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HD Radio™ | MSG-3101

VECTOR SIGNAL GENERATOR

HD Radio®

※ 本器械只销售给加入了 DTS 公司运用的 HD Radio™ Alliance 的用户。



MEGURO

概要

本機は HD Radio™ 用の Vector Signal Generator。HD Radio™ 用のテスト码流保存在本機の内存中可以通过 LAN 连接电脑进行擦写。因此无需从其他外部存储器下载使用。

MSG-3101 は HD Radio™ 向け Vector Signal Generator です。HD Radio™ の試験に必要とされるテストベクタは、本器内蔵のフラッシュメモリに保存され LAN で接続されたコンピュータから書き換えが可能です。

特長

1. 可保存 HD Radio™ の所有テスト码流。
 2. 通过应用软件可以进行测试码流的更换、保存、各种设定变更等操作（窗口式界面），可进行简单高效的的操作。
 3. 测试码流可进行删除和写入。
 4. 在本机内部保存的测试码流，可不限大小地进行发送。
1. HD Radio™ のテストベクタ全てに対応可能です。
 2. アプリケーションは、テストベクタの変換、テストベクタの書き換え、各種設定変更の操作ごとにウィンドウが分かれており、作業が容易でスピーディーな操作が可能です。
 3. テストベクタの書き換えが可能です。
 4. 本器内蔵のフラッシュメモリに書き込まれたテストベクタは、容量の制限なしに送信が可能です。

規格

1. RF

频率范围	周波数範囲	100kHz to 170MHz
频率分辨率	周波数分解能	100Hz
频率精度	周波数精度	$\pm 1 \times 10^{-6}$
输出电平 *1	出力レベル範囲 *2	-20dBμV to +126dBμV (EMF) At modulation FM: -20dBμV to +126dBμV (EMF) AM (except MA3): -20dBμV to +126dBμV (EMF) AM (MA3): -20dBμV to +116dBμV (EMF)
输出电平分辨率	出力レベル分解能	0.1dB
输出电平精度	出力レベル精度	± 1 dB @CW90MHz
频响平坦性	レベル周波数平坦度	1MHz \leq f ± 1 dB, f < 1MHz ± 1.5 dB
谐波失真	スプリアス 高調波	< -30dB (CW)
	非高次谐波	非高調波 < -50dB (CW)
输出阻抗	出カインピーダンス	50Ω
回送损耗	VSWR	Typ. < 1.2
输出端子	出力端子	BNC
范围外信号	Range Out	
	通过改变频率设定	切替周波数 任意設定 0 to 170MHz: By setting
	输出	出力 DC 5V Max. 50mA
	输出端子	出力端子 RCA Pin Jack

2. 直角正交调制

I&Q 量化比特数	I・Q 量子化数	16bit
I&Q 样本频率	I・Q 標準化周波数	2.97675MHz

3. 数据

应用样本频率	対応標準化周波数	16bit
		AM:46.5117kHz, FM:744.1875kHz
储存容量	保存容量	8GB(32GB Option)

