

ODT Manual

SEPTEMBER 7, 2014

LG Electronics Inc.

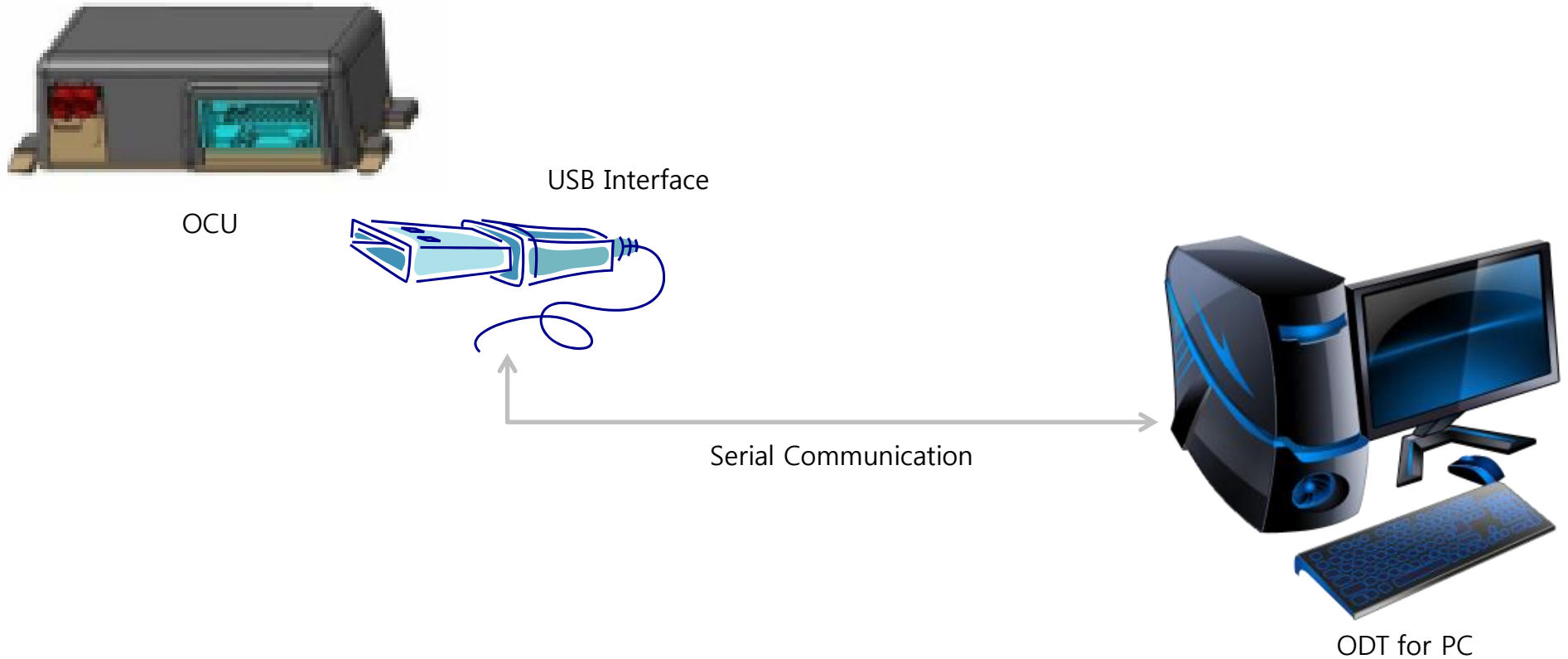


Contents

- I. What is ODT?
- II. Environment for ODT
- III. Function List
- IV. Function in detail

1. What is ODT?

ODT(OCU Development Tool) is development tool for debugging, testing and analyzing for OCU



2. Environment for ODT

OS: Windows 7 or later (We not support Windows XP)

Development Tool: Visual Studio 2010

3. Function List

Window	Major Functionalities
Main	GNSS Information, Network Information, Filtering Logs, Power Status, Virtual Button, Telltale, QXDM Logging, GNSS Maker
GNSS	GNSS Information
Call	Call Control, Auto Answer, RF Information
Data	APN, QoS Setup
SIM	SIM information, Virtual SIM
SMS	Send SMS message, Receive SMS message.
Audio	Play Prompt, Start/Stop Loopback
Log	System Logs, Service Logs, Debug Messages
DTC	Display DTC's Status
Configuration	Set and Get OCU's Configuration
Update	SW upgrade of NAD, GNSS and Micom
KML Convertor	Generate KML file

4. Function - Main

HW Rev:E SW Rev:M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05

File(F) View(V) Update(U) Help(H)

GNSS Information

Timestamp

2014-09-07 03:14:19

Latitude:

37.4852154

Longitude:

127.0367674

Altitude:

101

C/No

22

Satellite

22

Network Information

Signal Quality

125

Channel

0

Current PLMN

None

Call Status

Idle

Roaming

Searching

2G / 3G

No Service

Manual Interface

eCall

Crash Signal

Power State

ENGINE START STOP

QXDM Logging

☐ Enable

Marker Start

Power Supply Mode

Normal Mode

Set

Button Press

OCU Service Log

Filter: ALL Clear Pause

Time	Module	Message Text
11:54:45	General	[02:54:45.219] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.245] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.245] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.247] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.248] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.253] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.253] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.253] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.253] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)
11:54:45	General	[02:54:45.257] ocu version: M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05 (odt_tool.c line:141)

Be First, Do it Right, Work Smart!

