

MX – Russian HF Beacons, a.k.a. Single Letter Beacons, Single Letter High Frequency Beacons, Radio Beacons, Cluster Beacons, Channel Markers

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The beacons are on the air since the late 1960s. Until the late 1980's these beacons could be heard on numerous frequencies throughout the SW spectrum. After the disintegration of the Soviet Union, many of them disappeared and only a few survived. Some of them are very active, especially station "P".

What is their purpose? you might ask. Well, there are a number of theories; amongst them are several weird ones. Some say that they are river beacons, others state that the beacons are in fact UFO homing beacons. One person suggested that the beacons are part of the Russian strategic missiles network. He thinks that the Russians would launch their nuclear missiles when the beacons stop. Now, that certainly is not the case.

It is widely believed that the so called "cluster beacons" are propagation beacons. When I visited Russia's frigate Neukrotimy (photo) on 22 April 1997, its radio officer told me that the cluster beacons indeed belong to the Russian Navy. That was the confirmation of a theory that many dxers had for years.



The beacons that we hear today are either propagation beacons or channel markers. "Cluster" beacons because they transmit in clusters, groups of frequencies only a kHz apart. The cluster frequencies are 3594, 4558, 5154, 7039, 8495, 10872, 13528, 16332, 20048 kHz. A typical cluster looks like this:

Cluster beacon slots:	Example of a cluster:
.7 "D", Sevastopol	"D" - 8494.7
.8 "P", Kaliningrad	"P" - 8494.8
.9 "S", Severomorsk	"S" - 8494.9
.0 "C", Moscow	"C" - 8495.0
.1 "A", Astrakhan	"A" - 8495.1
.2 "F", Vladivostok	"F" - 8495.2
.3 "K", Petropavlovsk Kamchatskiy	"K" - 8495.3
.4 "M", Magadan	"M" - 8495.4

The majority of the other beacons are channel markers. Their purpose is to keep a frequency occupied. The purpose of several beacons is a mystery for me. For instance "V", believed to be located near Khiva. What is the purpose of it? Is it used for propagation purposes or is it a channel marker after all? In all the many years that this beacon is on the air, I have only heard ONE morse transmission of the station. I have never seen logs of other transmissions. It is of course possible that it really is a channel marker. After all, the buzzer was also on the air for years before the first voice transmission was heard. "V" popped up on many frequencies in the passed few years. 3658 kHz has been its standard frequency for years but the last log on this frequency dates back to 27 February 2011. After that it seems that 4150 kHz has become its fixed frequency. Besides that frequency "V" still uses various other frequencies like 4250, 4392 and 4961 kHz.

The solitary beacons and/or channel markers also belong to the Russian military. Most, but not all of them. In the 1970s beacon "W" from Cuba was frequently reported. Later a beacon from Albania popped up. This was "L". The first years that "L" was on the air bearings pointed towards the Leningradsky area. It had a distinct chirpy sound and typical Russian military Morse transmissions were sent on the same frequencies. Before and after the Morse messages the "L" marker was sent. After a couple of years, I think it was in August 2004, the bearings suddenly changed and pointed towards Albania. DFs from Austria, Italy and Greece all pointed to the Tirana area. So, what happened there? Did "L" really move or was it just a coincidence that the Russian beacon stopped and the Albanian beacon appeared? I have no idea. But it is a fact that after the change not only the typical chirpy sound of the beacon was gone but also the Morse messages were no longer noted. Anyway, "L" disappeared in March 2006 only to reappear again in June 2011. At the time of writing (28-7-2011) the beacon transmits on 7041.8 and 8497.8 kHz.

Another beacon, transmitting callsign "F" has been reported in 2004 and 2005. Several DFs from Central Germany, Norway and Estonia pointed to a location in the Gdynia area. The station was only on the air for a couple of days, on 10 and 11 June 2004 and 9 and 10 June 2005. Could it be a special event beacon?

