



INTERNATIONALE GESELLSCHAFT FÜR ELEKTROSMOG-FORSCHUNG IGEF LTD
INTERNATIONAL ASSOCIATION FOR ELECTROSMOG-RESEARCH IGEF LTD
IGEF CERTIFICATION CENTRE

REPORT

on the biophysical testing
of the SPIRO CARD LEVEL 2; card size 5 x 8 cm in PVC
regarding the protective effect with electromagnetic radiation
e.g. through Wi-Fi or WLAN (Wireless Local Area Network), mobile phone transmitters,
mobile phones, Smartphones, DECT cordless telephones,
radio and television broadcasting transmitters
and other wireless communication systems.

Customer:

NOXTAC Technologies; Sun Plaza; 401 M; Oranjestad; Aruba; Dutch Caribbean

Report generation date: 24th April 2014

1. Problem description

The diverse use of modern technology is not possible without electrical power and high frequency electromagnetic radiation. A wide range of equipment and systems have been produced for the generation and distribution of the electrical energy; power stations, transformer stations, high and medium-voltage lines, supply cables - right through to our domestic installation. This low frequency network for the supply of power generates electrical and magnetic fields, and therefore a significant proportion of the electromagnetic environmental pollution, which is referred to in general as electrosmog. All electrical and electronic devices also generate electrosmog.

Today, wireless networks are utilised in countless applications, incl. in industrial production, logistics and medical engineering. Private use of these technologies is also commonplace: Mobile end devices such as mobile phones and PDAs are constant companions for many people. Cordless telephones, Bluetooth, Wireless LANs, radio-controlled garage door openers, remote-controlled devices and machines are all based on wireless communication systems. It is conceivable that the use of wireless network technologies will increase significantly in the future, and that new application fields will open up.

Powerful transmitters radiate electromagnetic waves for mobile telephony, radio and television, radar, military surveillance, data transfer, directional radio, etc.: High frequency electrosmog that we are no longer able to avoid.

At the end of May 2011 the World Health Organisation WHO classified high frequency radiation as "possibly carcinogenic". To this end an expert group met at the International Agency for Research on Cancer IARC in Lyon. 31 specialists from 14 countries came together in Lyon to evaluate "almost all available scientific evidence".

Pollution caused by high frequency electromagnetic radiation results in complaints including poor quality of sleep, a loss of vitality, headaches, poor concentration, tinnitus, decreased physical and psychological resilience, as well as an increased strain on the heart and circulatory system. According to the results of international research the list also encompasses serious illnesses such as an increased risk of cancer, genetic alterations and changes to the immune system and the central nervous system.

Today's typical radiation level technically generated through radio communication in cities exceeds the natural vital electromagnetic background radiation by tens of millions and even billions.

This development has led to us all experiencing constant exposure to electromagnetic environmental pollution everywhere, in a form and intensity that has never existed before. The danger of this new type of environmental pollution lies in the fact that our body's own information system also works with natural electromagnetic signals - although the energy level of these is a million times weaker! This flooding by technical frequencies electromagnetic fields and radiation therefore causes numerous biological disturbances in nature, as well as in animals and humans, through the coupling of technical electromagnetic signals in the natural environment and in the information system of our cells, bodily systems and organs.

Each person reacts differently to the electromagnetic pollution that occurs within their environment. This is dependent on the one hand on the intensity and duration of the and modulations that arise, and the individually resultant combination effects. It also depends

on the person's disposition, any possible pre-existing conditions and existing damage to health, their immune status and the ability of their organism to compensate for any strains and stresses that arise, as well as their resistance to external influences.

Despite the health risks posed by high frequency electromagnetic radiation, which have been proven by numerous research findings, it is not possible to imagine today's society functioning without the use of electrical and electronic devices such as mobile phones, as well as the mobile telephony transmitters that these require. Understandably, the considerations of those affected therefore tend towards how it is possible to better protect oneself against the effects of electromagnetic radiation.