5 / 60

LGE Confidential

4. Function - GNSS

View > GNSS > GNSS Information : You can see information of GNSS and DR in detail using this function.

GNSS

GPS Info. (PERIODIC)

Timestamp	2014-9-7 3:17:31	Heading	7987832 (10^5)degree
Latitude	37.485249 degree	Current HDOP	63
Longitude	127.0367471 degree	Current PDOP	115
Altitude	109 meter	Current VDOP	97
Speed	63 mm/s	HRE Reported to OBN	
Vel E	-58 mm/s	SV Count	23/26
Vel N	24 mm/s	C/No	28 dBHz
Vel U	-58 mm/s	PRNDL	
TTFF	174 sec	Foreware/Reverse State	
Max C/No	37 dBHz	Fix Type	3D Fix

DR Info.

Direction	Forward
Wheeltick	0 tick
Gyro	4096 deg/s

GPS Command

Hot Start

174 s

Initiate

GPS Mode

GPS Only

Set

Message Rate

1 Hz

Set

DR Mode

GNSS

Set

GNSS Mode

External GNSS

Set

Get

4. Function - Network

View > Network > Call : You can see the network information and call using this function.

Call

Network Information

Attach State	Searching	Current System	No Service
Current ARFCN	65535	Current PLMN	FF-FF-FF
NMO	3	Cell ID	0
LAC/RAC	0/255	DRX	0
MM State/Cause	19-0	GMM State/Cause	1-0
SS State/SM Cause	4/0	RRC State	Disconnected
RSSI	125	TX Power	-100

System Control

Auto Answer

Get

Set

Reset

Call Control

Phone Number

Call

End

DTMF

Number (Only 0~9, *, #)

Send

4. Function - Network

View > Network > APN : You can get and set APN and QoS setup through this function.

APN

APN

IP

Get

Set

QoS Setup

Traffic Class		Get	Set
Maximum Bitrate[UL]			
Maximum Bitrate[DL]			

4. Function - Network

View > Network > SMS : You can send and receive the SMS message.

SMS

SMS

Phone Number	
Message	

Send

SMS Logs

4. Function - Network

View > Network > UICC : You can set and get all UICC's parameters.

UICC

Information

SIM Status		Get	IMEI		Get
MSISDN		Get	IMSI		Get

Virtual SIM's Status

	Get	Enable Only	Set
--	-----	-------------	-----

SMSC(Service Center Address)