As said Kaliningrad, with marker "P", is the most active station. It uses a large pool of frequencies and from time to time Morse and RTTY transmissions are sent. The first time I had a close encounter with the "real" station was in December 1990, when I noticed the first RTTY broadcasts on 3807//4043 kHz. It started with the "P" marker, followed by 75bd RTTY, then back to the marker and into 50bd RTTY and back to the marker again. I monitored the frequency for another hour or so and after ca. 30 minutes "P" stopped and 75bd RTTY began again. The messages consisted of 5 letter groups. No other callsign was used, just the letter "P". Then on 22-1-1995, I finally had a positive id of channel marker "P". On 3262 kHz at exactly 2100 UTC Kaliningrad started

its transmission: 3 groups of 5 P's followed by "RMP" (= Navy Kaliningrad), then into the weather forecast for the Baltic area in plain text, and after that the "P" marker came back.

In this document I have also included the frequencies of well-known stations as S28 (Buzzer), S30 (Pip), S32 (Squeaky Wheel) and the historic "Yelper". They all have/had a remarkable channel marker.

S28 suffered from transmitter problems that caused many parasitic transmissions which I also included in the list. There harmonic on 9250 kHz is also often logged.

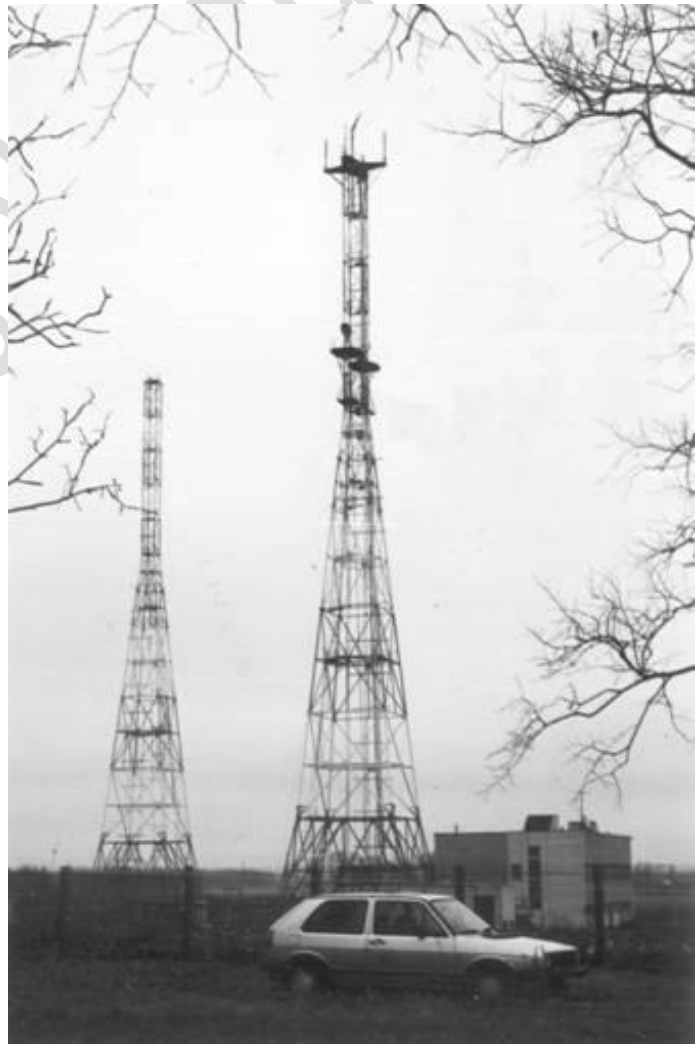
Jammer station "U"

Used to be active on many frequencies. The beacon was transmitted in FSK and the traffic on the frequencies was in RTTY.

