



# OG1

Country of origin: GDR

## DATA SUMMARY

**Organisation:** Kazernierte Volkspolizei (KVP) and NVA (Nationalen Volksarmee).

**Developer/maker:** Unknown. (Code 3631007).

**Year of production:** Believed around 1957.

**Purpose:** Frequency calibrator.

**Circuit features:** Two switchable crystal oscillators providing a raster of 5 or 50 segments with 25kHz spacing.

**Frequency:** 125kHz and 1.25MHz.

**Aerial:** Foldable blade, length 124cm.

**Valves:** DL192 2x.

**Power supply:** 2.8V LT (two x 1.4V 'D' cells in series), and 75V HT battery.

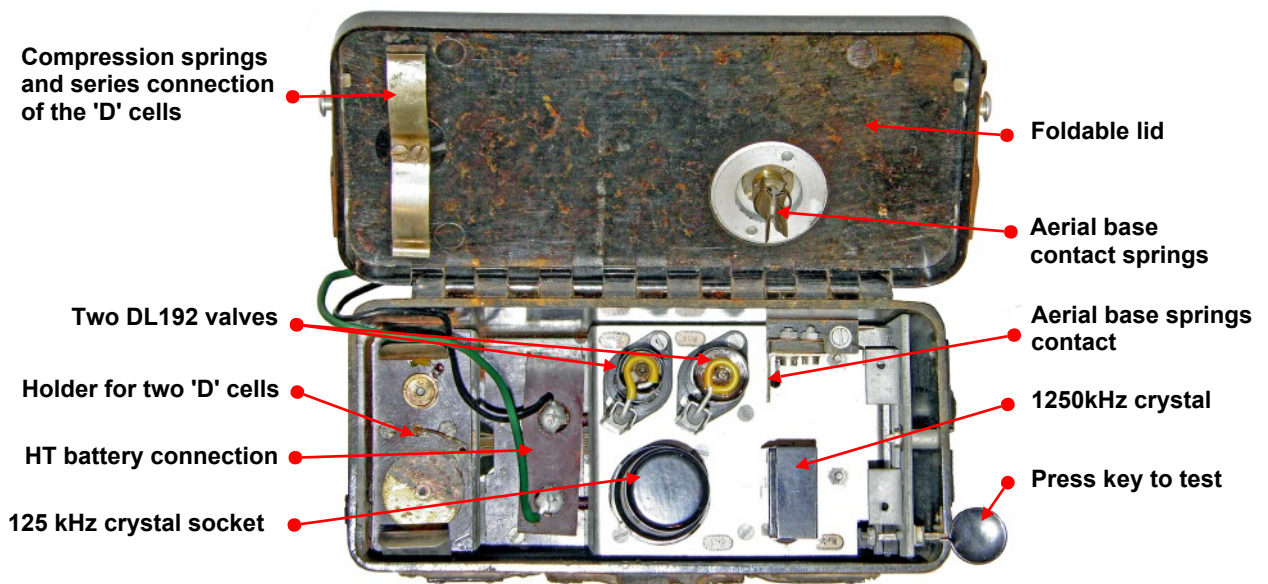
**Size (mm):** Height 130, length 95, width 200.

**Weight:** 1.6kg.

## Remarks.

The OG1 was a portable test set designed to check calibration and assist in accurately tuning a shortwave receiver or transceiver calibrated in the Soviet system of 25kHz segments. It was constructed using the same plastic (composite?) casing, foldable blade aerial, and components from the ill-fated 'Liliput' portable VHF transceiver (refer to 'WftW Various No. 8'). Powered by two 'D' cells and a single 75V HT battery, it used the original battery compartment and many of its mechanical arrangements. The 3-position system switch (previously off-receive-transmit) and test button (formerly the Morse key) were located on the control panel at the right-hand side of the case.

The OG1 provided crystal-controlled markers every 125kHz (in system switch position 0.125MHz) or every 1250kHz in switch position 1.25MHz. These markers coincided with the early Soviet system of dividing the shortwave spectrum up to 30MHz into 25kHz numbered segments known as 'Fix Wellen' (FW), with a marker at each 5th or 50th channel. Refer to the frequency list on the next page, copied from a Soviet handbook.



Compression springs and series connection of the 'D' cells

Foldable lid

Aerial base contact springs

Two DL192 valves

Aerial base springs contact

Holder for two 'D' cells

1250kHz crystal

HT battery connection

Press key to test

125 kHz crystal socket

Explanation of components of the OG1 calibrator.

