



How to get actual YNC Command

Ver 1.1

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Revision History

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1	Preface	3
2	Function Tree	3
2.1	Find the Function Tree.....	3
2.2	General Appearance of the Function Tree	3
3	Command Generation	5
4	A list of commands	10
4.1	What is a list of commands?	10
4.2	The contents of a list of commands.....	11

1 Preface

In this document, the instructions of how to construct YNC commands are described in chapter 3 ; whereas, chapter 5 gives you the details of how to use the list of commands.

2 Function Tree

2.1 Find the Function Tree

You can find the Function Tree (with which you generate commands for AV devices) from the following MS Excel file.

Func tree for comp functions sheet of *devicename_Function_Tree.xls*

(*devicename* will be AV device name)

e.g.) V671_3071_FuncTree_1.10.xls

notice)When opening this file, please make sure that your computer's security settings will allow you to run macros.

2.2 General Appearance of the Function Tree

Look at the three sections circled in red in the below general appearance of the Function Tree.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

The section 1 shows the hierarchy of commands. The top of the tree is column B, the second layer is column C, third is column D and so on. The various layers can be viewed or hidden by clicking on the + or – boxes on the far left of the screen. By clicking on the + boxes on the left, you can view the lower layers of this hierarchy. The section 2 is used to automatically generate commands. The details will be elaborated in a later chapter.

These columns of section 3, starting from column L, define the exact rules for any particular command:

- I **YNC** – a '1' in this column means that a command is valid over YNC Protocol.
- I **Copy** – a 'C' means there is a node that has the same tree structure on the same layer.
an 'R' in this column means that it is the top node of the same tree structure.
a 'C' means that it is a copy of the tree structure denoted by 'R' on the same layer.
- I **# of states** – the total number of possible parameters of that particular command. The total number of possible parameters will be 2 if On and Off are selectable.
- I **R/W** – a 'W', "RW" or blank in the column R means that the parameter is valid in PUT commands. a 'R' means that the parameter is invalid in PUT commands and only used in GET commands.
- I **Value (Parameter)** – The actual type of value that we can assign to that command, for example text or numerical value.
- I **Model info** – indicates whether this command is excluded or exclusive for any particular country. Refer to the sheet 'Model Dest'.
 1. (Blank) : No limitation. (All models and all destination are support this command)
Moreover, the definition is succeeded if there is a definition at the upper layer node.
 2. "=xxxx" : Only model xxxx supports this command.
(Other models don't support this command.)
 3. "=xxxx,=yyyy" : Model xxxx and yyyy support this command.
 4. "JA" : Only destination 'J' and 'A' of all models support this command.
 5. "-JA" : All models except destination except 'J' and 'A' support this command.
 6. "UC=xxxx" : Only destination 'U' and 'C' of model xxxx support this command.
(Other models and other destination of model xxxx don't support this command.)
 7. "-UC=xxxx" : Except destination 'U' and 'C' of model xxxx support this command.
(Other models, and destination "U" and "C" of model xxxx don't support this command.)
- I **Inhibit TAG** – Indicated the guard condition of the command. Refer to the sheet 'Guard Condition'.
- I **Description** – Memo

3 Command Generation

You can easily generate YNC commands by using the Function Tree.

Select either PUT command or GET command.

1. Choose either PUT or GET radio button of your choice in the Function Tree.

[illegible]