4. 外部接口

インターフェース USB, RS-232C, GP-IB

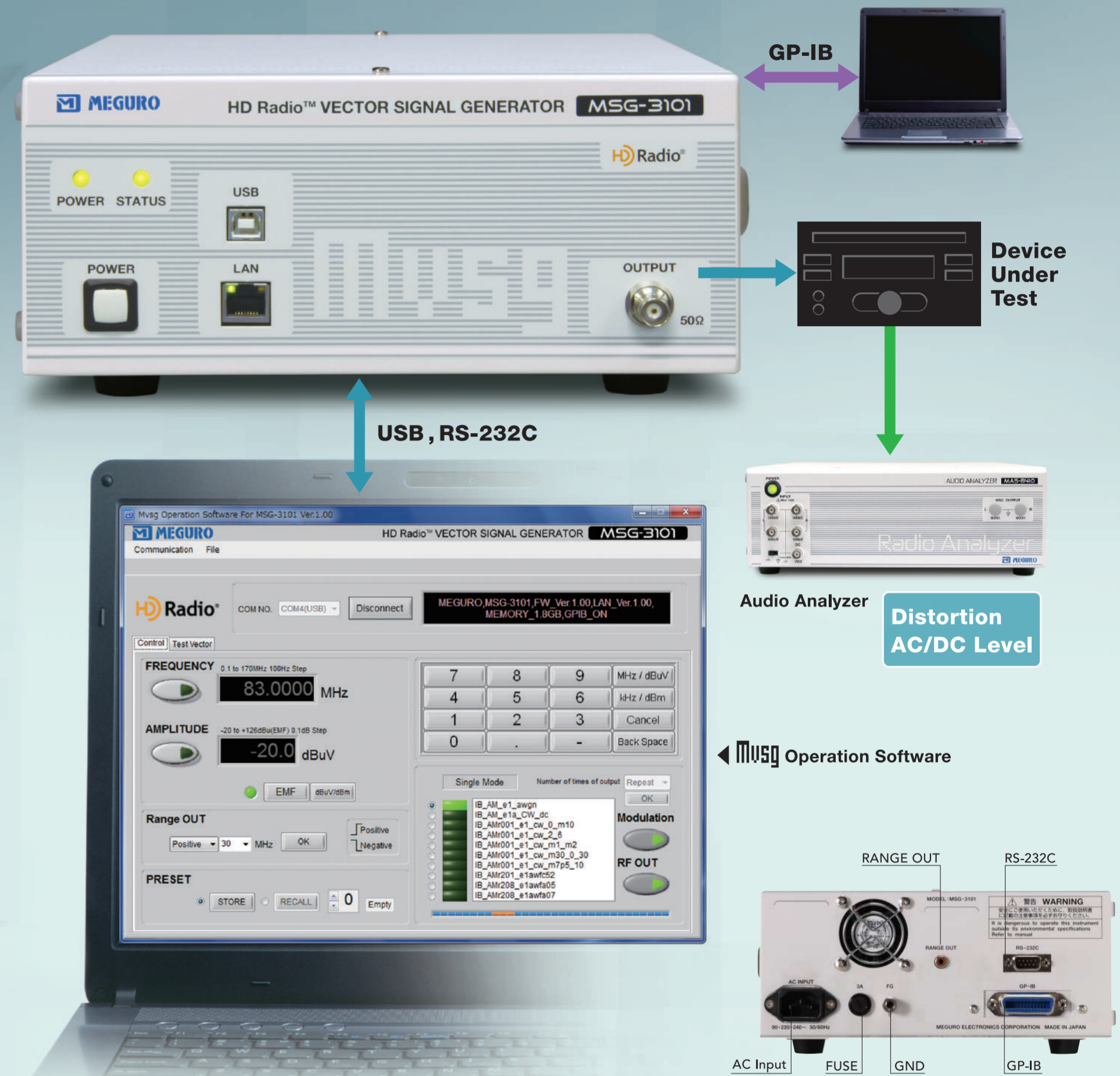
5. 其他

电源电压	電源電圧	AC 90 to 240 V 50/60Hz, 45VA
外形尺寸 (不包含突起部分)	外形寸法 (突起物含まず)	Approx. 240(W) x 100(H) x 350(D) mm
重量	重量	Approx. 4kg
动作温度范围	動作温度範囲	0 to +40°C
性能保障温度范围	性能保証温度範囲	10 to +35°C

*1 输出标准基于 DTS 公司的测定方法, FM 测试媒介调制时配合频道强度、AM 测试媒介调制时配合中心频谱峰值进行调整。

*2 出力レベルは iBiquity 社の測定仕様に基づき、FM テストベクター変調時はチャンネルパワー、AM テストベクター変調時はセンタースペクトラムのピーク値に合わせて調整してあります。

Configuration example



Test Vector List

The screenshot shows the MEGURO Operation Software interface. The Test Vector List is displayed, showing columns for Test Vector File Name, Size (MB), and Mode. The list includes files like IB_AM_e1_awgn (33.18 MB), IB_AM_e1a_CW_dc (2.21 MB), IB_AMr001_e1_cw_0_m10 (2.21 MB), IB_AMr001_e1_cw_2_6 (2.21 MB), IB_AMr001_e1_cw_m1_m2 (2.21 MB), IB_AMr001_e1_cw_m30_0_30 (2.21 MB), IB_AMr001_e1_cw_m7p5_10 (2.21 MB), IB_AMr201_e1awfc52 (35.39 MB, MA1), and IB_AMr208_e1awfa05 (90.69 MB, MA1). The software interface also shows the AM List and FM List tabs, and the Selected Test Vector Code.

