The Link Layer Discovery Protocol Specifications and Settings of UT Phones

(KX-UT series)

September 3 , 2012

Ver.1.0

Panasonic Corporation

Abstract about this document

This document describes about the specifications and settings of the Link Layer Discovery Protocol of UT phones.

Revision history

Date	Version	Revision	Firmware version
Sep. 3, 2012	Ver. 1.0	Initial Release	UT1/2 : 01.160~ UT670 : 01.070~

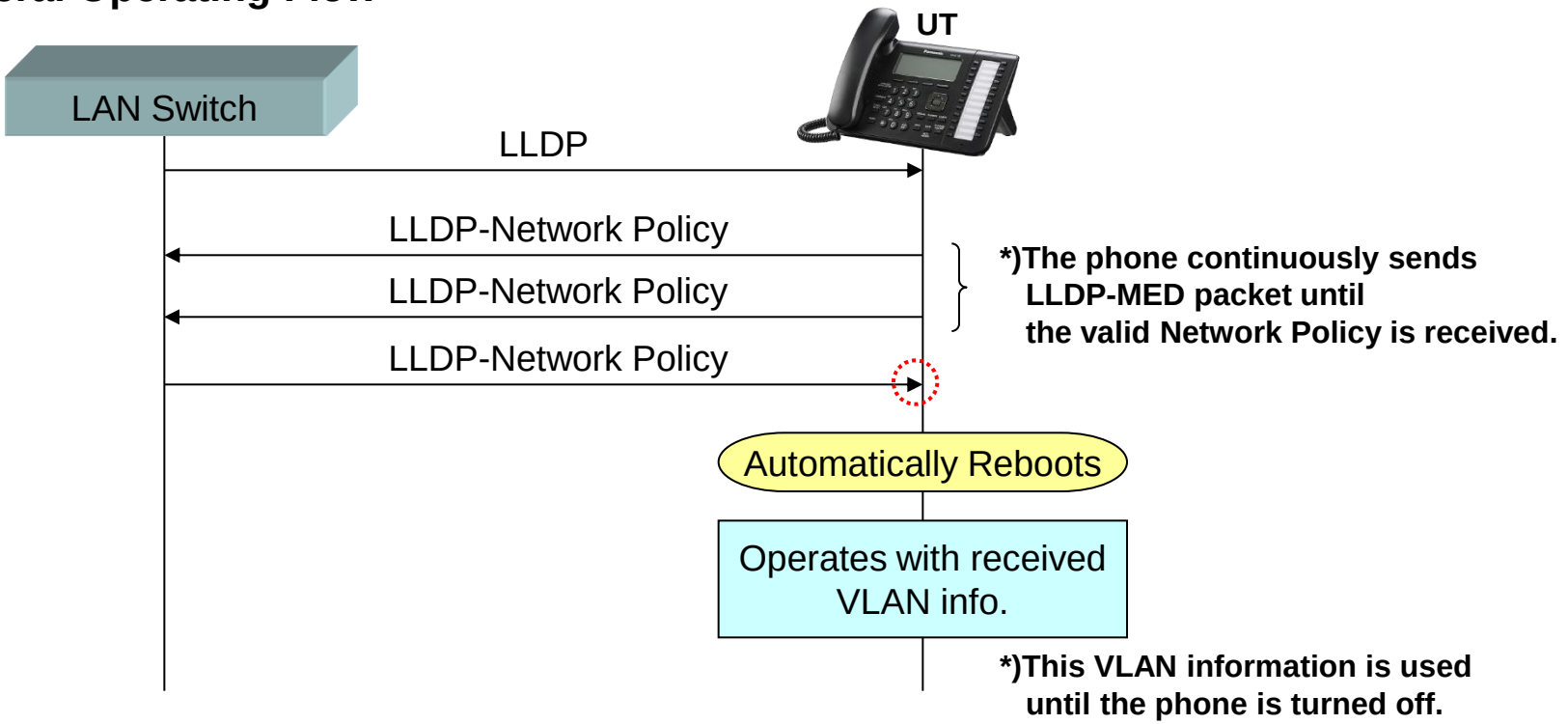
1. Overview

1-1. Overview

The UT113/123/133/136/248/670 supports the Link Layer Discovery Protocol for Media Endpoint Devices (LLDP-MED) which enables the VLAN settings of the phone automatically.