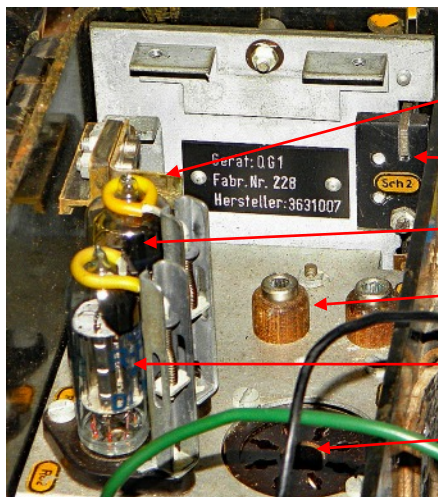
Circuit description

The OG1 comprised essentially two distinct crystal oscillators operating at 0.125MHz and 1.25MHz, with only one able to operate at a time. Utilizing a DL192 valve for each oscillator, the type of circuit used and whether it was rich in harmonics are currently unknown. The oscillator became operational only after pressing the 'Kontrolle' button (previously the Morse key), thereby reducing the consumption of HT current.

The Soviets divided the radio frequency spectrum from 0 to 30MHz into 25kHz numbered segments, known as Fix Wellen (FW). A frequency dial of an instrument was thus calibrated in numbers. A sample sheet of a conversion list from FW number to frequency in kHz and meters is shown on the scan at the right-hand side with a translation of Russian text.

The OG1 frequency calibrator provided markers every 125kHz (when the system switch was set to 0.125 MHz), representing a marker for every 5th FW (segment) across the full frequency range. I coloured these markers with a red square. When the system switch was set to 1.25MHz, a marker was provided for every 50th FW, for example, 1250kHz and 2500kHz, coloured with a green square on the table.

At the time of compiling this WftW Various chapter, it was not known whether the OG1 was a universal test unit or only issued with specific GDR-produced radios such as the FK-1, FK-50, and EK-1 receiver. It could only be used with earlier sets, as the 25kHz Fix Wellen system was replaced by kHz calibration in the 1950s with a new range of equipment.



Detail view showing the main components of the OG1.

**14. Таблица перевода фиксированных частот в килогерцы и метры**

№ частот	Частота в килогерцах	Длина волны в метрах	№ частот	Частота в килогерцах	Длина волны в метрах	№ частот	Частота в килогерцах	Длина волны в метрах
Frequency number	Frequency kHz	Wavelength Meters	Freq. number	Frequency kHz	Wavelength Meters	Freq. number	Frequency kHz	Wavelength Meters
0	0	0	41	1025	292,68	81	2025	148,15
1	25	12000,00	42	1050	285,71	82	2050	146,34
2	50	6000,00	43	1075	279,06	83	2075	144,58
3	75	4000,00	44	1100	272,73	84	2100	142,86
4	100	3000,00	45	1125	266,67	85	2125	141,18
5	125	2400,00	46	1150	260,86	86	2150	139,53
6	150	2000,00	47	1175	255,32	87	2175	137,93
7	175	1714,30	48	1200	250,00	88	2200	136,37
8	200	1500,00	49	1225	244,90	89	2225	134,83
9	225	1333,30	50	1250	240,00	90	2250	133,33
10	250	1200,00	51	1275	235,29	91	2275	131,87
11	275	1090,90	52	1300	230,77	92	2300	130,43
12	300	1000,00	53	1325	226,42	93	2325	129,03
13	325	923,07	54	1350	222,22	94	2350	127,66
14	350	857,14	55	1375	218,18	95	2375	126,32
15	375	800,00	56	1400	214,29	96	2400	125,00
16	400	750,00	57	1425	210,53	97	2425	123,71
17	425	705,88	58	1450	206,90	98	2450	122,45
18	450	666,66	59	1475	203,39	99	2475	121,21
19	475	631,57	60	1500	200,00	100	2500	120,00
20	500	600,00	61	1525	196,72	101	2525	118,81
21	525	571,42	62	1550	193,55	102	2550	117,65
22	550	545,45	63	1575	190,48	103	2575	116,50
23	575	521,73	64	1600	187,50	104	2600	115,38
24	600	500,00	65	1625	184,62	105	2625	114,29
25	625	480,00	66	1650	181,82	106	2650	113,21
26	650	461,53	67	1675	179,10	107	2675	112,15
27	675	444,44	68	1700	176,47	108	2700	111,11
28	700	428,57	69	1725	173,91	109	2725	110,09
29	725	413,79	70	1750	171,43	110	2750	109,09
30	750	400,00	71	1775	169,01	111	2775	108,11
31	775	387,09	72	1800	166,67	112	2800	107,15
32	800	375,00	73	1825	164,38	113	2825	106,19
33	825	363,63	74	1850	162,16	114	2850	105,27
34	850	352,94	75	1875	160,00	115	2875	104,35
35	875	342,85	76	1900	157,89	116	2900	103,45
36	900	333,33	77	1925	155,84	117	2925	102,56
37	925	324,32	78	1950	153,85	118	2950	101,69
38	950	315,78	79	1975	151,90	119	2975	100,84
39	975	307,69	80	2000	150,00	120	3000	100,00
40	1000	300,00						

Sample page of a table converting 25kHz segment numbers to kHz and meters. Red square marker 5 segments; green marker 25 segments.



Example of an Eastern Block transmitter, type RS1 6K, with its dial calibrated in 25kHz segments, set to FW 180 = 4.5MHz. (FW 150 to 200 on the dial equalled 3.750 to 5MHz).

Acknowledgements:

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