The objective of the following investigation was therefore to assess whether and to what extent the SPIRO CARD LEVEL 2 is suitable for providing protection against the harmful effects of high frequency electromagnetic radiation and electrosmog.

2. Investigation of the SPIRO CARD LEVEL 2 with respect to its protective effect against electromagnetic radiation, e.g. by mobile phone transmitters, Wi-Fi or WLAN (Wireless Local Area Network), mobile phones, Smartphones, cordless telephones, radio and television broadcasting transmitters and other wireless communication systems.

For the purpose of our investigation documented here, the SPIRO CARD LEVEL 2 was tested by ten test subjects of both genders in various test situations, with respect to its protective effect against health-endangering disturbances caused by high frequency electromagnetic radiation and electrosmog. The test subjects selected were all persons who - in their own opinion - react sensitively to electrosmog.

Explanations regarding the selection of the heart rate variability measurement as a diagnostic system for this investigation

The vegetative nervous system dynamically controls the internal balance of the organism, depending on the momentary external and internal loads. The heart reacts to stimuli that are consciously perceived and to consciously imperceptible stimuli, which are generated for example by electromagnetic ambient radiation and act on the vegetative nervous system. The heart rate variability of a healthy person is essentially based on the optimum interplay between the sympathetic and the parasympathetic components of the vegetative nervous system.

The heart is an electromagnetic power source of 2.4 Watts, the oscillations of which can be measured in the tiniest cell of the organism. All rhythms of life are reflected in the heartbeat. If these rhythms are in harmony, in coherence, then we experience a sense of well-being. The measurable primary variable of this information chain is the heart rate variability (HRV), which is the most important parameter for the accurate assessment of well-being and vitality.

The heart rate variability is defined as the ability of an organism (human, mammal) to alter the frequency of the heart's rhythm. Even when in a resting state, spontaneous changes arise in the temporal interval between two heartbeats. A healthy organism constantly adjusts the heart rate to the momentary requirements via autonomous physiological regulatory pathways. Physical demands and psychological stresses are therefore known to generally cause an increase in the heart rate, which usually returns to the normal rate when the strain or stress is alleviated. A greater ability to adjust to

stresses and strains therefore exists if the heart rate variability is higher. In contrast, in the event of chronic stress the constantly high tension results in both of these characteristics being restricted to a greater or lesser degree, and therefore being reduced.

Debilitating or harmful effects, such as those from high frequency mobile telephony radiation and low frequency electrosmog, are commonly recognised by the nervous system as vital threats. If the organism is subjected to constant loads by interference fields then it is not able to normalise these stress parameters and they lead to a reduction in the heart rate variability; i.e. the ability of the organism to adjust to changing parameters within the environment is reduced. As a result of this interrelation, the protective effect of a product or an action can be verified by measuring the heart rate variability.

The spontaneous stimulation of the vegetative nervous system by electromagnetic radiation and energy fields generally lies well below the threshold value that is physically perceptible. However, the sensitive measuring equipment of modern biofeedback systems also logs the tiniest reactions of the vegetative nervous system control, in particular via the parameters of heart rate variability. In scientific research, the reproducibility of the results of modern measuring devices for heart rate variability has also been confirmed with short testing time frames.