In his excellent book 'Jamming', Rimantas Pleikys writes:

"The data from the archive was found by long-time Ministry employee, Mr. A. Stelingis, who at one time was responsible for the operation of jamming objects. During one conversation a secret came to light about a long time mystery regarding the Soviet 'U' channel marker. I was able to monitor the work of this marker at 16 frequencies. The 'U' marker disappeared from the airwaves in the spring of 1990. I have recorded an occasion when the 'U' marker ran on 13 frequencies simultaneously! My colleague, A. Stelingis, confirmed that these channels were continuously monitored at the jamming correction and control posts. The 'U' channels were used to transmit orders to the jammers -most likely to issue jamming frequency times and schedules. It must have been that 'U' channels were used as backup instead of the teletype link to Moscow. (It is also believable that the 'U' marker was on the shortwave bands was used also for civil defense and other purposes). It is worthwhile to note that when the USSR ceased its jamming on 30-11-1988, the 'U' marker transmitters continued to operate for almost another 18 months! This would indicate that throughout most of the USSR jamming systems continued to be kept ready to start again."

Panevėžys local radio jamming station (10x5 kW) in Lithuania. (from Rimantas' book "Jamming")



<http://www.radiojamming.info>
<http://www.zilionis.com/jamming/index.php?e>

FREQUENCY LIST

The beacon list that I have compiled is far from complete. My logs go back to 1980 and I have hardly any logs from the period 1960-1980. DXers who were active back then confirmed the presence of several beacons. I have included them as well.

ACTIVE CLUSTER BEACONS

Freq.	callsign	location	ITU	remarks
3593.7	D	Sevastopol	UKR	
3593.8	P	Kaliningrad	RUS	
3593.9	S	Severomorsk	RUS	
3594	C	Moscow	RUS	
3594.1	A	Astrakhan	RUS	
3594.2	F	Vladivostok	RUS	
3594.3	K	Petropavlovsk Kamchatskiy	RUS	
3594.4	M	Magadan	RUS	
4557.7	D	Sevastopol	UKR	
4557.8	P	Kaliningrad	RUS	
4557.9	S	Severomorsk	RUS	
4558	C	Moscow	RUS	
4558.1	A	Astrakhan	RUS	
4558.2	F	Vladivostok	RUS	
4558.3	K	Petropavlovsk Kamchatskiy	RUS	
4558.4	M	Magadan	RUS	
5153.7	D	Sevastopol	UKR	
5153.8	P	Kaliningrad	RUS	
5153.9	S	Severomorsk	RUS	
5154	C	Moscow	RUS	
5154.1	A	Astrakhan	RUS	
5154.2	F	Vladivostok	RUS	
5154.3	K	Petropavlovsk Kamchatskiy	RUS	
5154.4	M	Magadan	RUS	
7000	D	Sevastopol	UKR	Spurious frequency
7000	F	Vladivostok	RUS	Spurious frequency
7000	K	Petropavlovsk Kamchatskiy	RUS	Spurious frequency
7000	P	Kaliningrad	RUS	Spurious frequency
7000.2	F	Vladivostok	RUS	Spurious frequency
7038.2	L	Unid	RUS	Active since 30-6-2011.
7038.7	D	Sevastopol	UKR	
7038.8	M	Magadan	RUS	March-July 2004
7038.8	P	Kaliningrad	RUS	
7038.9	S	Severomorsk	RUS	
7039	C	Moscow	RUS	
7039.1	A	Astrakhan	RUS	
7039.2	F	Vladivostok	RUS	
7039.3	K	Petropavlovsk Kamchatskiy	RUS	
7039.4	M	Magadan	RUS	