AM						
No.	Disc No.	Vector Name	File Size [Mbytes]	Mode	Test Description	
1	#1.e1	IB_AMr208a_e1awfb00	A601	4.42	MA1	analog source is pulsed USASI NOISE, digital source is BER test pattern,
2	#2.e1	IB_AMr208_e1awfc00	A600	2.21	MA1	clean channel stereo digital / mono analog, pulsed 125-Hz tone (active 0.37 seconds, off
3	#1.e1	IB_AMr208_e1awfb01	A602	4.42	MA3	BER test pattern, clean channel
4	#1.e1	IB_AMr208_e1awfb02	A603	11.06	MA1	BER test pattern, GCS (triple highway overpass, 15S under I70), field recording, 65 MPH vehicle speed
5	#1.e1	IB_AMr208_e1awfb03	A604	11.06	MA1	test pattern, GCS (double highway overpass, Alt 40W under I70), field recording, 35 MPH vehicle speed
6	#1.e1	IB_AMr208_e1awfb04	A605	11.06	MA3	BER test pattern, GCS (double highway overpass, 27N under I70), field recording, 35 MPH vehicle speed
7	#2.e1	IB_AMr208_e1awfc04	A606	2.21	MA1	stereo digital / mono analog, 2.5-kHz bi-level tone with calibrated analog and digital time alignment, clean channel
8	#1.e1	IB_AMr208_e1awfb05	A607	11.06	MA3	BER test pattern, GCS (highway overpass, sign, and power lines, I70E under Sandville Road), field recording, 60 MPH vehicle speed
9	#2.e1	IB_AMr208_e1awfc06	A608	2.21	MA1	stereo music, clean channel
10	#2.e1	IB_AMr208_e1awfc08	A609	2.21	MA1	stereo digital / mono analog, 1-kHz tone with calibrated analog and digital audio levels, clean channel
11	#1.e1	IB_AMr208_e1awfa10	A611	90.69	MA1	AWGN audio source, clean channel
12	#2.e1	IB_AMr208_e1awfc10	A610	2.21	MA1	1-kHz tone (left channel only), clean channel
13	#2.e1	IB_AMr208_e1awfc11	A612	2.21	MA1	1-kHz tone (right channel only), clean channel
14	#2.e1	IB_AMr208_e1awfc19	A613	2.21	MA1	analog audio is silence, digital audio is 1-kHz tone (right and left), clean channel
15	#2.e1	IB_AMr208_e1awfc20	A614	2.21	MA3	All Digital, 1-kHz tone (left and right)
16	#2.e1	IB_AMr208_e1awfc23	A615	2.21	Analog	AM only, music, clean channel
17	#2.e1	IB_AMr208_e1awfc24	A616	2.21	MA1	digital audio is 1-kHz tone (left only), analog audio is silence, C/No = 79 dB-Hz
18	#2.e1	IB_AMr208_e1awfc26	A617	2.21	Analog	AM only, continuous 1-kHz tone, clean channel
19	#2.e1	IB_AMr208_e1awfc27	A618	2.21	MA1	stereo digital / mono analog, 1-kHz tone with calibrated analog and digital audio levels, clean channel, TX Gain = +7 dB
20	#2.e1	IB_AMr220_e1awfc28	A619	2.21	MA1	stereo digital / mono analog, 1-kHz tone with calibrated analog and digital audio levels, clean channel, TX Gain = -8 dB
21	#2.e1	IB_AMr208_e1awfc29	A620	2.21	MA1	digital audio is 1-kHz tone (left only), analog audio is silence, C/No = 76 dB-Hz
22	#2.e1	IB_AMr208_e1awfc30	A621	2.21	MA3	digital audio is 1-kHz tone (left and right), C/No = 61 dB-Hz
23	#2.e1	IB_AMr208_e1awfc31	A622	2.21	MA3	digital audio is 1-kHz tone (left and right), C/No = 65 dB-Hz
24	#2.e1	IB_AMr208_e1awfc32	A623	2.21	MA3	digital audio is 1-kHz tone (left and right), C/No = 76 dB-Hz
25	#2.e1	IB_AMr208a_e1awfc33	A624	2.21	MA1	stereo digital (left only) / mono analog, 4-kHz tone, clean channel
26	#2.e1	IB_AMr208a_e1awfc34	A625	2.21	MA1	stereo digital (right only) / mono analog, 4-kHz tone, clean channel
27	#2.e1	IB_AMr201_e1awfc52	A626	35.39	MA1	music, blend control bits change from 01bin to 10bin
28	#2.e1	IB_AMr230b_e1awfc102	A627	2.77	MA1	analog 1-kHz HD left 400 Hz HD right 2 kHz
29	#2.e1	IB_AMr230a_e1awfr1001	A628	2.21	MA3	1-kHz tone in left channel, silence in right channel
30	#2.e1	IB_AMr230a_e1awfr1002	A629	2.21	MA1	1-kHz tone (left channel and right channel) AWGN such that C/No = 67 dB-Hz Analog audio is silence
Total Volume			228.34			