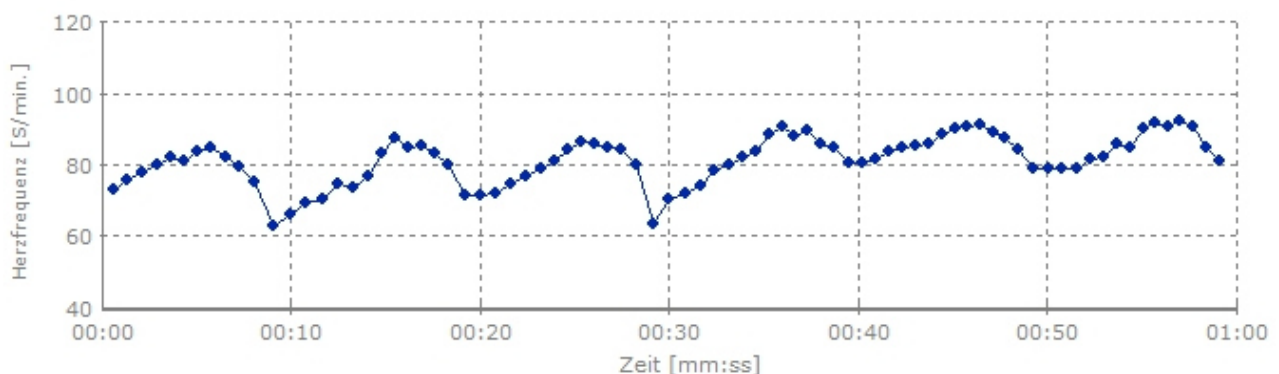
Measurement of the heart rate variability was therefore selected as a diagnostic system, in order to assess whether the energetic information field of the SPIRO CARD LEVEL 2 leads to an improvement in the heart rate variability of the test subjects, and is therefore able to contribute to an increase in the individual ability of the biological system to adjust.

The use of the SPIRO CARD LEVEL 2 with health-endangering disturbances due to high frequency electromagnetic radiation and electrosmog should therefore lead to a verifiable improvement in the heart rate variability, whilst also promoting the heart and circulatory system processes and reducing the work of the vegetative nervous system required in order to maintain the internal balance.

3. Biophysical investigation of the energetic effect of the SPIRO CARD LEVEL 2 in conjunction with the biofeedback system Stress Pilot Plus.

In this study, the change in the physiological signals of a test subject group was logged as feedback from the vegetative nervous system to the bioenergetic information of the SPIRO CARD LEVEL 2 through the measurement of the heart rate variability and this data was evaluated according to mathematical-statistical processes.

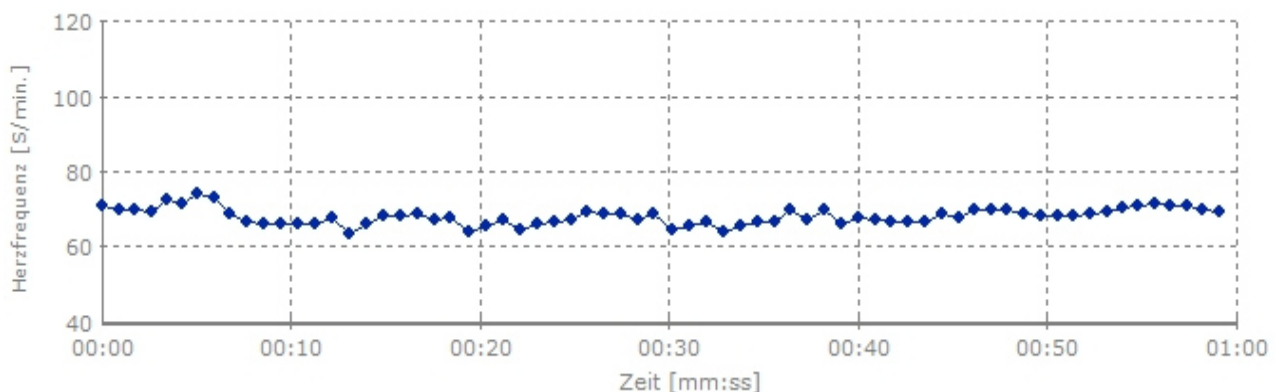
Optimum regulation of the heart rate (example)



During this measurement of the heart rate variability, the breathing and heartbeat balance with each other in the case of well-functioning neurovegetative regulation. The heart rate oscillates up and down in harmony with the breathing rhythm, in a sinusoidal form. The greater the fluctuation of the heart rate within the breathing cycle (significant respiratory sinus arrhythmia; RSA), the better the neurovegetative regulation in general terms.