Number		Get	Set
--------	--	-----	-----

User Controlled PLMN Selector with ATC

MCC	MNC	ACT	☒ UMTS	MCC	
			☐ GSM	MNC	

Add

Delete

Get

Set

HPLMN Selector with ACT

MCC	MNC	ACT	

Get

Forbidden PLMN

MCC	MNC	

Get

Operator Controlled PLMN Selector with ACT

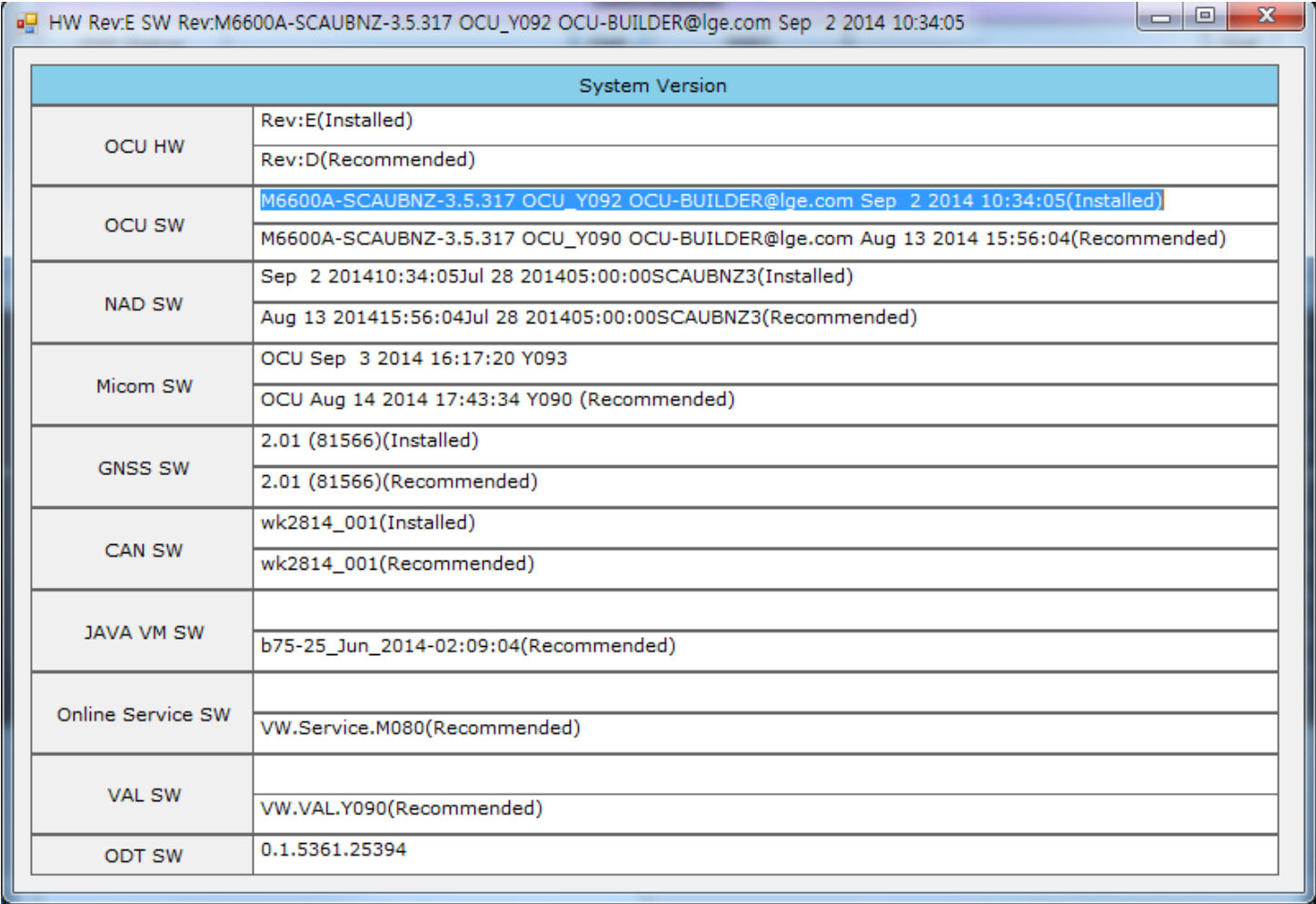
MCC	MNC	ACT	

Get

Etc. Information

4. Function – System Information

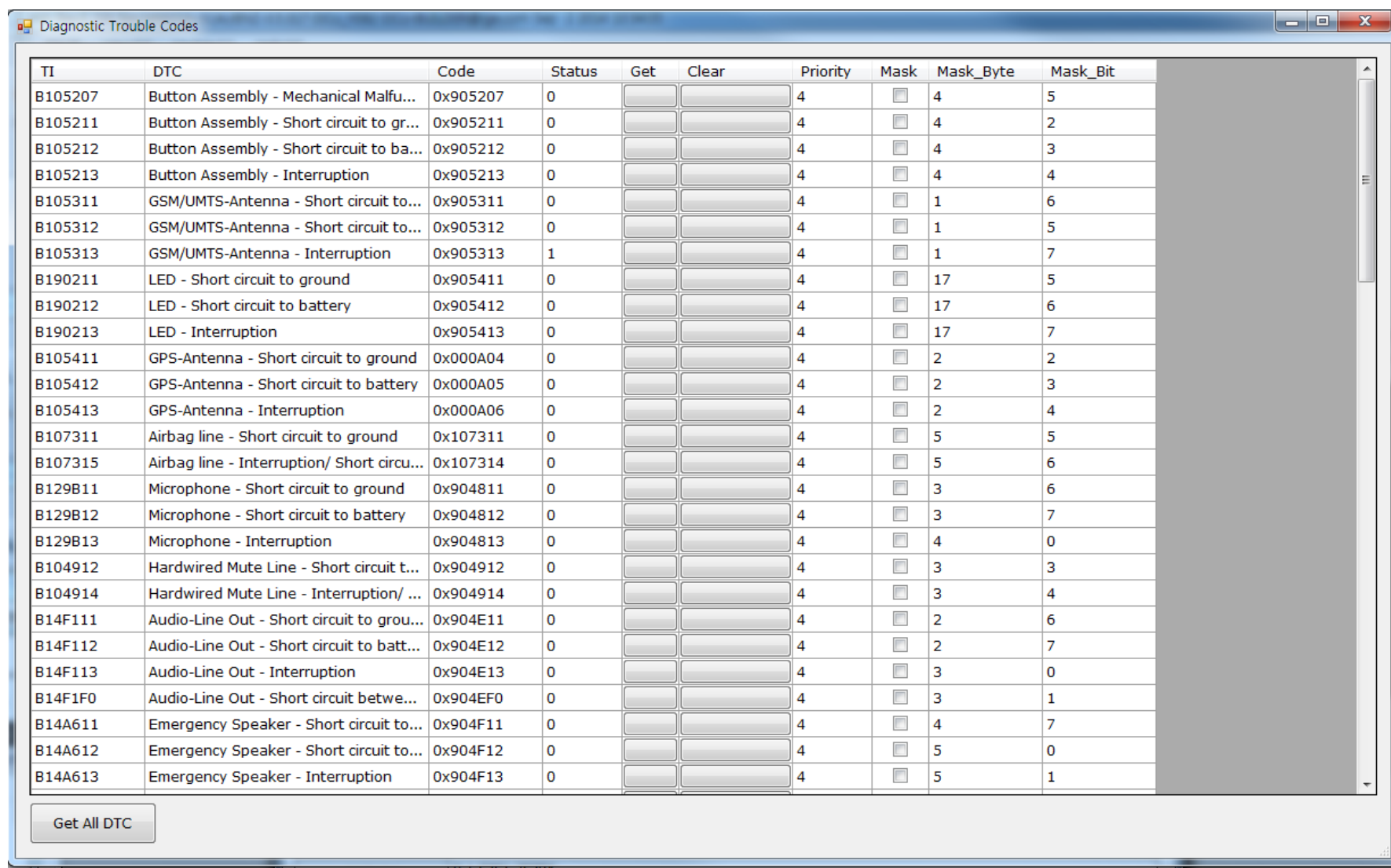
View > System Information : You can see and check all version of OCU's module.