Freq.	callsign	location	ITU	remarks
7077.4	D	Sevastopol	UKR	Spurious frequency
7078	K	Petropavlovsk Kamchatskiy	RUS	Spurious frequency
7078.4	F	Vladivostok	RUS	Spurious frequency
8494.2	L	Unid	RUS	Active since 30-6-2011.
8494.7	D	Sevastopol	UKR	
8494.8	P	Kaliningrad	RUS	
8494.9	S	Severomorsk	RUS	
8495	C	Moscow	RUS	
8495.1	A	Astrakhan	RUS	
8495.2	F	Vladivostok	RUS	
8495.3	K	Petropavlovsk Kamchatskiy	RUS	
8495.4	M	Magadan	RUS	
10871.7	D	Sevastopol	UKR	
10871.8	P	Kaliningrad	RUS	
10871.9	S	Severomorsk	RUS	
10872	C	Moscow	RUS	
10872.1	A	Astrakhan	RUS	
10872.2	F	Vladivostok	RUS	
10872.3	K	Petropavlovsk Kamchatskiy	RUS	
10872.4	M	Magadan	RUS	
13527.7	D	Sevastopol	UKR	
13527.8	P	Kaliningrad	RUS	
13527.9	S	Severomorsk	RUS	
13528.1	A	Astrakhan	RUS	
13528.2	F	Vladivostok	RUS	
13528.3	K	Petropavlovsk Kamchatskiy	RUS	
13528.4	M	Magadan	RUS	
16204	P	Kaliningrad	RUS	
16331.7	D	Sevastopol	UKR	
16331.8	P	Kaliningrad	RUS	
16331.9	S	Severomorsk	RUS	
16332	C	Moscow	RUS	
16332.1	A	Astrakhan	RUS	
16332.2	F	Vladivostok	RUS	
16332.3	K	Petropavlovsk Kamchatskiy	RUS	
16332.4	M	Magadan	RUS	
20047.5	P	Kaliningrad	RUS	
20047.7	D	Sevastopol	UKR	
20047.9	S	Severomorsk	RUS	
20048	C	Moscow	RUS	
20048.1	A	Astrakhan	RUS	
20048.2	F	Vladivostok	RUS	
20048.3	K	Petropavlovsk Kamchatskiy	RUS	
20048.4	M	Magadan	RUS	

ACTIVE BEACONS & CHANNEL MARKERS

Freq.	callsign	location	ITU	remarks
18.1	C	Moscow	RUS	Modulated Beacon "C" 18.1//14372//14450 kHz
420	P	Kaliningrad	RUS	
436	P	Kaliningrad	RUS	
448	P	Kaliningrad	RUS	
474	P	Kaliningrad	RUS	
490	P	Kaliningrad	RUS	
583	P	Kaliningrad	RUS	
2330.8	P	Kaliningrad	RUS	
3167	P	Kaliningrad	RUS	
3192	P	Kaliningrad	RUS	
3208	P	Kaliningrad	RUS	
3256	P	Kaliningrad	RUS	
3262	P	Kaliningrad	RUS	
3264	P	Kaliningrad	RUS	
3291	P	Kaliningrad	RUS	
3327	P	Kaliningrad	RUS	
3415	A	Astrakhan	RUS	
3569	P	Kaliningrad	RUS	
3649	P	Kaliningrad	RUS	
3699.5	P	Kaliningrad	RUS	
3756		'Pip', Rostov-on-Don area	RUS	Russian Southern Military District. Night freq.
3772	P	Kaliningrad	RUS	
3807	P	Kaliningrad	RUS	
3815		'Squeaky wheel'	RUS	Russian Western Military District (per 1 Sept 2010, ex Leningradsky District)
3828.9		'Squeaky wheel'	RUS	Russian Western Military District (per 1 Sept 2010, ex Leningradsky District). Night freq.
3837	P	Kaliningrad	RUS	
3840	P	Kaliningrad	RUS	
3842		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District)
4018.7	P	Kaliningrad	RUS	
4031	P	Kaliningrad	RUS	
4043	P	Kaliningrad	RUS	
4049	P	Kaliningrad	RUS	
4051	P	Kaliningrad	RUS	
4079	P	Kaliningrad	RUS	
4150	V	Khiva	UZB	
4210	P	Kaliningrad	RUS	
4250	V	Khiva	UZB	
4325		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District)
4325.9	R	Izhevsk	RUS	Strategic Missile Troops
4331	P	Kaliningrad	RUS	