The function of the autogenous nervous system lies in adjusting the basic regulation of the biological system to changing load parameters both internally and externally. Health, well-being and functional vitality are inextricably linked with the regulation processes and the rhythms of life, which are reflected in the heartbeat.

Restricted regulation of the heart rate (example)



Neurovegetative regulation disturbances are expressed in this measurement through a minimal or lack of adjustment of the heart rate to the breathing rhythm. The heart rate only oscillates in harmony with the breathing cycle to a very slight degree, and in some instances not at all. With increasing age, the ability to regulate also diminishes. The results of the heart rate variability measurement are therefore related to the respective age group.

3.1. Selection of the test subjects and selected measurement log

10 test subjects of both genders who are exposed to a customary modern level of electromagnetic radiation were selected for participation in this biophysical investigation. The ages of the test subjects range between 10 and 76 years. The test subjects selected were all persons who - in their own opinion - react sensitively to electrosmog. The heart rate variability measurements were taken in the apartments or at the workplaces of the test subjects. The measurements were taken in advance of using the SPIRO CARD LEVEL 2 and then once again after a few days spent using the SPIRO CARD LEVEL 2.

3.2. Selected measuring device

The biofeedback system *Stress Pilot Plus* was used in order to biophysically test the energetic effects of the SPIRO CARD LEVEL 2. The values of the last respective minute of each period were drawn upon for the statistical evaluation. The test results were compared with standard values, which were obtained from a comparable normal control group according to age and gender.

The varying ability of the test subjects to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog is

determined by applying the percentage value of the poorest values derived from a comparison group. Accordingly, 0% is the lowest value and 100% is highest theoretical value indicating the ability of the test subject to regulate the heart rate and adjust the vegetative nervous system to the existing disturbances caused by electrosmog.

3.3. Explanation of the measurement log parameters

RSA = The respiratory sinus arrhythmia (RSA) describes the fluctuation of the heart rate in harmony with the breathing rhythm. Upon inhalation the heart rate rises. When the breath is exhaled the heart rate decreases.

RMSSD = (Root mean square of successive differences). The RMSSD equates to the square root of the squared differences of successive RR intervals. It is less susceptible to trends than the variation coefficient. The RMSSD enables a statement regarding the variation of successive RR intervals.

Average heart rate = The average heart rate is the average number of beats of the heart per minute.

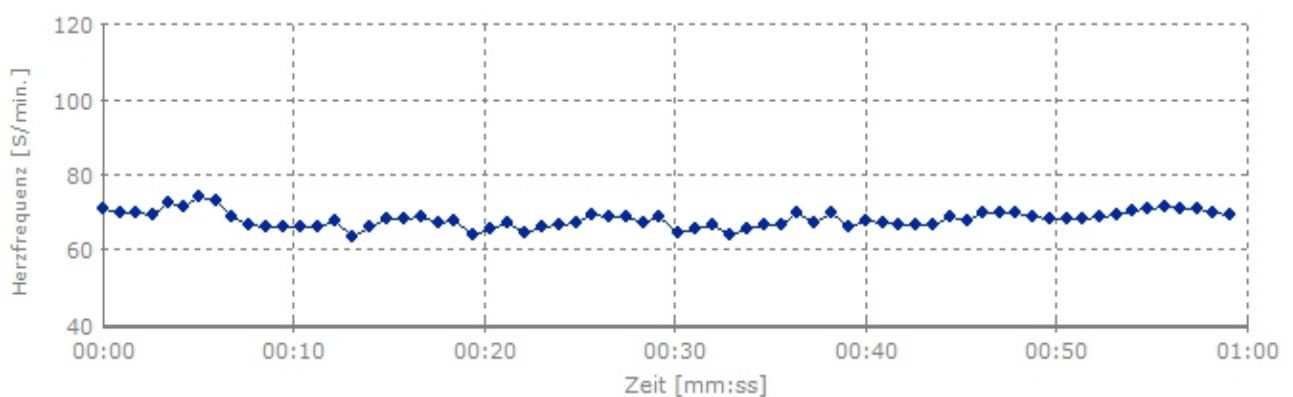
Standard deviation = The size of the standard deviation is dependent on the number of RR intervals tested within the test series. The RR interval is the duration of one heartbeat.