System Version	
OCU HW	Rev:E(Installed)
	Rev:D(Recommended)
OCU SW	M6600A-SCAUBNZ-3.5.317 OCU_Y092 OCU-BUILDER@lge.com Sep 2 2014 10:34:05(Installed)
	M6600A-SCAUBNZ-3.5.317 OCU_Y090 OCU-BUILDER@lge.com Aug 13 2014 15:56:04(Recommended)
NAD SW	Sep 2 201410:34:05Jul 28 201405:00:00SCAUBNZ3(Installed)
	Aug 13 201415:56:04Jul 28 201405:00:00SCAUBNZ3(Recommended)
Micom SW	OCU Sep 3 2014 16:17:20 Y093
	OCU Aug 14 2014 17:43:34 Y090 (Recommended)
GNSS SW	2.01 (81566)(Installed)
	2.01 (81566)(Recommended)
CAN SW	wk2814_001(Installed)
	wk2814_001(Recommended)
JAVA VM SW	
	b75-25_Jun_2014-02:09:04(Recommended)
Online Service SW	
	VW.Service.M080(Recommended)
VAL SW	
	VW.VAL.Y090(Recommended)
ODT SW	0.1.5361.25394

4. Function – DTC

View > DTC : You can get, clear and mask DTC(Diagnostic Trouble Codes) of OCU.