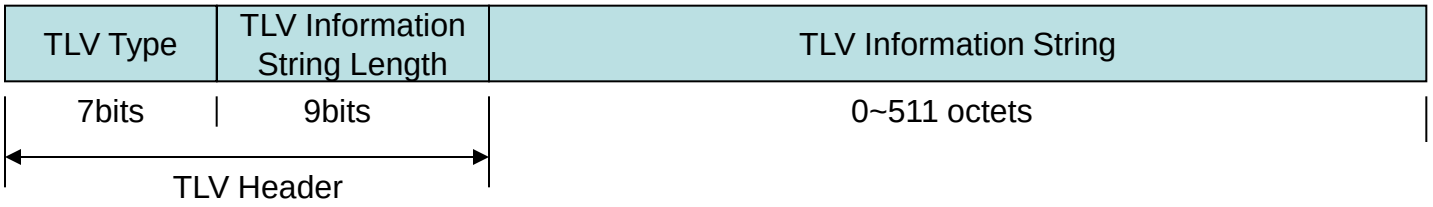
The LLDP protocol is defined by the following Standards.
- IEEE 802.1AB - 2005 (LLDP)
- ANSI/TIA-1057- 2006 (LLDP-MED)

1-2. General Operating Flow



2-1. Supported Type Length Values (TLV)

■ TLV Format



■ Basic

#	Name	Type	Length	OUI	Subtype	Information
1	Chassis ID	1	6	-	5	Network Address (Initial : 0:0:0:0)
2	Port ID	2	7	-	3	MAC Address
3	Time-to-live	3	2	-	-	120
4	Port description	4	8	-	-	LAN PORT
5	System name	5	9	-	-	Model e.g.) KX-UT136
6	System description	6	19	-	-	Panasonic SIP Phone
7	System capabilities	7	4	-	-	0x0024, 0x0024

■ IEEE802.3(LAN)

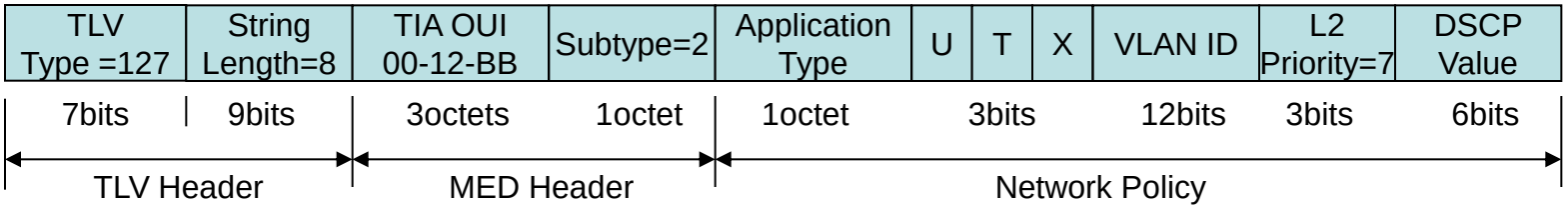
#	Name	Type	Length	OUI	Subtype	Information
8	IEEE 802.3 MAC/PHY config/status	127	6	0x00120f	1	

2-2. Supported Type Length Values (TLV)