Variation coefficient = The variation coefficient is calculated by dividing the standard deviation by the average length of the RR interval. This standardisation enables the application of the variation coefficient as a statistical benchmark. The variation coefficient facilitates an assessment of the long-term variation in the time series.

3.4 Measurement results

Test subject 1

Regulation of the heart rate without SPIRO CARD LEVEL 2

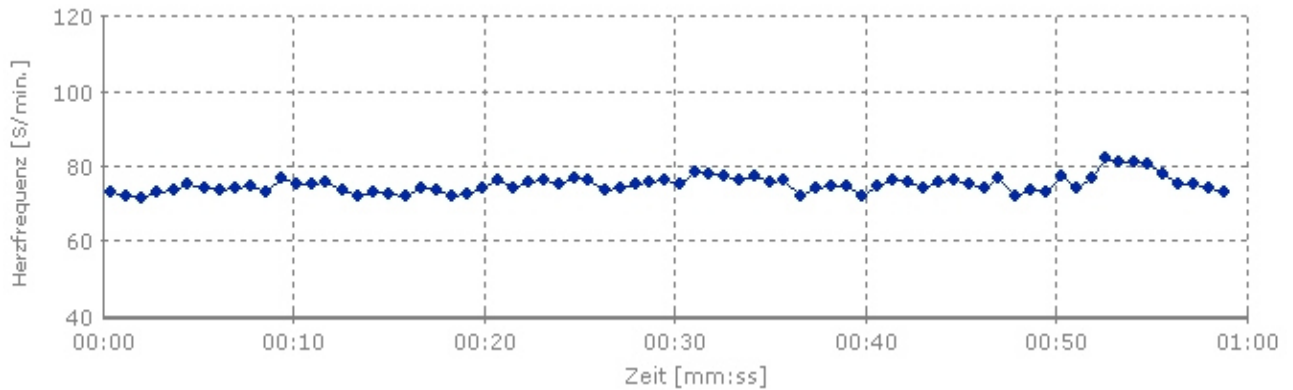


Measurement results without SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	5,19	bpm	5,65%
RMSSD	22,69	ms	
Average heart rate	67,9	bpm	
Standard deviation	2,23	bpm	
Variation coefficient	2,87	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 5,65% of the theoretical maximum value of 100%.

