ISDN							
2	FRAMERELAY								FRAMERELAY							
3	TRAU	TRAU							SS7							
4	TRAU	TRAU							SS7							
5	TRAU	TRAU							PPP							
6									TRAU	TRAU						
7									TRAU	TRAU						
8									TRAU	TRAU						
9																
10	HDLC								HDLC							
11																
12	MTP2								HDLC							
13																
14																
15																
16	HDLC								LAPD							

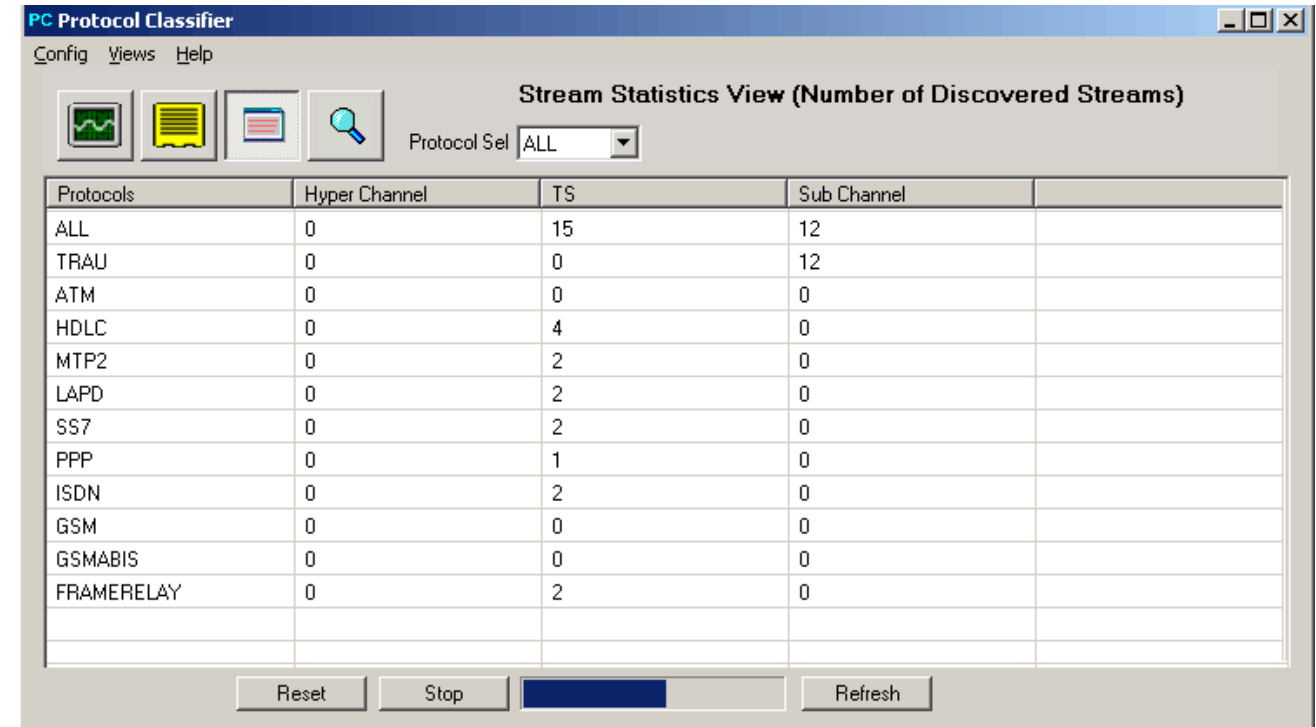
Statistical View

- This reports the protocols identified on each timeslot and sub channels row-wise.
- For example, the screen shows that the TRAU frames are identified on Port 1, timeslots 3 – sub channel 1–2 , timeslot 3 – sub channels 3–4, timeslot 4 – sub channel 1–2, and timeslot 4 – sub channel 3–4.

Device Name	Protocol Name
Timeslot # 1 : 1	ISDN
Timeslot # 1 : 10	HDLC
Timeslot # 1 : 2	FRAMERELAY
Timeslot # 2 : 1	ISDN
Timeslot # 2 : 10	HDLC
Timeslot # 2 : 2	FRAMERELAY
Timeslot # 2 : 3	SS7
Timeslot # 2 : 4	SS7
Timeslot # 2 : 5	PPP
Timeslot # 1 : 12	MTP2
Timeslot # 2 : 12	MTP2
Timeslot # 2 : 12	HDLC
Timeslot # 1 : 16	LAPD
Timeslot # 2 : 16	LAPD
Timeslot # 1 : 16	HDLC
SubChannel # 1 : 3 : 1 - 2	TRAU
SubChannel # 1 : 3 : 3 - 4	TRAU
SubChannel # 1 : 4 : 1 - 2	TRAU
SubChannel # 1 : 4 : 3 - 4	TRAU

Traffic Flow View (Stream Stats View)

- This displays the stream statistics such as the total count of hyper channels, timeslots, and sub channels used by individual protocols in a tabular format.
- It is an indication of the overall bandwidth consumption by the monitored traffic.