Freq.	callsign	location	ITU	remarks
4387	P	Kaliningrad	RUS	
4392	V	Khiva	UZB	
4437	P	Kaliningrad	RUS	
4441.2	P	Kaliningrad	RUS	
4474.9	P	Kaliningrad	RUS	
4476	P	Kaliningrad	RUS	
4582.6		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4585		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4586		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4587		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4588		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4605	P	Kaliningrad	RUS	
4619		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4625		'Buzzer'	RUS	Russian Western Military District (after 1 Sept 2010)
4625		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District)
4627		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4632		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4635	P	Kaliningrad	RUS	
4635		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4663		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4667		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4670		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4673		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4701		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4705		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4707		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4710		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4713		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4740		'Buzzer'	RUS	Russian Western Military District (per 1 Sept

Freq.	callsign	location	ITU	remarks
4745		'Buzzer'	RUS	2010, ex Moscow District). Parasitic frequency Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4751		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4793.4		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Parasitic frequency
4828	P	Kaliningrad	RUS	
4848	P	Kaliningrad	RUS	
4878.9	P	Kaliningrad	RUS	
4899	P	Kaliningrad	RUS	
4961	V	Khiva	UZB	
4964	P	Kaliningrad	RUS	
5076	P	Kaliningrad	RUS	
5080	P	Kaliningrad	RUS	
5111	P	Kaliningrad	RUS	
5213	P	Kaliningrad	RUS	
5225	P	Kaliningrad	RUS	
5237.8	P	Kaliningrad	RUS	
5260	P	Kaliningrad	RUS	
5448		'Pip', Rostov-on-Don area	RUS	Russian Southern Military District. Day freq.
5462		'Squeaky wheel'	RUS	Russian Western Military District (per 1 Sept 2010, ex Leningradsky District)
5465.9	R	Izhevsk	RUS	Strategic Missile Troops
5466.1	R	Izhevsk	RUS	Strategic Missile Troops
5473.9		'Squeaky wheel'	RUS	Russian Western Military District (per 1 Sept 2010, ex Leningradsky District). Day freq.
5691	P	Kaliningrad	RUS	
5698.3	P	Kaliningrad	RUS	
5860	P	Kaliningrad	RUS	
5862	P	Kaliningrad	RUS	
5888.9	P	Kaliningrad	RUS	
5982	P	Kaliningrad	RUS	
6203	P	Kaliningrad	RUS	
6873	P	Kaliningrad	RUS	
6990.8		'Squeaky wheel'	RUS	Russian Western Military District (per 1 Sept 2010, ex Leningradsky District)
8007	A	Astrakhan	RUS	Unusual frequency
8492	P	Kaliningrad	RUS	
9116.2	A	Astrakhan	RUS	Unusual frequency
9250		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District). Harmonic
10307	F	Vladivostok	RUS	
11600		'Buzzer'	RUS	Russian Western Military District (per 1 Sept 2010, ex Moscow District)
14220.8	A	Astrakhan	RUS	Unusual frequency

Freq.	callsign	location	ITU	remarks
14372	C	Moscow	RUS	Modulated Beacon "C" 18.1//14372//14450 kHz
14450	C	Moscow	RUS	Modulated Beacon "C" 18.1//14372//14450 kHz
16932	P	Kaliningrad	RUS	
20127	F	Vladivostok	RUS	
2330.9	P	Kaliningrad	RUS	

HISTORIC AND INACTIVE BEACONS & CHANNEL MARKERS

Freq.	callsign	location	ITU	remarks
	Ch (---)	Unid location		
	Yu (..--)	Kizyl Orda	URS	
2321	R	Izhevsk	RUS	Strategic Missile Troops
2391	V	Khiva	UZB	
2547.8	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
2742.2	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
2813	N	Unid		
2842.8	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
3036	OB	Unid		
3043	OB	Unid		
3070.5	X	Unid location; not Prague		
3088	L	St. Petersburg	RUS	
3090	L	St. Petersburg	RUS	
3092	L	St. Petersburg	RUS	
3175	V	Khiva	UZB	
3195	R	Izhevsk	RUS	Strategic Missile Troops
3199	R	Izhevsk	RUS	Strategic Missile Troops
3202.8	L	Tirana	ALB	
3203.6	L	Tirana	ALB	
3204.2	L	Tirana	ALB	
3317	V	Khiva	UZB	
3322	R	Izhevsk	RUS	Strategic Missile Troops
3334.9	L	St. Petersburg	RUS	
3335.7	L	St. Petersburg	RUS	
3335.7	LT	St. Petersburg	RUS	Defective "L"
3336.2	L	St. Petersburg	RUS	
3339.6	L	St. Petersburg	RUS	
3345	L	St. Petersburg	RUS	
3415	OB	Unid	RUS	
3508	T	Dash. Unid location		
3533	W	Cuba	CUB	
3534	V	Khiva	UZB	
3564	C	Moscow	RUS	