■ LLDP-MED

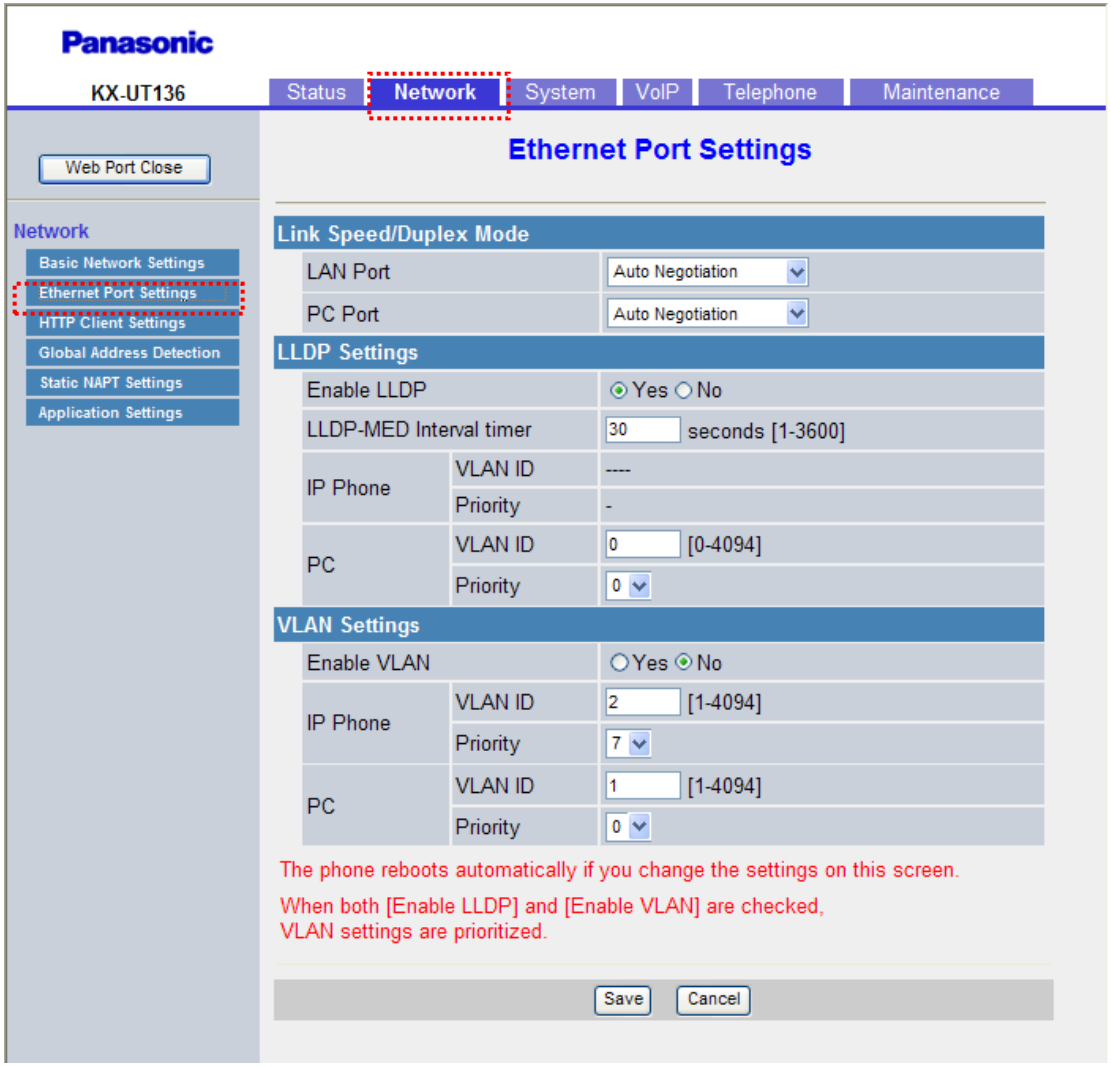
#	Name	Type	Length	OUI	Subtype	Information
9	LLDP-MED Capabilities	127	7	0x0012bb	1	Endpoint Class III
10	Network Policy	127	8	0x0012bb	2	Voice Policy (VLAN, DSCP)
11	Inventory - Hardware Revision	127	n	0x0012bb	5	Model e.g.) KX-UT136
12	Inventory - Firmware Revision	127	10	0x0012bb	6	e.g.) 01.160
13	Inventory - Software Revision	127	10	0x0012bb	7	e.g.) 01.160
14	Inventory - Serial Number	127	16	0x0012bb	8	MAC address
15	Inventory - Manufacturer Name	127	29	0x0012bb	9	Panasonic System Networks
16	Inventory - Model Name	127	n	0x0012bb	10	Model e.g.) KX-UT136
17	End of LLDP DU	0	0	-	-	-

■ Network Policy TLV Format



3-1-1. Settings of the LLDP(WEB)

■[Network] tab -> Ethernet Port Settings



3-1-2. Settings of the LLDP(WEB)

■LLDP Settings and related Settings

Settings Parameter	Value	Descriptio4n
Enable LLDP	Value Format: Boolean Value Range: Yes(Enable) No(Disable) Default Value: Yes	Selects whether to enable or disable sending and receiving LLDP frames. **Note:** **・You should only set either of “LLDP” or “VLAN” to “Yes”.** **・When “Yes” is set to both of the above-mentioned parameters, only the settings for VLAN are used. Settings Priority: “VLAN” > “LLDP”**
LLDP-MED Interval timer	Value Format: Integer Value Range: 0-3600 Default Value: 30	Specifies the interval, in seconds, between sending each LLDP frame.
PC (VLAN ID)	Value Format: Integer Value Range: 0-4094 Default Value: 0	Specifies the VLAN ID for the PC port when LLDP is on. **Note:** **・The VLAN of the PC port cannot be set by LLDP, therefore, you must set this parameter if PC port is used.**
PC (Priority)	Value Format: Integer Value Range: 0-7 Default Value: 0	Specifies the VLAN Priority for the PC port when LLDP is on. **Note:** **・The VLAN of the PC port cannot be set by LLDP, therefore, you must set this parameter if PC port is used.**
Enable VLAN	Value Format: Boolean Value Range: Yes(Enable) No(Disable) Default Value: No	Specifies whether to use the VLAN feature to perform VoIP communication securely. It must be set to “No” when you would like to use the LLDP.