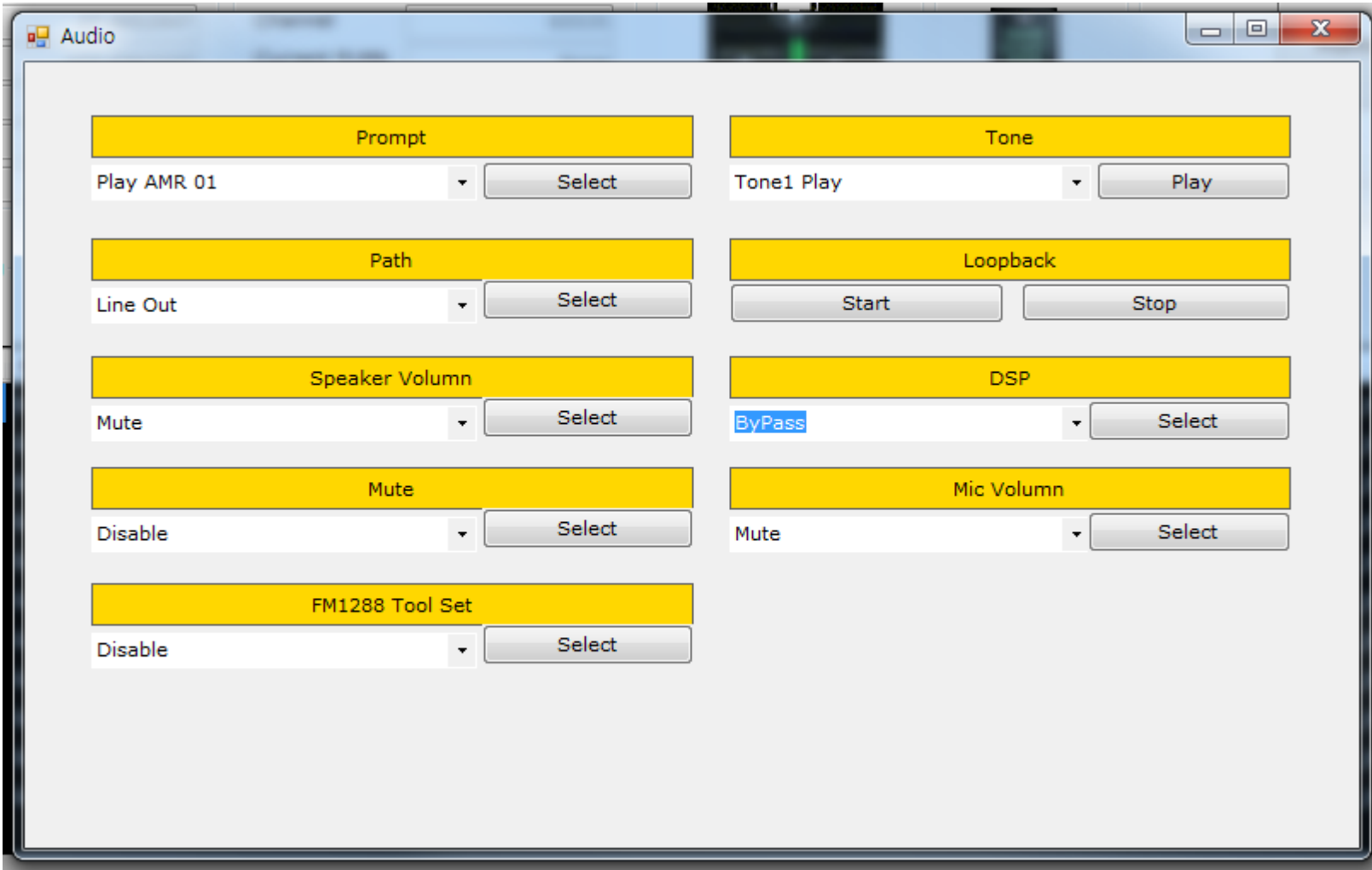


TI	DTC	Code	Status	Get	Clear	Priority	Mask	Mask_Byte	Mask_Bit
B105207	Button Assembly - Mechanical Malfu...	0x905207	0	☐	☐	4	☐	4	5
B105211	Button Assembly - Short circuit to gr...	0x905211	0	☐	☐	4	☐	4	2
B105212	Button Assembly - Short circuit to ba...	0x905212	0	☐	☐	4	☐	4	3
B105213	Button Assembly - Interruption	0x905213	0	☐	☐	4	☐	4	4
B105311	GSM/UMTS-Antenna - Short circuit to...	0x905311	0	☐	☐	4	☐	1	6
B105312	GSM/UMTS-Antenna - Short circuit to...	0x905312	0	☐	☐	4	☐	1	5
B105313	GSM/UMTS-Antenna - Interruption	0x905313	1	☐	☐	4	☐	1	7
B190211	LED - Short circuit to ground	0x905411	0	☐	☐	4	☐	17	5
B190212	LED - Short circuit to battery	0x905412	0	☐	☐	4	☐	17	6
B190213	LED - Interruption	0x905413	0	☐	☐	4	☐	17	7
B105411	GPS-Antenna - Short circuit to ground	0x000A04	0	☐	☐	4	☐	2	2
B105412	GPS-Antenna - Short circuit to battery	0x000A05	0	☐	☐	4	☐	2	3
B105413	GPS-Antenna - Interruption	0x000A06	0	☐	☐	4	☐	2	4
B107311	Airbag line - Short circuit to ground	0x107311	0	☐	☐	4	☐	5	5
B107315	Airbag line - Interruption/ Short circu...	0x107314	0	☐	☐	4	☐	5	6
B129B11	Microphone - Short circuit to ground	0x904811	0	☐	☐	4	☐	3	6
B129B12	Microphone - Short circuit to battery	0x904812	0	☐	☐	4	☐	3	7
B129B13	Microphone - Interruption	0x904813	0	☐	☐	4	☐	4	0
B104912	Hardwired Mute Line - Short circuit t...	0x904912	0	☐	☐	4	☐	3	3
B104914	Hardwired Mute Line - Interruption/ ...	0x904914	0	☐	☐	4	☐	3	4
B14F111	Audio-Line Out - Short circuit to grou...	0x904E11	0	☐	☐	4	☐	2	6
B14F112	Audio-Line Out - Short circuit to batt...	0x904E12	0	☐	☐	4	☐	2	7
B14F113	Audio-Line Out - Interruption	0x904E13	0	☐	☐	4	☐	3	0
B14F1F0	Audio-Line Out - Short circuit betwe...	0x904EF0	0	☐	☐	4	☐	3	1
B14A611	Emergency Speaker - Short circuit to...	0x904F11	0	☐	☐	4	☐	4	7
B14A612	Emergency Speaker - Short circuit to...	0x904F12	0	☐	☐	4	☐	5	0
B14A613	Emergency Speaker - Interruption	0x904F13	0	☐	☐	4	☐	5	1