Freq.	callsign	location	ITU	remarks
3628	V	Khiva	UZB	
3632.2	V	Khiva	UZB	
3635.5	U	Kholmsk and other locations	URS	Jammer related
3650		'Yelper'	RUS	
3658	V	Khiva	UZB	
3685.9	R	Izhevsk	RUS	Strategic Missile Troops
3686	R	Izhevsk	RUS	Strategic Missile Troops
3798.5	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
3814.8	I	Unid location		
4069.6	L	St. Petersburg	RUS	
4091.5	L	St. Petersburg	RUS	
4206	R	Izhevsk	RUS	Strategic Missile Troops
4301	S	Severomorsk	RUS	
4302	C	Moscow	RUS	
4315	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
4325	R	Izhevsk	RUS	Strategic Missile Troops
4424.5	L	St. Petersburg	RUS	
4446	V	Khiva	UZB	
4447.5	U	Kholmsk and other locations	URS	Jammer related
4469.1	L	St. Petersburg	RUS	
4469.6	L	St. Petersburg	RUS	
4498.5	V	Khiva	UZB	
4504	B	Khiva		Defective "V"
4504	V	Khiva	UZB	
4510	V	Khiva	UZB	
4545.3	K	Petropavlovsk Kamchatskiy	RUS	
4555.8	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
4557	CH	Unid location		
4558	R	Izhevsk	RUS	Strategic Missile Troops
4575	V	Khiva	UZB	
4644	V	Khiva	UZB	
4646	V	Khiva	UZB	
4775.5	U	Kholmsk and other locations	URS	Jammer related
4828	R	Izhevsk	RUS	Strategic Missile Troops
4878	V	Khiva	UZB	
5041	F	Vladivostok	RUS	
5068	V	Khiva	UZB	
5122	V	Khiva	UZB	
5137.9	S	Sevoromorsk	RUS	
5141	V	Khiva	UZB	
5154	R	Izhevsk	RUS	Strategic Missile Troops
5200	R	Izhevsk	RUS	Strategic Missile Troops
5203.6	L	St. Petersburg	RUS	
5243	V	Khiva	UZB	

Freq.	callsign	location	ITU	remarks
5306	C	Moscow	RUS	
5308	O	Moscow	URS	
5308.5	L	St. Petersburg	RUS	
5309.5	Z	Mukachevo (Ukraine)	URS	
5340	V	Khiva	UZB	
5342	V	Khiva	UZB	
5358	V	Khiva	UZB	
5376.0	U	Kholmsk and other locations	URS	Jammer related
5383.5	V	Khiva	UZB	
5422	R	Izhevsk	RUS	Strategic Missile Troops
5471	E	Unid		
5568.5	U	Kholmsk and other locations	URS	Jammer related
5731	R	Izhevsk	RUS	Strategic Missile Troops
5807.7	V	Khiva	UZB	
5873	V	Khiva	UZB	
5920	K	Petropavlovsk Kamchatskiy	RUS	
5922	X	Prague	CZE	
6245.5	U	Kholmsk and other locations	URS	Jammer related
6258	S	Sevoromorsk	RUS	Unusual frequency
6389.9	R	Izhevsk	RUS	Strategic Missile Troops
6430	V	Khiva	UZB	
6498	V	Khiva	UZB	
6550	D	Sevastopol	UKR	
6672.4	L	Tirana	ALB	Harmonic
6802.5	J	Unid location		
6803.5	G	Unid location		
6806	Q	Unid location	RUS	
6809	V	Khiva	UZB	
6861	V	Khiva	UZB	
6864.0	U	Kholmsk and other locations	URS	Jammer related
6879	V	Khiva	UZB	
6925	V	Khiva	UZB	
6928	V	Khiva	UZB	
6934	T	Dash. Unid location		
6944	T	Unid		
6985.5	U	Kholmsk and other locations	URS	Jammer related
6996.5	V	Khiva	UZB	
7002	V	Khiva	UZB	
7027	V	Khiva	UZB	
7027.5	V	Khiva	UZB	
7038.8	V	Khiva	UZB	Harmonic?
7064.4	H	Unid location		
7102	V	Khiva	UZB	
7383	N	Unid		
7395	U	Kholmsk and other locations	URS	Jammer related
7395.5	U	Kholmsk and other locations	URS	Jammer related
7423.0	U	Kholmsk and other locations	URS	Jammer related