3-2-1. Settings of the LLDP(Provisioning)

■Configuration parameters relating to the LLDP

Configuration Parameter	Value	Description
LLDP_ENABLE	Value Format: Boolean Value Range: Y(Enable)/ N(Disable) Default Value: Y	Selects whether to enable or disable sending and receiving LLDP frames. **Note:** **・This setting is available only when "NW_SETTING_ENABLE" is set to "N".** **・You can only set either of "LLDP_ENABLE" or "VLAN_ENABLE" to "Y".** **When "Y" is set to both of the above-mentioned parameters, only "VLAN_ENABLE" settings (higher priority) are used.**
LLDP_INTERVAL	Value Format: Integer Value Range: 0-3600 Default Value: 30	Specifies the interval, in seconds, between sending each LLDP frame.
LLDP_VLAN_ID_PC	Value Format: Integer Value Range: 0-4094 Default Value: 0	Specifies the VLAN ID for the PC port when LLDP is on. **Note:** **・The VLAN of the PC port cannot be set by LLDP, therefore, you must set this parameter if PC port is used.**
LLDP_VLAN_PRI_PC	Value Format: Integer Value Range: 0-7 Default Value: 0	Specifies the VLAN Priority for the PC port when LLDP is on. **Note:** **・The VLAN of the PC port cannot be set by LLDP, therefore, you must set this parameter if PC port is used.**
NW_SETTING_ENABLE	Value Format: Boolean Value Range: Y(Enable)/ N(Disable) Default Value: Y	Specifies whether to enable the network settings from the unit. It must be set to "N" when you would like to set such these parameter by provisioning. **Note:** **・If you change this setting to "N" when the network settings have been made through Web UI, you must clear these settings once by performing Reset Web Settings from the Web UI.**
VLAN_ENABLE	Value Format: Boolean Value Range: Y(Enable)/ N(Disable) Default Value: N	Specifies whether to use the VLAN feature to perform VoIP communication securely. It must be set to "N" when you would like to use the LLDP.

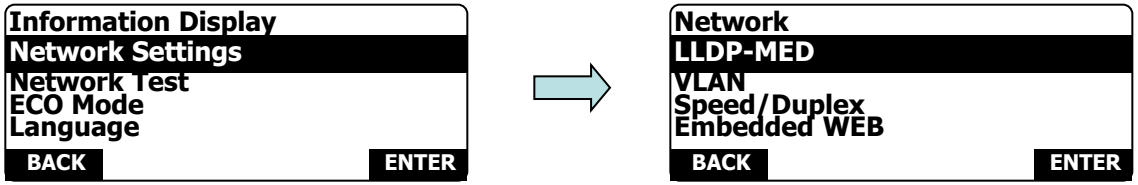
3-2-2. Settings of the LLDP(Provisioning)

■Configuration Example to validate LLDP

```
# Panasonic SIP Phone Standard Format File # DO NOT CHANGE THIS LINE!

## Miscellaneous Network Settings
NW_SETTING_ENABLE= "N"

## LLDP-MED Settings
LLDP_ENABLE="Y"
LLDP_INTERVAL="30"
LLDP_VLAN_ID_PC="123"
LLDP_VLAN_PRI_PC="0"

## Ethernet Port Settings
VLAN_ENABLE="N"
VLAN_ID_IP_PHONE="2"
VLAN_PRI_IP_PHONE="7"
VLAN_ID_PC="123"
VLAN_PRI_PC="0"
[EOF]
```

3-3-1. Settings of the LLDP(Phone Menu:UT1/248)

■[Settings]->[Network Settings]



Setting			Description	Value Range	Default
LLDP-MED			Configure the LLDP-MED settings.	-	-
	On/Off		Enable or disable the “LLDP-MED” settings.	On (Enable) Off (Disable)	On
	Timer		Specify the LLDP Interval timer.	1-3600 seconds	30
	PC port (except for KX-UT113)		Specify the necessary settings for using a PC over a VLAN.	-	-
		VLAN ID	Specify the VLAN ID.	0-4094	0
		Priority	Specify the priority of PC packets sent from this unit.	0-7	0
VLAN			Configure the VLAN settings.	-	-
	On/Off		Select whether to enable the VLAN functionality.	Yes (Enable) No (Disable)	No

Note

- **When both LLDP and VLAN settings are enabled, VLAN settings are prioritized.**

3-3-2. Settings of the LLDP(Phone Menu:UT670)

■ Ethernet port Settings

The following procedures explain how to change the Ethernet port connection mode (link speed/duplex mode) and VLAN (Virtual Local Area Network) / LLDP (Link Layer Discovery Protocol) settings via the unit.

1. Press Menu on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Ethernet port settings]**.
4. Select the connection mode for **[LAN port]** and **[PC port]**.
5. Check **[Use LLDP]**.
6. Enter the LLDP-MED Timer.
7. Enter the VLAN ID(PC).
8. Enter the Priority (PC).
9. Tap **[Save and Reboot]**.

Note

- **When both [Use LLDP] and [Use VLAN] are checked, VLAN settings are prioritized.**