2. Move the cursor to the desired node. Make sure that '1' appears in the column L for YNC.

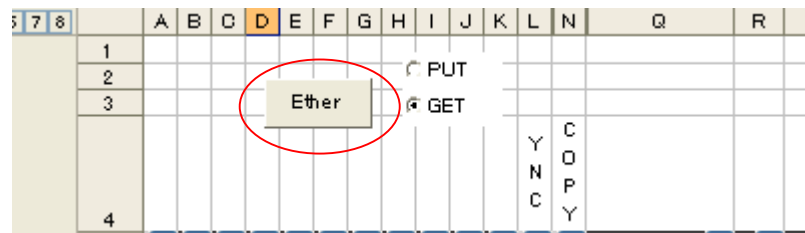
6	System				(Expand the rows hidden beneath this row)
7	Config	1		R	(Expand the rows hidden beneath this row)
91	Power_Control				(Expand the rows hidden beneath this row)
102	Party_Mode				(Expand the rows hidden beneath this row)
119	Sound_Video				(Expand the rows hidden beneath this row)
131	Input_Output				(Expand the rows hidden beneath this row)
769	Speaker_Preout				(Expand the rows hidden beneath this row)
1343	Misc				(Expand the rows hidden beneath this row)
1344	Display				(Expand the rows hidden beneath this row)
1368	Network				(Expand the rows hidden beneath this row)
1424	Trig_Out				(Expand the rows hidden beneath this row)
1479	Advanced_Setup				(Expand the rows hidden beneath this row)
1505	Memory_Guard	1	2		(Expand the rows hidden beneath this row)
1506					1 "Off"
1507					2 "On"
1508	Remote_Signal				(Expand the rows hidden beneath this row)
1512	Event				(Expand the rows hidden beneath this row)
1516	Unit_Desco	1		R	(Expand the rows hidden beneath this row)
1521	Service_Info	1		R	(Expand the rows hidden beneath this row)
1537	Main_Zone				(Expand the rows hidden beneath this row)
1538	Config	1			(Expand the rows hidden beneath this row)
1563	Basic_Status	1		R	(Expand the rows hidden beneath this row)

3. You can still generate a Put command even if '1' does not appear in the cell of the desired

node as long as '1' is placed in the cell of the upper node.

Product	Category	Subcategory	Item	Value	Unit	Notes
5816	SIRIUS					(Expand the rows hidden beneath this row)
5817	Config		1		R	(Expand the rows hidden beneath this row)
5822	Play_Control					(Expand the rows hidden beneath this row)
5942	Play_Info		1		R	(Expand the rows hidden beneath this row)
5976	Internal_Data		1			(Text Strings) (Expand the rows hidden beneath this row)
5978	iPod					(Expand the rows hidden beneath this row)
5979	Config		1			(Expand the rows hidden beneath this row)
5980	Feature_Availability			3	R	(Expand the rows hidden beneath this row)
5984	Standby_Charge			2		(Expand the rows hidden beneath this row)
5985						1 "Off"
5986						2 "Auto"
5987	Play_Control					(Expand the rows hidden beneath this row)
6008	Play_Info		1		R	(Expand the rows hidden beneath this row)
6034	List_Control				W	(Expand the rows hidden beneath this row)
6057	List_Info		1		R	(Expand the rows hidden beneath this row)
6084	Bluetooth					(Expand the rows hidden beneath this row)
6085	Config		1			(Expand the rows hidden beneath this row)
6100	Play_Control				W	(Expand the rows hidden beneath this row)

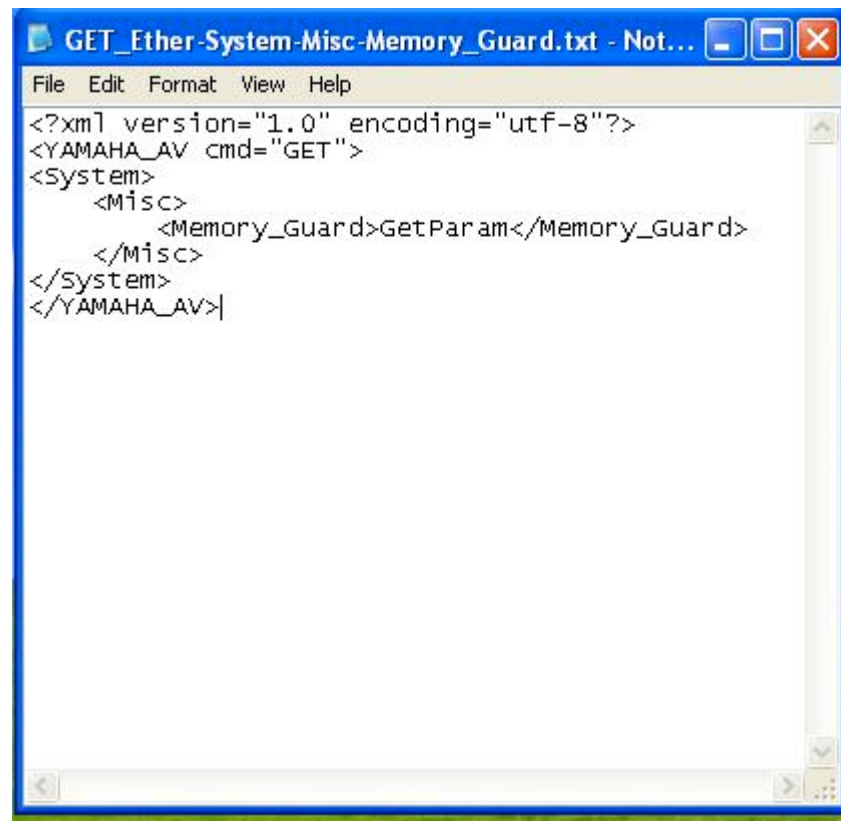
4. Click on the 'Ether' button at the top of the spreadsheet, depending on whether you want a command of Ethernet communication. The command is also copied to the clipboard.
- Example of GET System-Misc-Memory_Guard