Get All DTC

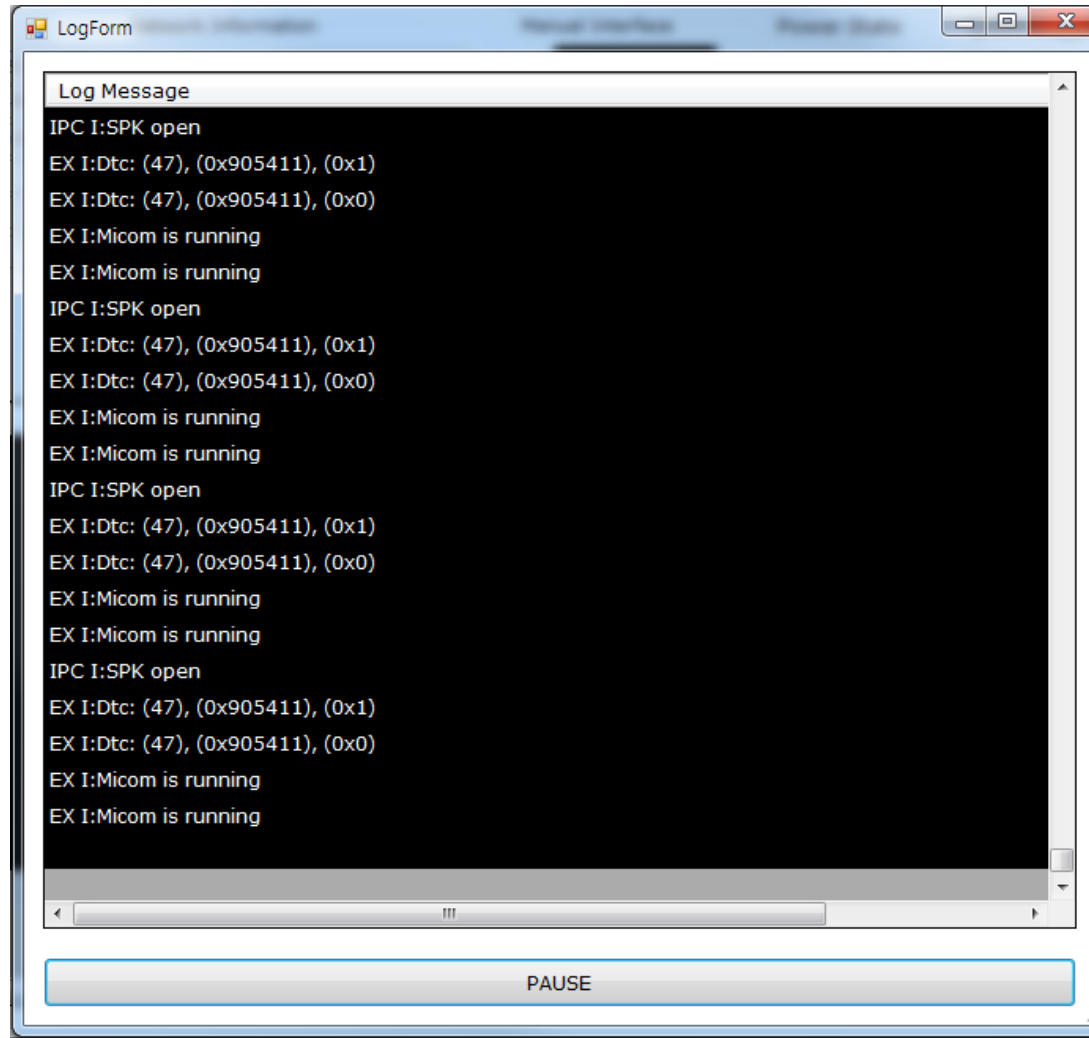
4. Function – Audio

View > Audio : You can control the audio features of OCU using this function



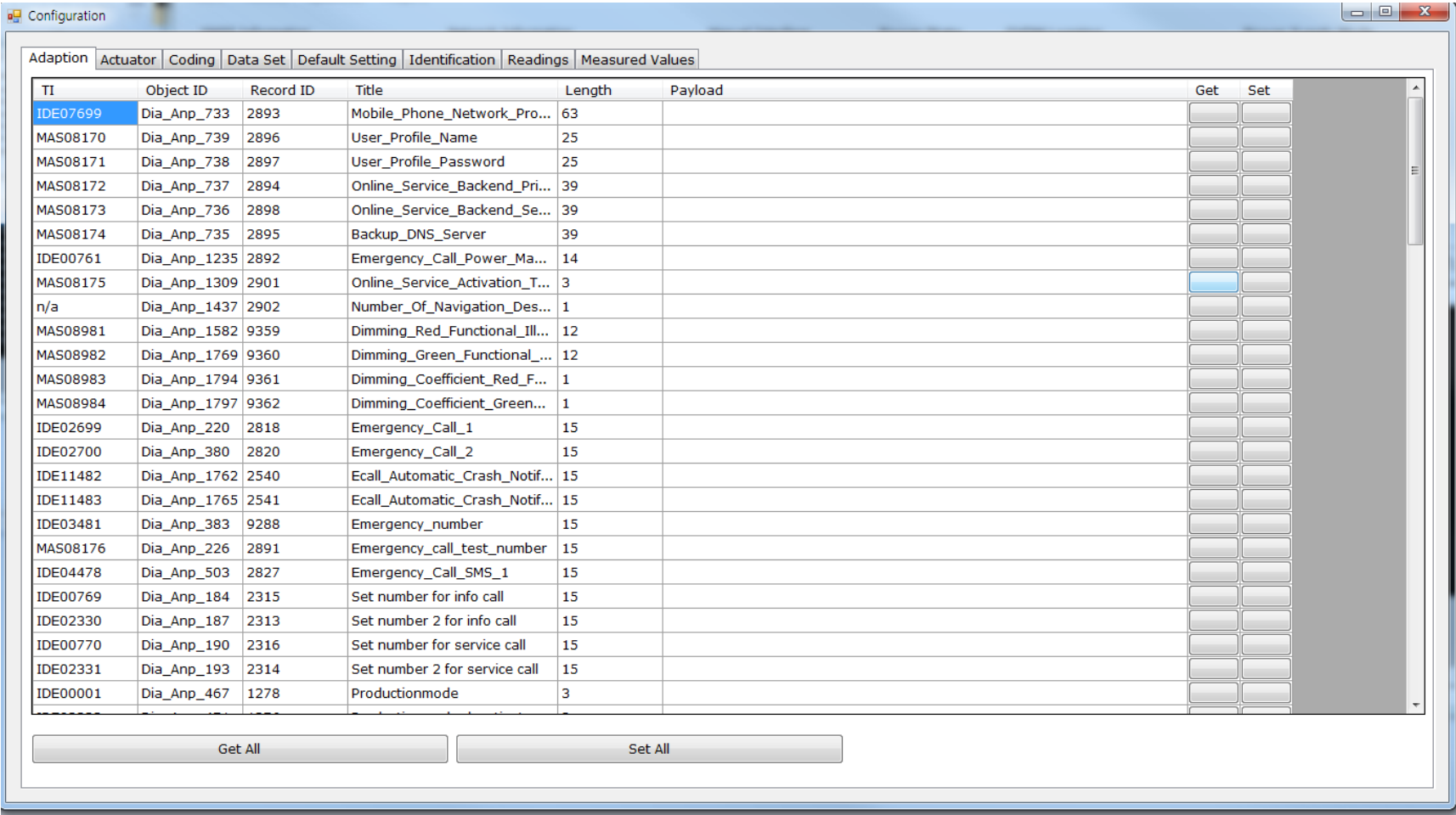
4. Function – Logs

View > Logs : You can see all logs of OCU



4. Function – Configuration

View > Configuration > Configuration : You can set and get the configuration of OCU.