Regulation of the heart rate after 3 days using SPIRO CARD LEVEL 2

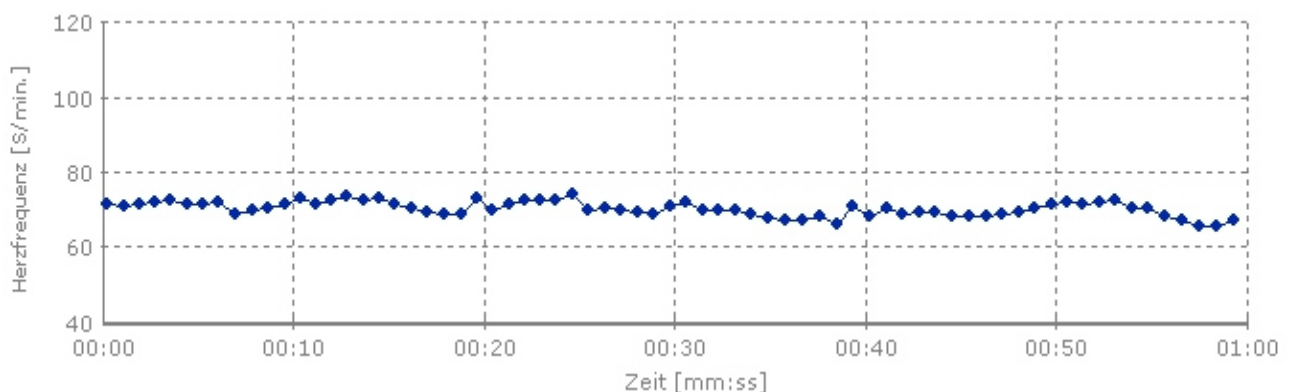


Measurement results after 3 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	5,15	bpm	5,68%
RMSSD	19,69	ms	
Average heart rate	75,8	bpm	
Standard deviation	2,35	bpm	
Variation coefficient	2,89	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 5,68% of the theoretical maximum value of 100%.

Regulation of the heart rate after 7 days using SPIRO CARD LEVEL 2

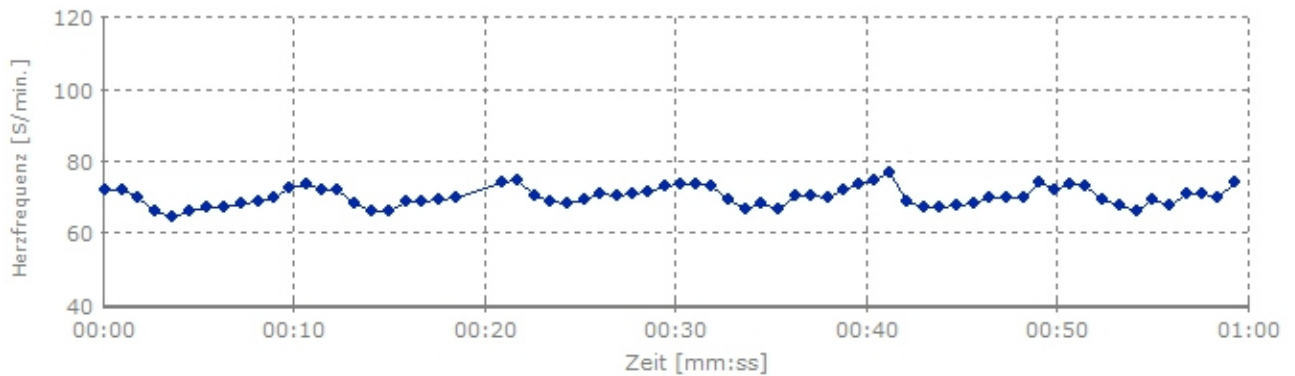


Measurement results after 7 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	5,34	bpm	5,85%
RMSSD	19,89	ms	
Average heart rate	76,9	bpm	
Standard deviation	2,81	bpm	
Variation coefficient	2,91	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 5,85% of the theoretical maximum value of 100%.