Freq.	callsign	location	ITU	remarks
7440	V	Khiva	UZB	
7452	R	Izhevsk	RUS	Strategic Missile Troops
7550	R	Izhevsk	RUS	Strategic Missile Troops
7569.5	U	Kholmsk and other locations	URS	Jammer related
7630	V	Khiva	UZB	
7677.5	U	Kholmsk and other locations	URS	Jammer related
7825	V	Khiva	UZB	
8000	C	Moscow	RUS	Unusual frequency
8103.5	V	Khiva	UZB	
8136.0	U	Kholmsk and other locations	URS	Jammer related
8165	T	Dash. Unid location		
8183	L	Tirana	ALB	Harmonic
8306	F	Gdynia ???		Operates only during daytime. Irregular. Possibly event driven
8442	AS (-...)	Unid		AS sent as one character
8543	V	Khiva	UZB	
8669.5	U	Kholmsk and other locations	URS	Jammer related
8670.5	U	Kholmsk and other locations	URS	Jammer related
8682	M	Magadan	URS	
8698	B	Arkhangelsk	URS	
8810	C	Moscow	RUS	Unusual frequency
8810	D	Sevastopol	UKR	Unusual frequency
8810	S	Sevoromorsk	RUS	Unusual frequency
8918.0	U	Kholmsk and other locations	URS	Jammer related
9001.6	Y	Unid location		
9057.5	U	Kholmsk and other locations	URS	Jammer related
9090	I	Unid location		6 + 16 January 2004
9111	W	Unid location		probably not related to the old 'W' stations
9160	Ya (-.-)	Unid location		
9161	V	Khiva	UZB	
9188.5	I	Unid location		6 + 16 January 2004
9225	V	Khiva	UZB	
9313.5	U	Kholmsk and other locations	URS	Jammer related
9322	X	Prague	CZE	
10008.6	L	Tirana	ALB	Harmonic
10126.5	EO	Unid		
10171.9	S	Sevoromorsk	RUS	Unusual frequency
10202	V	Khiva	UZB	
10215.0	U	Kholmsk and other locations	URS	Jammer related
10272.2	F	Vladivostok	RUS	Unusual frequency
10285.0	U	Kholmsk and other locations	URS	Jammer related
10308	C	Moscow	RUS	
10420	V	Khiva	UZB	
10470	T	Dash. Unid location		
10528	S	Sevoromorsk	RUS	Unusual frequency