TI	Object ID	Record ID	Title	Length	Payload	Get	Set
IDE07699	Dia_An_p_733	2893	Mobile_Phone_Network_Pro...	63		Get	Set
MAS08170	Dia_An_p_739	2896	User_Profile_Name	25		Get	Set
MAS08171	Dia_An_p_738	2897	User_Profile_Password	25		Get	Set
MAS08172	Dia_An_p_737	2894	Online_Service_Backend_Pri...	39		Get	Set
MAS08173	Dia_An_p_736	2898	Online_Service_Backend_Se...	39		Get	Set
MAS08174	Dia_An_p_735	2895	Backup_DNS_Server	39		Get	Set
IDE00761	Dia_An_p_1235	2892	Emergency_Call_Power_Ma...	14		Get	Set
MAS08175	Dia_An_p_1309	2901	Online_Service_Activation_T...	3		Get	Set
n/a	Dia_An_p_1437	2902	Number_Of_Navigation_Des...	1		Get	Set
MAS08981	Dia_An_p_1582	9359	Dimming_Red_Functional_Ill...	12		Get	Set
MAS08982	Dia_An_p_1769	9360	Dimming_Green_Functional_...	12		Get	Set
MAS08983	Dia_An_p_1794	9361	Dimming_Coefficient_Red_F...	1		Get	Set
MAS08984	Dia_An_p_1797	9362	Dimming_Coefficient_Green...	1		Get	Set
IDE02699	Dia_An_p_220	2818	Emergency_Call_1	15		Get	Set
IDE02700	Dia_An_p_380	2820	Emergency_Call_2	15		Get	Set
IDE11482	Dia_An_p_1762	2540	Ecall_Automatic_Crash_Notif...	15		Get	Set
IDE11483	Dia_An_p_1765	2541	Ecall_Automatic_Crash_Notif...	15		Get	Set
IDE03481	Dia_An_p_383	9288	Emergency_number	15		Get	Set
MAS08176	Dia_An_p_226	2891	Emergency_call_test_number	15		Get	Set
IDE04478	Dia_An_p_503	2827	Emergency_Call_SMS_1	15		Get	Set
IDE00769	Dia_An_p_184	2315	Set number for info call	15		Get	Set
IDE02330	Dia_An_p_187	2313	Set number 2 for info call	15		Get	Set
IDE00770	Dia_An_p_190	2316	Set number for service call	15		Get	Set
IDE02331	Dia_An_p_193	2314	Set number 2 for service call	15		Get	Set
IDE00001	Dia_An_p_467	1278	Productionmode	3		Get	Set

4. Function – BUB (Backup Battery)

View > BUB : You can get the BUB(Backup Battery)'s status.

The screenshot shows a software window titled "BUBForm". Inside, there is a table of parameters for the Backup Battery (BUB). The parameters include OCV, CCV, Temp, RI, BUB status, Charging status, Charging State, and Switching State. Each parameter has a corresponding "Get" or "Set" button. Below the table, there are two status indicators: "Battery Open Status" (Abnormal) and "Battery too High Ri" (Normal).

BUB		
OCV		Get
CCV		Get
Temp		Get
RI		Get
BUB	Enable	Set
Charing	On	Set
Charging State		Get
Switching State		Get

Battery Open Status	Abnormal
Battery too High Ri	Normal

4. Function – HW IO

View > HW IO : You can control the LED of OCU and get the Microphone's current.

The screenshot shows a software window titled "HWIOForm". It contains two main sections: "LED Control" and "Microphone".

LED Control Section:

Color	Red
On/Off	Off
Duty Rate (0~100)	30
Frequency (30~20000)	0

A "Set" button is located to the right of these fields.