<YNC>

Here's the file name when you select the GET command for System-Misc-Memory_Guard:

GET_Ether-System-Misc-Memory_Guard.txt



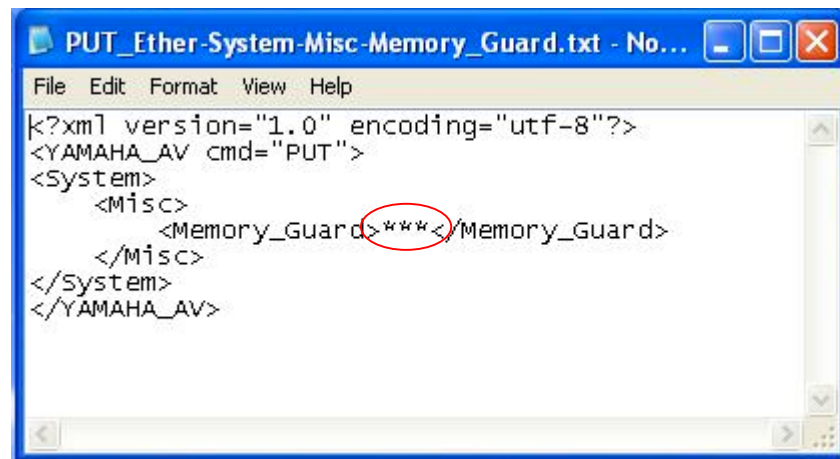
- Example of PUT System-Misc-Memory_Guard

[illegible]

<YNC>

Here's the file name when you select the PUT command for System-Misc-Memory_Guard:

PUT_Ether-System-Misc-Memory_Guard.txt



Replace ******* for the actual parameter after generating the command.

(Note 1)

Note 1)

The parameter to be replaced for *** varies, depending on the content of the column T in the Function Tree.

1. When the parameter is put in the parentheses of "".

=> Directly specify the exact parameter you see in that column to replace for *** .

2. When the parameter starts with Min/Max.

=> 5 ways to specify the parameter. (m, M, and n shall be numerical values)

- Min/Max, m, M, n

=> Minimum= m , Maximum= M , and the number of Steps= n composed of numerical values.

- Min/Max,m,M,Hex

=> Minimum=m and Maximum=M composed of Hexadecimal values.

- Min/Max,m,M,Ascii
=> The minimum number of character strings=m and the maximum number of character strings=M composed of Ascii character strings.
- Min/Max,m,M,UTF-8
=> The minimum number of character strings=m and the maximum Number of character strings=M composed of UTF-8 character strings.
- Min/Max,m,M,Latin-1
=> The minimum number of character strings=m and the maximum number of character strings=M composed of Latin-1 character strings.

<<For your information>>

If you select a parameter along with a node from the Function Tree at the time of generating a PUT command, you can get a PUT command with the selected parameter already inserted in the output PUT command.

	A	B	C	D	E	F	G	H	I	J	K	L	N	Q	R	S	T
1																	
2																	
3																	
4																	
5																	
6																	
7																	
91																	
102																	
119																	
131																	
769																	
1343																	
1344																	
1368																	
1424																	
1479																	
1505																	
1506																	
1507																	
1508																	
1512																	
1516																	
1521																	
1537																	
1538																	
1563																	
1700																	

Look at the above Function Tree, select "Memory_Guard"(D1505) first and click "Off"(T1506) while you press Ctrl key, which allows you to select the two cells simultaneously. Then enter Ether button. You will get a command with the parameter of "Off"(T1506) already inserted in the command. This trick is valid only when the parameter in the column T is input in the parentheses of "".


```

<?xml version="1.0" encoding="utf-8"?>
  <YAMAHA_AV cmd="PUT">
    <System>
      <Misc>
        <Mem_Guard>Off</Mem_Guard>
      </Misc>
    </System>
  </YAMAHA_AV>

```

Cautions when you copy a node where 'C' appears in the column N.