Protocols	Hyper Channel	TS	Sub Channel
ALL	0	15	12
TRAU	0	0	12
ATM	0	0	0
HDLC	0	4	0
MTP2	0	2	0
LAPD	0	2	0
SS7	0	2	0
PPP	0	1	0
ISDN	0	2	0
GSM	0	0	0
GSMABIS	0	0	0
FRAMERELAY	0	2	0

Stream Scan View

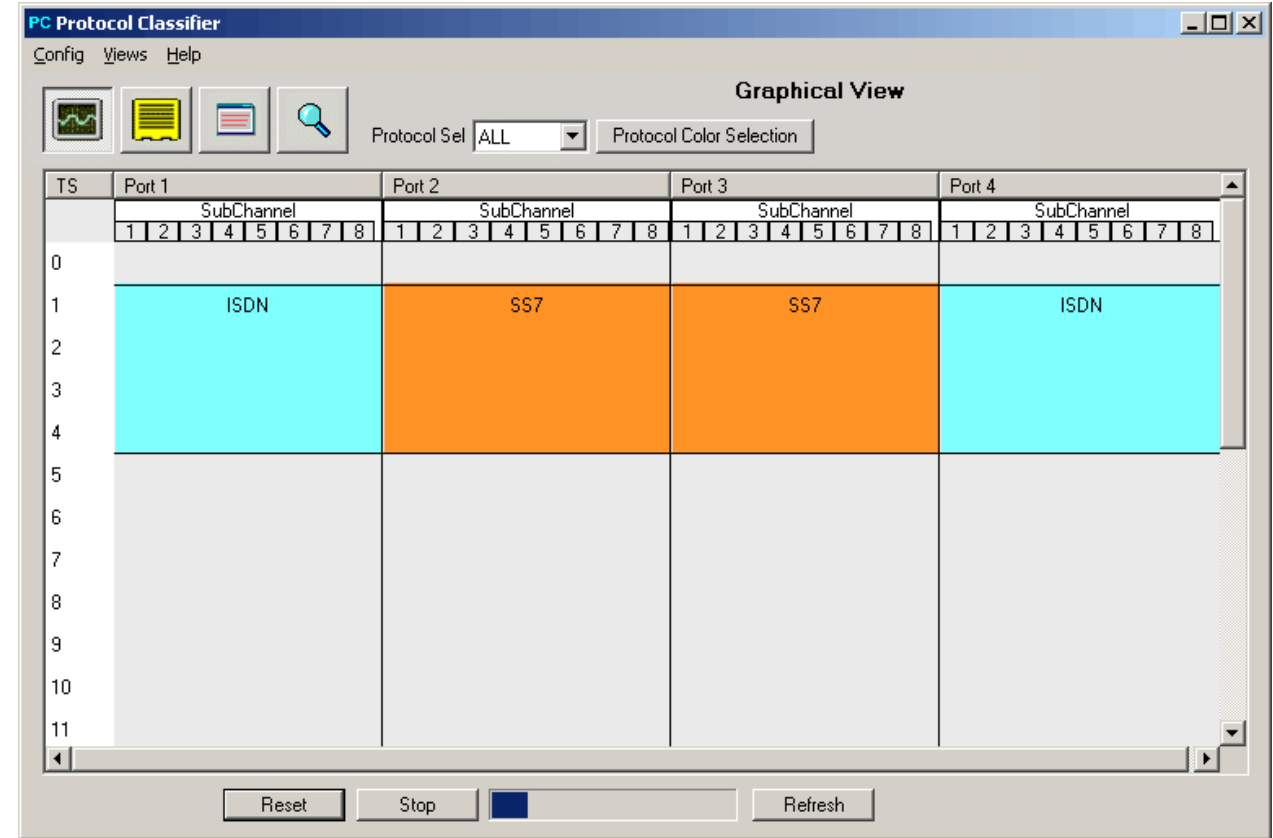
- This displays the scanning of the selected configurations for every 5sec, 10sec, 20sec, or more as specified in the **Scan Time**.

The screenshot shows the 'PC Protocol Classifier' window in 'Stream Scan View' mode. The 'Scan Time' is set to 10 seconds. A 'Parallel Detection' dialog box is open, showing 'HDLC Thread Count' set to 5 and 'Ideal Number of Threads for this system :1 - 10'. The main table lists various stream configurations and their detection times.