FM						
No.	Disc No.	Vector Name	File Size [Mbytes]	Mode	Test Description	
1	#4.e1	IB_FMr208c_e1wfc00	F600	35.39	MP1	stereo pulsed 125-Hz tone (active 0.37 seconds, off 11.51 seconds) with calibrated analog and digital time alignment, clean channel
2	#4.e1	IB_FMr208c_e1wfc03	F601	35.39	MP1	stereo 4-kHz bi-level tone with calibrated analog and digital time alignment, clean channel
3	#4.e1	IB_FMr208c_e1wfc08	F602	17.7	MP1	stereo 1-kHz tone with calibrated analog and digital audio levels, clean channel
4	#4.e1	IB_FMr208c_e1wfc09	F603	17.7	MP1	1-kHz tone (left channel only), clean channel
5	#4.e1	IB_FMr208c_e1wfc10	F604	17.7	MP1	1-kHz tone (right channel only), clean channel
6	#4.e1	IB_FMr208e_e1wfc12	F605	17.7	MP1	8-kHz tone (left channel only), clean channel
7	#4.e1	IB_FMr208e_e1wfc13	F606	17.7	MP1	8-kHz tone (right channel only), clean channel
8	#4.e1	IB_FMr230_e1wfc14	F607	17.7	MP3	contains reserved Service ID/Session Types in PSD, clean channel
9	#4.e1	IB_FMr208c_e1wfc27	F608	17.7	MP1	stereo 1-kHz tone with calibrated analog and digital audio levels, clean channel, TX Gain = +7 dB
10	#4.e1	IB_FMr208c_e1wfc28	F609	17.7	MP1	stereo 1-kHz tone with calibrated analog and digital audio levels, clean channel, TX Gain = -8 dB
11	#4.e1	IB_FMr208c_e1wfc30	F610	17.7	MP1	analog audio is silence, digital audio is 1 kHz tone (right and left), clean channel
12	#4.e1	IB_FMr208j_e1wfc31	F611	123.87	MP1	AWGN audio source, clean channel
13	#4.e1	IB_FMr208c_e1wfc46	F612	17.7	MP6	BER test pattern, clean channel
14	#5.e1	IB_FMr208j_e1wfc89	F613	123.87	MP1	digital audio is 1-kHz stereo tone, analog audio is silence, Cd/No = 58 dB-Hz
15	#3.e1	IB_FMr208c_e1wfa98	F614	17.7	Analog	FM only, continuous stereo 1-kHz tone, clean channel
16	#5.e1	IB_FMr220a_e1wfc100	F615	17.7	MP3	3 programs analog 1-kHz tone; Prog 1: 1-kHz tone; Prog 4: 1-kHz tone; Prog 6: 1-kHz tone; (all level aligned), clean channel
17	#5.e1	IB_FMr220a_e1wfc101	F616	17.7	MP3	3 programs analog 1-kHz tone; Prog 1: 2-kHz tone; Prog 4: 400-Hz tone; Prog 6: 4-kHz tone, clean channel
19	#5.e1	IB_FMr230a_e1wfc102	F617	106.17	MP1	analog 1-kHz HD left 400 Hz HD right 2 kHz Clean channel
20	#5.e1	IB_FMr208c_e1wfc204	F618	17.7	MP1	analog source is audio mix, BER test pattern, clean channel
21	#9.e1	IB_FMr230c_e1wfr1032	F619	17.7	MP5	Vector with 1-kHz tone in left and right, clean channel with SIS and PSD Used for All Digital Max Power and All Digital Sensitivity
22	#9.e1	IB_FMr230a_e1wfr1037	F620	17.7	MP1	Analog source is stereo 1-kHz tone with calibrated analog and digital audio levels Clean channel
Total Volume			707.89			

- 本器械作为 HD Radio™ 产品的生产用计量仪, 得到了来自 DTS 公司的认证。
- 因在认证目的以外使用, 而出现的所有不良情况, 敝公司以及 DTS 公司概不负责。并且, 在您使用的时候请务必用电缆与被测物连接。
- 来自本机器的空间辐射, 在信号的性质上, 违反电波有关法规。
- 以上各记载的规格及外观等, 如因改善性能而有若干改变时, 恕不另行通知。

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