



EMC - Test Report

Model: DN232 / DN216 / DN208 / DN204**FCC ID** N5ZDN232**Product type** DVR (Digital Voice Recorder)**Serial No.**

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Applicant Dyne Telecom Co., Ltd.**Address** 3F Chungyong B/D, 1123-1, Kwanyang2-Dong, Dongan-Gu, Anyang-City, Kyeongki-Do, Korea 431-062**Manufacturer** Dyne Telecom Co., Ltd.**Address** 3F Chungyong B/D, 1123-1, Kwanyang2-Dong, Dongan-Gu, Anyang-City, Kyeongki-Do, Korea 431-062**Test specification (Standard)** : FCC Part15 Subpart B Class B**Test Result** : In complianceTested by
(Test engineer)

2001-04-16 Young Joon, Park

Date

Name

Signature

Reviewed by
(EMC Technical Manager)

2001-04-16 James, Hong

Date

Name

Signature

Definition

: Applicable,



: Not Applicable,

N/A

: Not Applicable,



: Not Applicable

The test result only responds to the tested sample.

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1. EUT description

Introduction

DN232 / DN216 / DN208 / DN204 is a DVR (Digital Voice Recorder).

Identification

Receipt date : 2001-04-09

Model : DN232 / DN216 / DN208 / DN204

Model Differences : **DN232 (Original Model : 32MByte Memory) : Tested**

DN216 / DN208 / DN204

(Identical to original model, Only with different memory capacity : 16MB / 8MB / 4MB)

Manufacturer : Dyne Telecom Co., Ltd.

Address : 3F Chungyong B/D, 1123-1, Kwanyang2-Dong, Dongan-Gu, Anyang-City,
Kyeongki-Do, Korea 431-062

Contact person : Kyu-Chang, Kim

Telephone : +82 - 31 - 422 - 3481,2

Serial No : -

EUT Size : 100.4mm x 41mm x 12mm (HxWxD)

Peripheral Device Ports

Port name	Description
DIGITAL I/O (Parallel)	Data download port
Earphone	Earphone connector (Mini plug, mono)
Ext. Mic	External Microphone connector (Mini plug, mono)