Be careful when you generate a node where 'C' appears in the column N.

The tree below indicates that the alignment below Zone 3 is the same as Zone 2.

5																		# of states	R	Value (Parameter)
6	System																			(Expand the rows hidden beneath this row)
1537	Main_Zone																			(Expand the rows hidden beneath this row)
3718	Zone_2																	R		(Expand the rows hidden beneath this row)
3719	Config																	1		(Expand the rows hidden beneath this row)
3736	Basic_Status																	1	R	(Expand the rows hidden beneath this row)
3912	Power_Control																			(Expand the rows hidden beneath this row)
3924	Volume																			(Expand the rows hidden beneath this row)
4023	Input																			(Expand the rows hidden beneath this row)
4219	Scene																			(Expand the rows hidden beneath this row)
4444	Sound_Video																			(Expand the rows hidden beneath this row)
4457	Play_Control																		W	(Expand the rows hidden beneath this row)
4464	List_Control																		W	(Expand the rows hidden beneath this row)
4478	Zone_3																	31	C	(Child nodes and Parameters are the same .
4479	Zone_4																			(Expand the rows hidden beneath this row)
4999	Tuner																			(Expand the rows hidden beneath this row)
5432	HD_Radio																			(Expand the rows hidden beneath this row)
5816	SIRIUS																			(Expand the rows hidden beneath this row)
5978	iPod																			(Expand the rows hidden beneath this row)
6084	Bluetooth																			(Expand the rows hidden beneath this row)

If you want to get the parameter status of Zone3-Basic_Status, you first need to generate a corresponding command from Zone 2. Then modify the command to fit it for Zone 3.

<YNC>

GET_Ether-Zone_2-Basic_Status.txt

```

<?xml version="1.0" encoding="utf-8"?>
<YAMAHA_AV cmd="GET">
  <Zone_2>
    <Basic_Status>GetParam</Basic_Status>
  </Zone_2>
</YAMAHA_AV>

```



GET_Ether-Zone_3-Basic_Status.txt

```

<?xml version="1.0" encoding="utf-8"?>
<YAMAHA_AV cmd="GET">
  <Zone_3>
    <Basic_Status>GetParam</Basic_Status>
  </Zone_3>
</YAMAHA_AV>

```

4 A list of commands

The various procedures of generating a command using the tool (Function Tree) are presented up to chapter 3.

In this chapter, as a reference, you will learn another way to generate a command with a list of commands instead of the tool.

4.1 What is a list of commands?

This is a list of all the commands necessary to control the AV device over YNC.

A list of commands is created in a text file so you can easily find the desired list of commands for the device you are looking for by applying the rule below to the file name.