Freq.	callsign	location	ITU	remarks
10612	C	Moscow	RUS	
10743.9	S	Severomorsk	RUS	Off frequency; heard on 16-5-2006
11000	D	Sevastopol	UKR	Unusual frequency
11073	V	Khiva	UZB	
11406	V	Khiva	UZB	
11526.0	U	Kholmsk and other locations	URS	Jammer related
12149.5	I	Unid location		
12158	T	Dash. Unid location		
12184.5	U	Kholmsk and other locations	URS	Jammer related
12329.0	U	Kholmsk and other locations	URS	Jammer related
13527	Y	Unid location		
13539	V	Khiva	UZB	
13636	C	Moscow	RUS	
13871	D	Sevastopol	UKR	Unusual frequency
13872	C	Moscow	RUS	Unusual frequency
14078.3	F	Vladivostok	RUS	Unusual frequency
14262	V	Khiva	UZB	
15064.7	V	Khiva	UZB	Harmonic?
15655.0	U	Kholmsk and other locations	URS	Jammer related
15700.5	U	Kholmsk and other locations	URS	Jammer related
15705.0	U	Kholmsk and other locations	URS	Jammer related
16989.8	S	Severomorsk	RUS	Unusual frequency
18115.0	U	Kholmsk and other locations	URS	Jammer related
20126.5	EO or J	Unid location		
20428.5	U	Kholmsk and other locations	URS	Jammer related
21070.6	V	Khiva	UZB	
23921.9	C	Moscow	RUS	Unusual frequency
24371.0	U	Kholmsk and other locations	URS	Jammer related
24409.5	U	Kholmsk and other locations	URS	Jammer related
24657.0	U	Kholmsk and other locations	URS	Jammer related
24982.0	U	Kholmsk and other locations	URS	Jammer related
25250	R	Izhevsk	RUS	Strategic Missile Troops
26170	L	Unid	RUS	

INACTIVE OR FAULTY CLUSTER BEACONS

Freq.	callsign	location	ITU	remarks
3594	AAINNM	Unid		Defective cluster beacon?
3594	E	Unid		Defective cluster beacon?
3594	T	Unid		Defective cluster beacon?
3594	TEEEEE	Unid		Defective cluster beacon?
3594.8	M	Magadan	RUS	March-July 2004
4558	AAINNM	Unid		Defective cluster beacon?
4558	E	Unid		Defective cluster beacon?
4558	H	Unid		Defective cluster beacon?
4558	T	Unid		Defective cluster beacon?
4558	TEEEEE	Unid		Defective cluster beacon?
5154	E	Unid		Defective cluster beacon?
5154	TA	Unid		Defective cluster beacon?
5154	TW	Unid		Defective cluster beacon?
5154.8	M	Magadan	RUS	March-July 2004
5155.8	M	Magadan	RUS	Off frequency
7039	AAINNM	Unid		Defective cluster beacon?
7039	E	Unid		Defective cluster beacon?
7039	T	Unid		Defective cluster beacon?
7039	TEEEEE	Unid		Defective cluster beacon?
8495	AAINNM	Unid		Defective cluster beacon?
8495	E	Unid		Defective cluster beacon?
8495	T	Unid		Defective cluster beacon?
8495	TEEEEE	Unid		Defective cluster beacon?
10871.6	U	Unid		Defective cluster beacon?
10872	AAINNM	Unid		Defective cluster beacon?
10872	E	Unid		Defective cluster beacon?
10872	MMMAMA	Unid		Defective cluster beacon?
10872	T	Unid		Defective cluster beacon?
10872	TEEEEE	Unid		Defective cluster beacon?
13528	AAINNM	Unid		Defective cluster beacon?
13528	C	Moscow	RUS	
13528	CK TNK	Unid		Defective cluster beacon?
13528	E	Unid		Defective cluster beacon?
13528	MMMAMA	Unid		Defective cluster beacon?
13528	T	Unid		Defective cluster beacon?
13528	TEEEEE	Unid		Defective cluster beacon?
16332	E	Unid		Defective cluster beacon?
16332	MMMAMA	Unid		Defective cluster beacon?
16332	TEEEEE	Unid		Defective cluster beacon?
17015.9	S	Severomorsk	RUS	Old cluster frequency
17016	C	Moscow	RUS	Old cluster frequency
17017.2	F	Vladivostok	RUS	Old cluster frequency
17017.2	TA	Unid		Old cluster frequency, Defective cluster beacon?
17017.2	UE	Unid		Old cluster frequency. Defective cluster beacon?

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