

DIGITAL AUDIO SIGNAL GENERATOR

Digital Audio Signal Generator DG-2530A

OUTLINE

DG-2530A generates the test signal by the IEC 60958 (with PCM) and IEC61937 (with AC-3, DTS) digital audio interface format and measures the characteristic of the equipment which processes the digital signal. The sampling frequency of PCM test pattern is up to 96 kHz.

FEATURES

PCM, AC-3 and DTS

Pre-set test patterns of PCM, AC-3 and DTS are generated by digital.

Test patterns of AC-3 and DTS are fixed. PCM patterns can be rewritten by using RS-232C.

Manual operation

Emphasis bit and copy bit of C-bit, validity flag and L/R-MUTE in digital audio interface formatting can be manually changed regardless of the test pattern.

However, L/R-MUTE is changeable at PCM MODE only.

Two kinds of output

The signals are output by coaxial terminal and optical terminal.

External control

The key operation of a front panel can be controlled through remote control terminal of the rear panel.

Seven segment LED display

The output signal frequency and the level or pattern No. is displayed by seven segments LED.

Easy test pattern change

The test pattern is output in order pre-set by the UP/DOWN/TOP key.

Memory backup

The test pattern and status memorizes in memory.

RS-232C

GP-IB
OPTION



SPECIFICATIONS

PCM test pattern

Sampling frequency	96 kHz, 48k Hz, 44.1 kHz, 32 kHz
Number of quantization bit	16 bit 2 channel, 24bit 2 channel
Test pattern frequency	1Hz ~ (Sampling frequency/2) Hz The display is 4 digits though the frequency can be set in 1 Hz.
Test pattern waveform	Sine wave, square-wave
Number of test pattern	Maximum 100 kinds
Sampling frequency accuracy	Fs ± 50 ppm (when internal clock is used)
MUTE function	L, R, L + R
Output format	Compliant with the IEC 60958 digital audio interface standard
Test pattern output range	-96 to 0dBm (at 16 bit), -144 to 0dBm (at 24bit) in 0.1 dBm steps

AC-3, DTS test pattern

Sampling frequency	48kHz
Number of quantization bit	20 bit, 16 bit fixed (at AC-3) 20 bit fixed (at DTS)
Test pattern frequency	3.13 Hz, 5.21 Hz, 10.42 Hz, 20.84 Hz, 31.25 Hz, 50 Hz, 81.25 Hz, 100 Hz, 118.75 Hz, 200 Hz, 406.25 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz, 15 kHz, 20 kHz fixed (at AC-3) 5.21 Hz, 10.42 Hz, 23.44 Hz, 46.88 Hz, 93.75 Hz, 187.5 Hz, 562.5 Hz, 937.5 Hz, 1.875 kHz, 4.688 kHz, 10.03 kHz, 15 kHz, 20.06 kHz fixed (at DTS)
Test pattern waveform	Sine wave
Number of test pattern	56 kinds (at AC-3), 41 kinds (at DTS)
Sampling frequency accuracy	Fs ± 50 ppm (when internal clock is used)
MUTE function	Fixed
Output format	Compliant with the IEC61937 digital audio interface standard
Compression method	AC-3, DTS
Test pattern output level	0 dBFS, -3 dBFS, -20 dBFS, -40 dBFS, -60 dBFS, -80 dBFS, -100 dBFS, -120 dBFS fixed (at AC-3) 0 dBFS, -20 dBFS, -40 dBFS, -60 dBFS, -80 dBFS, -100 dBFS fixed (at DTS)

Connectors

Coaxial output	BNC-R Output impedance and level : 75 Ω, 0.5 ± 0.05V _{p-p} (75 Ω termination)
Optical output 1 (Up to 48 kHz of the sampling frequency)	TOSLINK TOTX176 Output level : -19dBm fixed and -19dBm to -27dBm variable at 2 kinds
Optical output 2 (Up to 96 kHz of the sampling frequency)	TOSLINK TOTX179 Output level : -21dBm(min.) and -15dBm(max.) fixed

EXT. CLOCK input	BNC-R Input level : TTL level *256 times the sampling frequency is input at the 96 kHz of sampling frequency. 512 times the sampling frequency is input at the other sampling frequency.
BIT CLOCK, Fs output	BNC-R Output level : TTL level
Remote control	D-sub 15 pin (female)
RS-232C	D-sub 25 pin (female), Compliance with RS-232C standard
Dimensions	210 (W) × 133 (H) × 300 (D) mm
Weight	Approx. 3.9 kg
Power source	100 ~ 240VAC, 50/60Hz, approx. 8W
Accessories	Optical fiber cable with connector : 1 Power cord : 1 Instruction manual : 1

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AC-3 Test Pattern Table (Fixed)