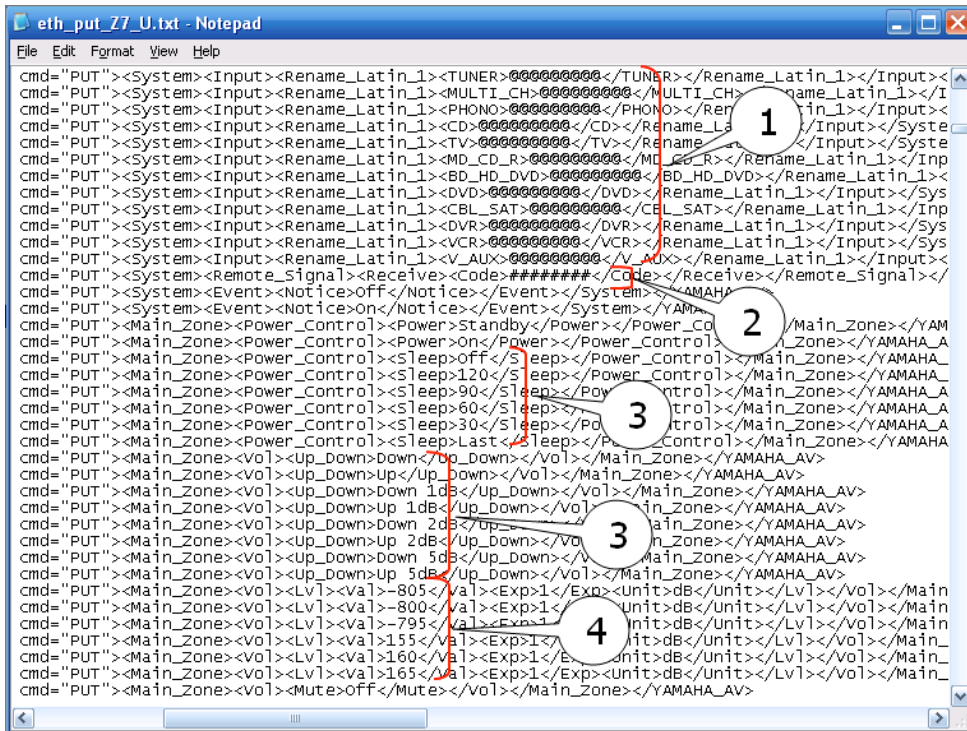
YNC_Cmd_Samples	← Folder of YNC cmd samples
<i>YNC_RX-A810_GET_x.txt</i>	← All GET cmd list of each model
<i>YNC_RX-A810_PUT_x.txt</i>	← All PUT cmd list of each model
<i>YNC_RX-A1010_GET_x.txt</i>	← All GET cmd list of each model
<i>YNC_RX-A1010_PUT_x.txt</i>	← All PUT cmd list of each model
:	
<i>YNC_RX-A3010_GET_x.txt</i>	← All GET cmd list of each model
<i>YNC_RX-A3010_PUT_x.txt</i>	← All PUT cmd list of each model

Note:

<i>YNC_RX-A810_GET_L.txt</i>	
└───┬───┬───	
└───┬───	Region type (A,B,G,L,R,...U) ... Please disregard it.
└───	YNC cmd type (PUT or GET)
└───	Model Name (It is different according to the region.)

Such commands can be viewed when you open a list of commands in text editor.

YNC (Network)



One command in each line and the commands are all laid out over the multiple lines in the same order as illustrated in the Function Tree.

You can copy a command to use but please be noted on the following points.

- In case that the parameter to be set (at the very right hand side of the node) in the PUT command was @ or #, replace it for an appropriate character string or numerical value.

For the section 1 in the above text file, replace @ for such a character as UTF-8.

The maximum number of the character strings or numerical values for the parameter shall be the same as that of @ in the text file.

See the Function Tree for the detailed information of the minimum number of character strings and string codes.

Apply the hexadecimal values (0-F) to # in the section 2.

The maximum number of the character strings for the parameter shall be the same as that of # in the text file.

See the Function Tree for the detailed information of the minimum number of character

strings.

Example,

YNC (Network) :

```
<?xml version="1.0" encoding="utf-8"?>
<YAMAHA_AV cmd="PUT">
  <System>
    <Remote_Signal>
      <Receive>
        <Code>7A85FF00</Code>
      </Receive>
    </Remote_Signal>
  </System>
</YAMAHA_AV>
```

Note : '7A85FF00' is a command that specifies MuteOn/Off when the device is Z7.

- When several parameters exist for the same command like the section 3, it means that you are supposed to select one from them. But note that in the section 4, when the parameter is composed of numerical values only, possible parameters from the top three and bottom three are described in the text file. If you want to set a parameter belonging somewhere in the middle of the possible parameters, calculate the minimum and maximum values as well as the number of steps for your desired parameter.
- Look at the example in the above text file. The numerical values for Val are -805, -800, -795, ..., 155, 160, and 165 respectively. It tells us that the minimum value is -805, maximum value is 165, and the number of steps is 5. A command with the parameter -300 will be like this:

Example,

YNC (Network) :

```
<?xml version="1.0" encoding="utf-8"?>
<YAMAHA_AV cmd="PUT">
  <Main_Zone>
    <Volume>
      <Lvl>
        <Val>-300</Val>
        <Exp>1</Exp>
        <Unit>dB</Unit>
      </Lvl>
    </Volume>
  </Main_Zone>
</YAMAHA_AV>
```