Regulation of the heart rate after 12 days using SPIRO CARD LEVEL 2

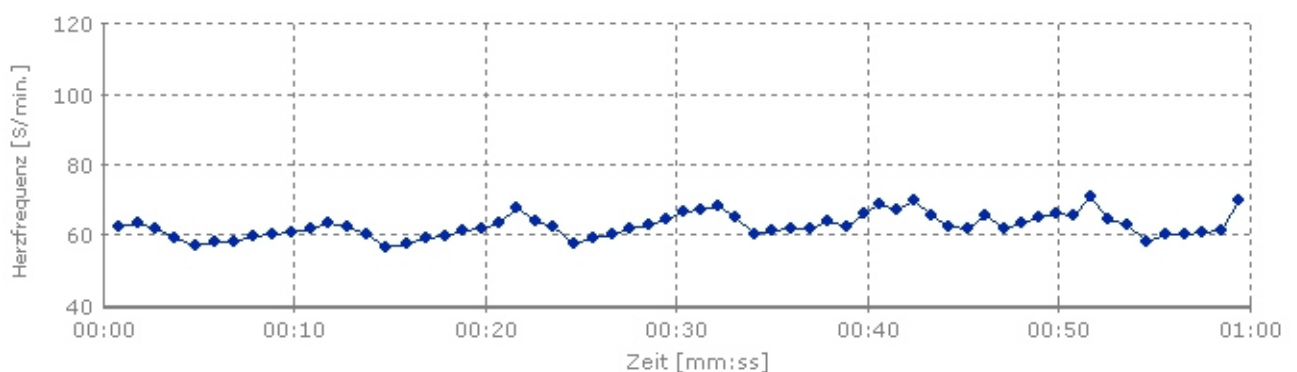


Measurement results after 12 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	7,62	bpm	8,39%
RMSSD	36,29	ms	
Average heart rate	72,8	bpm	
Standard deviation	4,39	bpm	
Variation coefficient	6,29	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 8,39% of the theoretical maximum value of 100%.

Regulation of the heart rate after 16 days using SPIRO CARD LEVEL 2

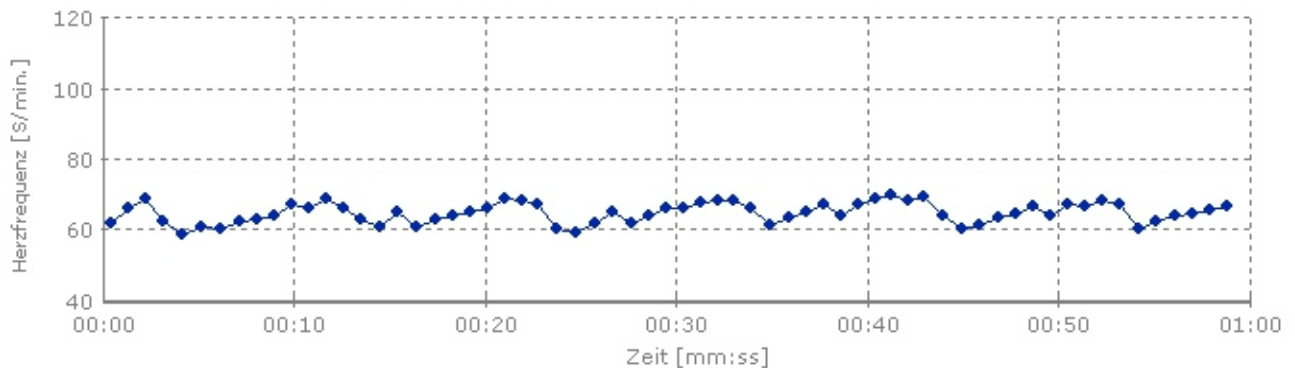


Measurement results after 16 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,39	bpm	11,17%
RMSSD	42,81	ms	
Average heart rate	62,9	bpm	
Standard deviation	3,41	bpm	
Variation coefficient	5,31	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 11,17% of the theoretical maximum value of 100%.