Sampling Rate: 48kHz, Bitrate: 448kbps 5.1channels, 192kbps 2channels

No.	Mode	Word Length	L	R	LS	RS	C	LFE
1	3/2/.1	16	20.84Hz -60dBFS	20.84Hz -60dBFS	20.84Hz -60dBFS	20.84Hz -60dBFS	20.84Hz -60dBFS	20.84Hz -60dBFS
2	3/2/.1	16	200Hz -60dBFS	200Hz -60dBFS	200Hz -60dBFS	200Hz -60dBFS	200Hz -60dBFS	200Hz -60dBFS
3	3/2/.1	16	2kHz -60dBFS	2kHz -60dBFS	2kHz -60dBFS	2kHz -60dBFS	2kHz -60dBFS	2kHz -60dBFS
4	3/2/.1	16	20kHz -60dBFS	20kHz -60dBFS	20kHz -60dBFS	20kHz -60dBFS	20kHz -60dBFS	20kHz -60dBFS
5	3/2/.1	16	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS
6	3/2/.1	16	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS
7	3/2/.1	16	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS
8	3/2/.1	16	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS
9	3/2/.1	16	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS
10	3/2/.1	16	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS
11	3/2/.1	16	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS
12	3/2/.1	16	406.25Hz -20dBFS	406.25Hz -20dBFS	406.25Hz -20dBFS	406.25Hz -20dBFS	406.25Hz -20dBFS	406.25Hz -20dBFS
13	3/2/.1	16	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS
14	3/2/.1	16	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS
15	3/2/.1	16	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS
16	3/2/.1	16	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS
17	3/2/.1	16	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS
18	3/2/.1	16	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS
19	3/2/.1	16	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS
20	3/2/.1	20	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS	3.13Hz -20dBFS
21	3/2/.1	20	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS	5.21Hz -20dBFS
22	3/2/.1	20	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS	10.42Hz -20dBFS
23	3/2/.1	20	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS	20.84Hz -20dBFS
24	3/2/.1	20	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS	50Hz -20dBFS
25	3/2/.1	20	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS	100Hz -20dBFS
26	3/2/.1	20	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS	200Hz -20dBFS
27	3/2/.1	20	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS	500Hz -20dBFS
28	3/2/.1	20	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS	1kHz -20dBFS
29	3/2/.1	20	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS	2kHz -20dBFS
30	3/2/.1	20	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS	5kHz -20dBFS
31	3/2/.1	20	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS	10kHz -20dBFS
32	3/2/.1	20	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS	15kHz -20dBFS
33	3/2/.1	20	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS	20kHz -20dBFS
34	3/2/00	16	1kHz -20dBFS	4kHz -20dBFS	2kHz -20dBFS	500Hz -20dBFS	8kHz -20dBFS	8kHz -20dBFS
35	3/2/.1	16	4kHz 0dBFS	4kHz 0dBFS	4kHz 0dBFS	4kHz 0dBFS	4kHz 0dBFS	4kHz 0dBFS
36	3/2/.1	16	4kHz -20dBFS	4kHz -20dBFS	4kHz -20dBFS	4kHz -20dBFS	4kHz -20dBFS	4kHz -20dBFS
37	3/2/.1	16	4kHz -40dBFS	4kHz -40dBFS	4kHz -40dBFS	4kHz -40dBFS	4kHz -40dBFS	4kHz -40dBFS
38	3/2/.1	16	4kHz -60dBFS	4kHz -60dBFS	4kHz -60dBFS	4kHz -60dBFS	4kHz -60dBFS	4kHz -60dBFS
39	3/2/.1	16	4kHz -80dBFS	4kHz -80dBFS	4kHz -80dBFS	4kHz -80dBFS	4kHz -80dBFS	4kHz -80dBFS
40	3/2/.1	16	4kHz -100dBFS	4kHz -100dBFS	4kHz -100dBFS	4kHz -100dBFS	4kHz -100dBFS	4kHz -100dBFS
41	3/2/.1	16	4kHz -120dBFS	4kHz -120dBFS	4kHz -120dBFS	4kHz -120dBFS	4kHz -120dBFS	4kHz -120dBFS

No.	Mode	Word Length	L	R	LS	RS	C	LFE
42	3/2/.1	16	31.25Hz 0dBFS	31.25Hz 0dBFS	31.25Hz 0dBFS	31.25Hz 0dBFS	31.25Hz 0dBFS	31.25Hz 0dBFS
43	3/2/.1	16	31.25Hz -20dBFS	31.25Hz -20dBFS	31.25Hz -20dBFS	31.25Hz -20dBFS	31.25Hz -20dBFS	31.25Hz -20dBFS
44	3/2/.1	16	31.25Hz -40dBFS	31.25Hz -40dBFS	31.25Hz -40dBFS	31.25Hz -40dBFS	31.25Hz -40dBFS	31.25Hz -40dBFS
45	3/2/.1	16	31.25Hz -60dBFS	31.25Hz -60dBFS	31.25Hz -60dBFS	31.25Hz -60dBFS	31.25Hz -60dBFS	31.25Hz -60dBFS
46	3/2/.1	16	31.25Hz -80dBFS	31.25Hz -80dBFS	31.25Hz -80dBFS	31.25Hz -80dBFS	31.25Hz -80dBFS	31.25Hz -80dBFS
47	3/2/.1	16	31.25Hz -100dBFS	31.25Hz -100dBFS	31.25Hz -100dBFS	31.25Hz -100dBFS	31.25Hz -100dBFS	31.25Hz -100dBFS
48	3/2/.1	16	31.25Hz -120dBFS	31.25Hz -120dBFS	31.25Hz -120dBFS	31.25Hz -120dBFS	31.25Hz -120dBFS	31.25Hz -120dBFS
49	3/2/.1	16	1kHz 0dBFS					
50	3/2/.1	16		1kHz 0dBFS				1kHz 0dBFS
51	3/2/.1	16			1kHz 0dBFS			
52	3/2/.1	16				1kHz 0dBFS		
53	3/2/.1	16					1kHz 0dBFS	
54	3/2/.1	16	81.25Hz 0dBFS	81.25Hz 0dBFS	81.25Hz 0dBFS	81.25Hz 0dBFS	81.25Hz 0dBFS	81.25Hz 0dBFS
55	3/2/.1	16	100Hz 0dBFS	100Hz 0dBFS	100Hz 0dBFS	100Hz 0dBFS	100Hz 0dBFS	100Hz 0dBFS
56	3/2/.1	16	118.75Hz 0dBFS	118.75Hz 0dBFS	118.75Hz 0dBFS	118.75Hz 0dBFS	118.75Hz 0dBFS	118.75Hz 0dBFS