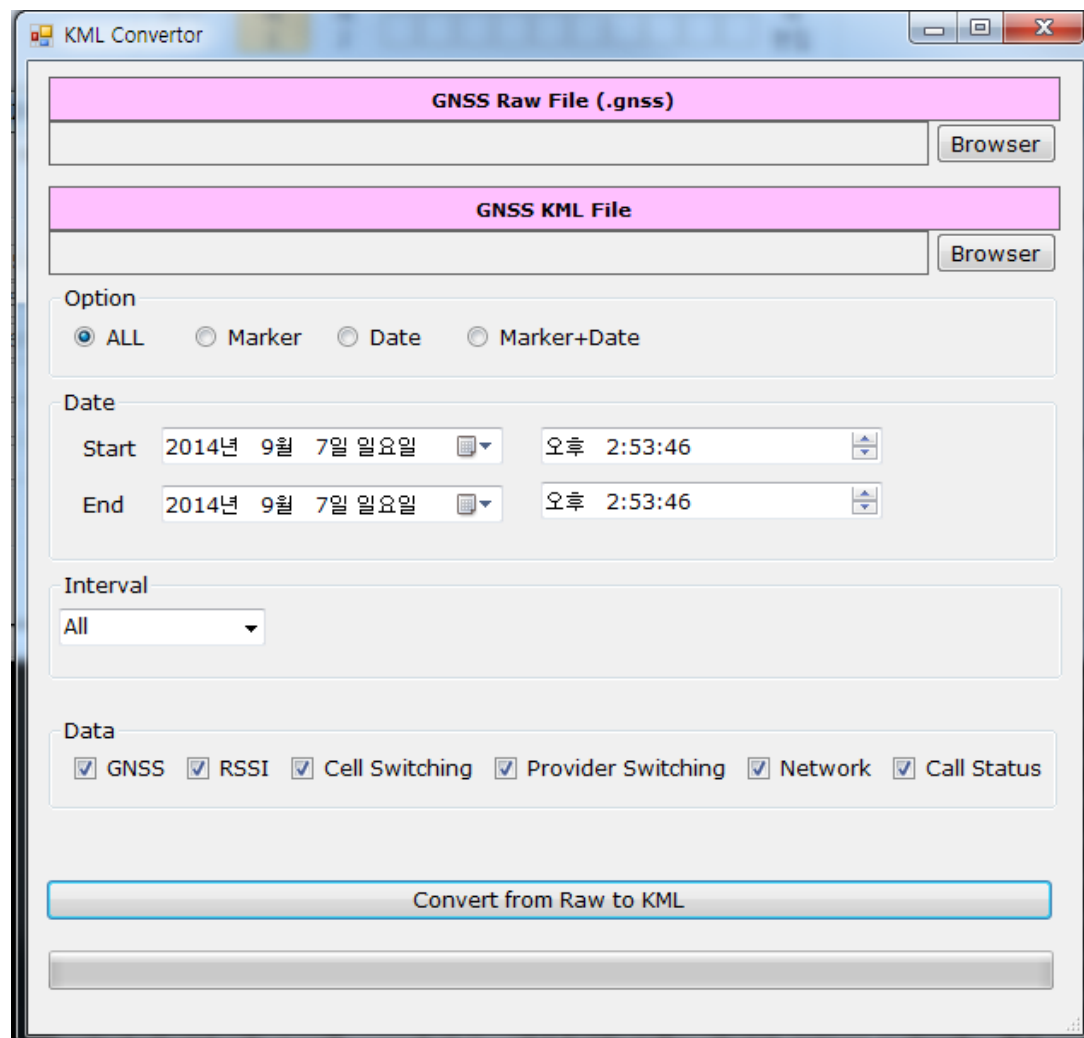
Microphone Section:

Current	
---------	--

A "Get" button is located to the right of the "Current" field.

4. Function – KML Convertor

View > KML Convertor : You can convert from the raw data of GNSS and Network to KML file to test and debug on Google Earth



4. Function – Update

View > KML Convertor : You can update NAD, Micom and GNSS of OUC using this function.

Update

NAD

Partition		Browser
AMSS		Browser
OSBL		Browser
CEFS		Browser
NV Backup File		Browser

☒ Auto Backup/Restore ☐ Use NV Backup File

Update

GNSS

SW		Browser
----	--	---------

Update

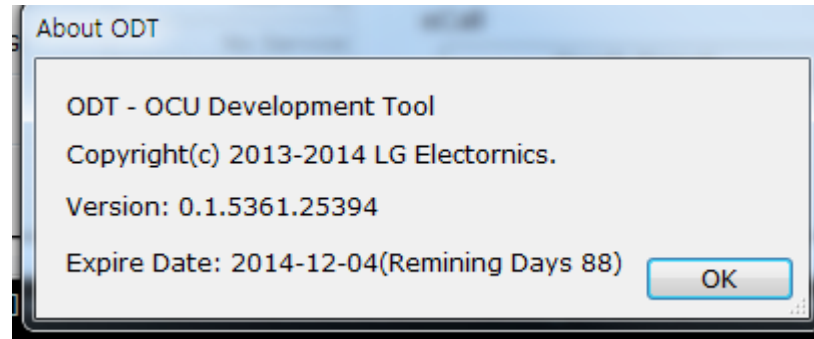
MICOM

SW		Browser
----	--	---------

Update

4. Function – Help

View > Help > About ODT : You can know the version and expire date of ODT through this function



Part 15.21 statement

"Change or Modifications that are not expressly approved by the manufacturer could void the user's authority to operate the equipment. "

"In order to comply with RF Exposure requirements the antenna or radiating element of this device must be installed to ensure that it is at least 20cm from end users. The antenna supplied with this device must not exceed a maximum gain of -7dBi in the cellular band and -7dBi in the PCS band."

Part 15.105 statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna. -Increase the separation between the equipment and receiver. -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Part 15 Class B Compliance

This device and its accessories comply with part 15 of FCC rules. Operation is subject to the following two conditions:

(1) This device & its accessories may not cause harmful interference.

(2) This device & its accessories must accept any interference received, including interference that may cause undesired operation.

Installation

This unit should only be installed by qualified personnel by .

The transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 30 cm between the radiator and any part of your body.