Electrical rating

Input : **3.0V (AAA Size Battery : 2EA)**

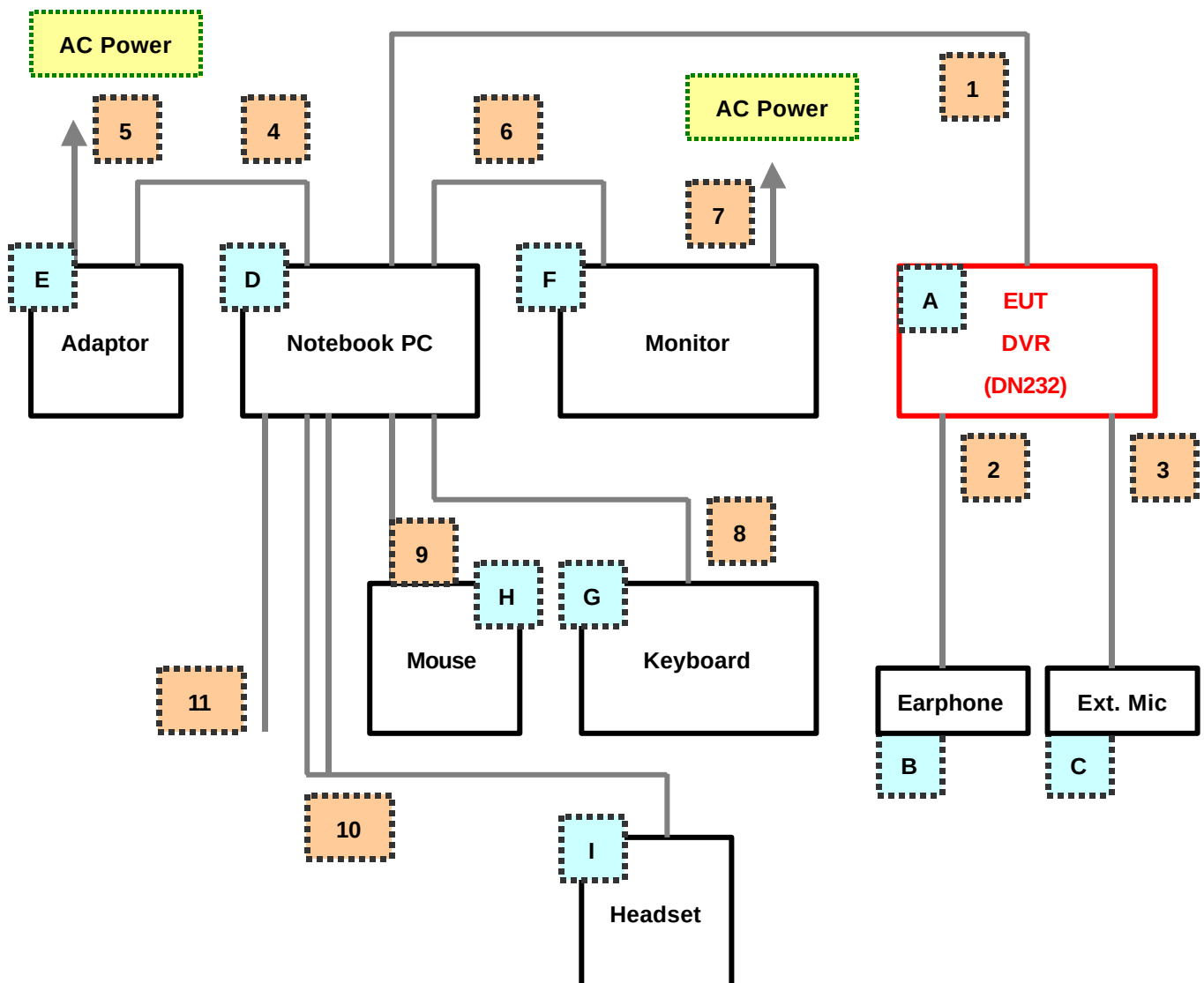
Output : -

2. Test Set-up

Test Mode

Voice record, play mode & Data transfer mode.

Cable configuration



**Cable description**

	Cable Name	Type	Length (m)	Remark
1	DIGITAL I/O Cable	Unshielded	2.0	Parallel
2	Earphone Cable	Unshielded	2.0	Mini Jack
3	Ext. Mic Cable	Unshielded	2.0	Mini Jack
4	Notebook PC Power Cable	Unshielded	1.6	-
5	Adaptor Power Cable	Unshielded	1.8	-
6	Monitor Cable	Shielded	2.0	Dsub
7	Monitor Power Cable	Unshielded	1.8	-
8	Keyboard Cable	Unshielded	1.6	Mini Din
9	Mouse Cable	Unshielded	1.6	Mini Din
10	Headset Cable	Unshielded	2.5	Jack
11	Line In Cable	Unshielded	2.0	Jack

Auxiliary equipment

	Description	Model name	Serial No.	Manufacturer	FCC ID or DoC Info
A	DVR (EUT)	DN232	-	Dyne Telecom	N5ZDN232
B	Earphone	-	-	-	N/A
C	Ext. Mic	-	-	-	DoC
D	Notebook PC	Slim 5360	MB0VAA111100075	I&B COM	DoC
E	Adaptor	LSE9802A2060	BJJKJH	LI SHIN	N/A
F	Monitor	PG17HS	P013H1DN301661	SAMSUNG	DoC
G	Keyboard	SK-2502C	M000351491	Hewlett Packard	DoC
H	Mouse	M-S48	LZA84601000	Logitech	JNZ201213
I	Headset	Hi-Sonic	-	-	N/A

Test software

Software name	Manufacturer	Version	Description
-	-	-	-



Measurement Procedures

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.

Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)

Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-1992 7.2.3, 7.2.4 and 8.3.1.1, 8.3.1.2



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3. Test Result

Test summary

Test	Result	Remark
Emission test (EMI)		
Radiated emission	Met	
Conducted emission	Not applicable	

Measurement uncertainty (k=2)

150kHz~30MHz: ± 2.68 , 30MHz~300MHz: +4.58, -4.66, 300MHz ~ 1GHz: +3.78, -3.74

Uncertainty parameter was calculated according to 'NAMAS Publication NIS 80'

The tested DN232 / DN216 / DN208 / DN204 fully meets the Requirements of ANSI C63.4-1992 , when operated as described in this report.



Radiated emission

Test result: **Met**

Date of testing : 2001-04-13

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008

Frequency Band 30MHz - 1000MHz

Instrument settings IF Band Width : 120KHz

Antenna distance 3m (From the EUT)

Test data sheet (Quasi-Peak reading)

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
42.50	17.1	H	3.0	11.23	0.60	40.0	28.93	11.07
102.10	25.8	V	2.0	10.35	1.00	43.5	37.15	6.35
132.70	19.3	V	2.2	11.90	1.30	43.5	32.50	11.00
159.40	22.3	H	3.5	12.70	1.60	43.5	36.60	6.90
182.30	23.9	V	2.0	13.43	1.60	43.5	38.93	4.57
226.00	14.4	H	3.2	17.10	1.90	46.0	33.40	12.60
337.50	10.2	V	1.0	15.14	2.60	46.0	27.94	18.06
408.60	9.2	H	2.0	15.82	2.80	46.0	27.82	18.18
631.20	13.6	H	2.2	19.72	3.80	46.0	37.12	8.88
706.30	8.9	V	1.0	21.52	4.00	46.0	34.42	11.58
850.90	9.3	V	1.4	21.80	4.50	46.0	35.60	10.40
924.50	3.2	H	2.0	22.70	4.60	46.0	30.50	15.50

Comment: -

**Conducted emission**Test result: **Not applicable**

Date of testing : -

Ambient temperature: -°C, Relative humidity: -%, Atmospheric pressure: -hPa(mbar)

Test site type: Shielded room

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3825/2	EMCO	LISN	9206-1971
ESHS30	Rohde Schwarz	Field strength meter	828144/002
-	-	-	-

Frequency Band 450KHz - 30MHz

Instrument settings IF Band Width : 9KHz

Test data sheet (Quasi-Peak reading)

Frequency [MHz]	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]

Comment: -



Test data graphic