Stream Identity	Configuration Info	Time
Multiple Hyper-Channels\Nx56kbps (bits1-7)\11x56(Bits 1-7)Kbp...	HDLC on HyperChann	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChann	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChann	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\11x56(Bits 1-7)Kbp...	HDLC on HyperChann	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\11x56(Bits 1-7)Kbp...	HDLC on HyperChann	
Uplink-Downlink.ACF	TRAU on-->Uplink_Downlink	12:38:14.841000
0-23 TS N64K.ACF	ATM on HyperChannel-->0-23 TS N64K-CRC16	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChannel->672 kbps 10-21 TS with ...	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChannel->672 kbps 3-14 TS with a...	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChannel->672 kbps 4-15 TS with a...	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChannel->672 kbps 2-13 TS with a...	
Multiple Hyper-Channels\Nx56kbps (bits1-7)\12x56(Bits 1-7)Kbp...	HDLC on HyperChannel->672 kbps 11-22 TS with ...	
Uplink-Uplink.ACF	TRAU on-->Uplink_Uplink	

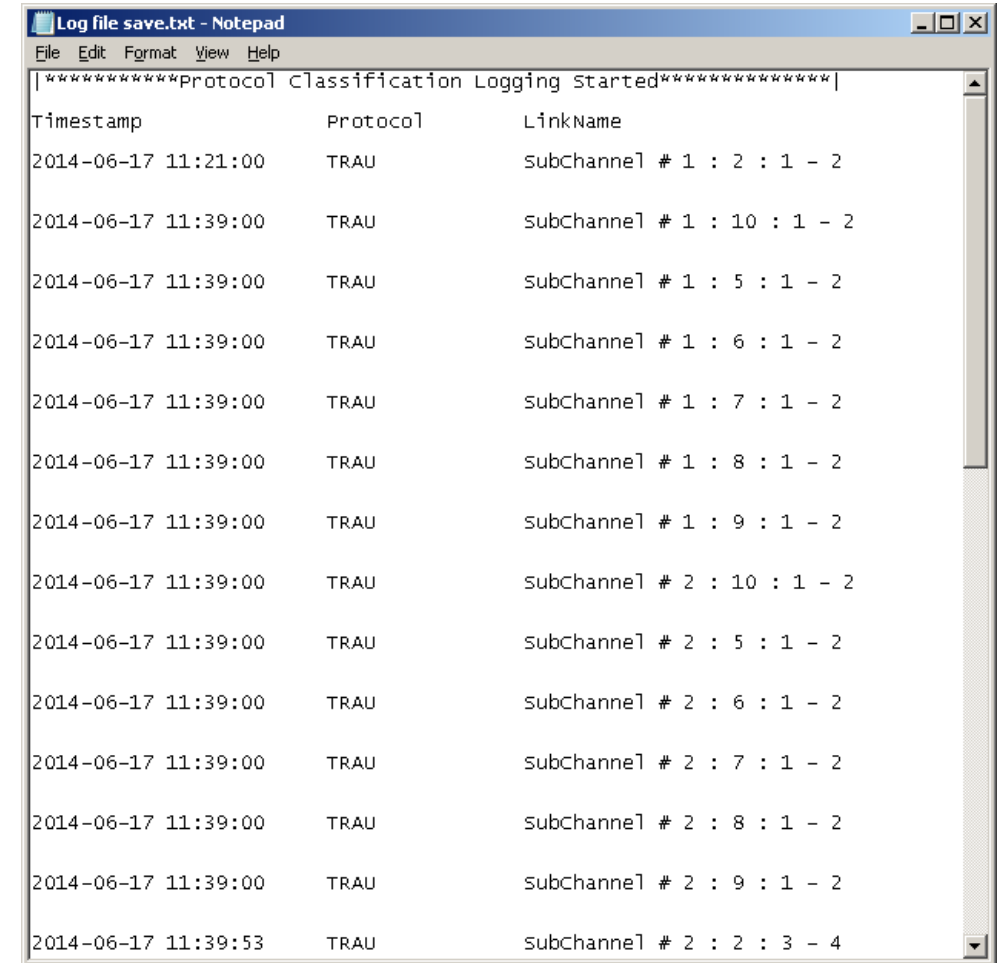
Multiple Ports and Timeslots

- Protocols Identifier can identify protocols on multiple ports and timeslots, which requires respective GL's protocol analyzers configuration file.



Log Statistics

- The details of the protocols identified, time, timeslots, subchannels, hyper-channels, and device name can be logged into a text file in the desired location for further analysis.



```
Log file save.txt - Notepad
File Edit Format View Help
|*****Protocol Classification Logging Started*****|
Timestamp          Protocol          LinkName
2014-06-17 11:21:00 TRAU             SubChannel # 1 : 2 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 10 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 5 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 6 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 7 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 8 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 1 : 9 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 10 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 5 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 6 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 7 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 8 : 1 - 2
2014-06-17 11:39:00 TRAU             SubChannel # 2 : 9 : 1 - 2
2014-06-17 11:39:53 TRAU             SubChannel # 2 : 2 : 3 - 4
```

Thank you