Regulation of the heart rate after 20 days using SPIRO CARD LEVEL 2

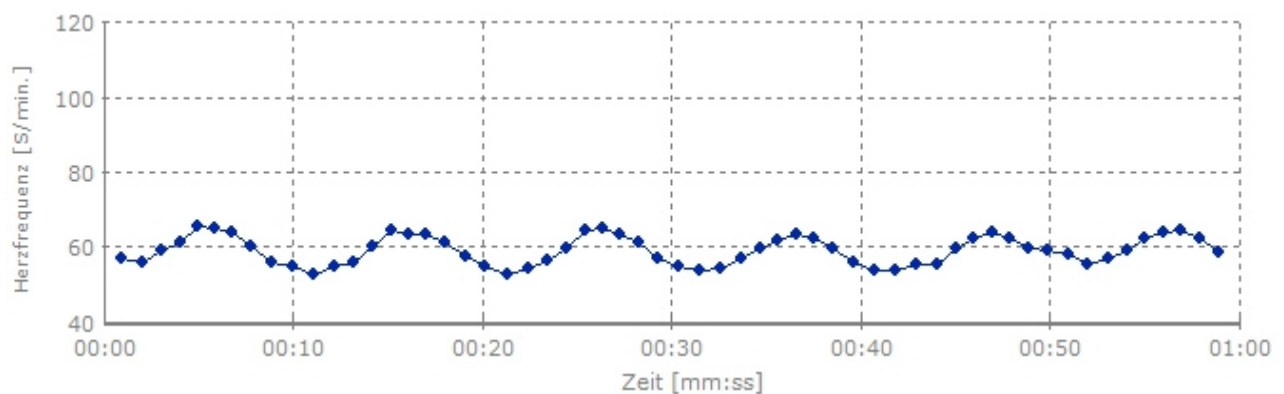


Messergebnisse after 20 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	9,91	bpm	14,83%
RMSSD	39,29	ms	
Average heart rate	64,9	bpm	
Standard deviation	2,79	bpm	
Variation coefficient	4,13	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 14,83% of the theoretical maximum value of 100%.

Regulation of the heart rate after 24 days using SPIRO CARD LEVEL 2



Measurement results after 24 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	10,77	bpm	16,22%
RMSSD	43,24	ms	
Average heart rate	59,9	bpm	
Standard deviation	3,78	bpm	
Variation coefficient	6,41	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 16,22% of the theoretical maximum value of 100%.

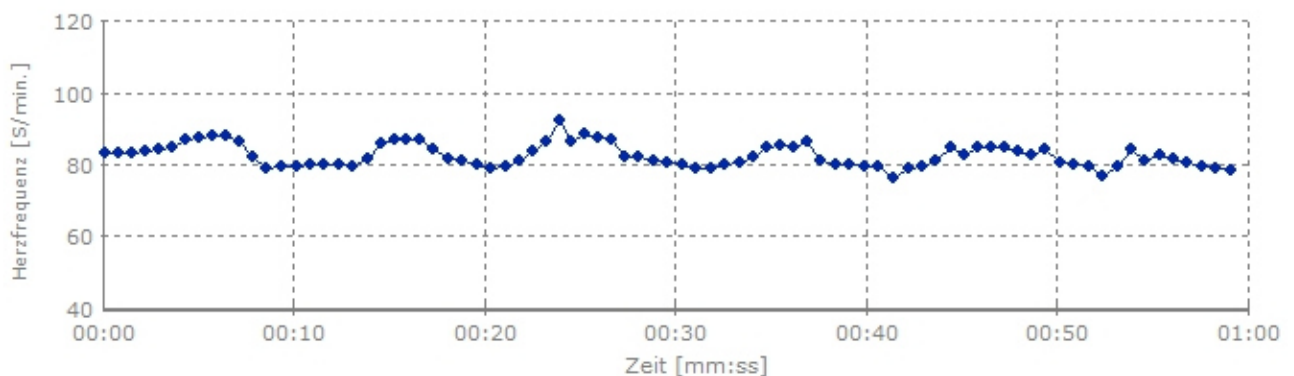
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2: 5,65%
 after 3 days using SPIRO CARD LEVEL 2: 5,68%
 after 7 days using SPIRO CARD LEVEL 2: 5,85%
 after 12 days using SPIRO CARD LEVEL 2: 8,39%
 after 16 days using SPIRO CARD LEVEL 2: 11,17%
 after 20 days using SPIRO CARD LEVEL 2: 14,38%
 after 24 days using SPIRO CARD LEVEL 2: 16,22%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 2

Regulation of the heart rate without SPIRO CARD LEVEL 2

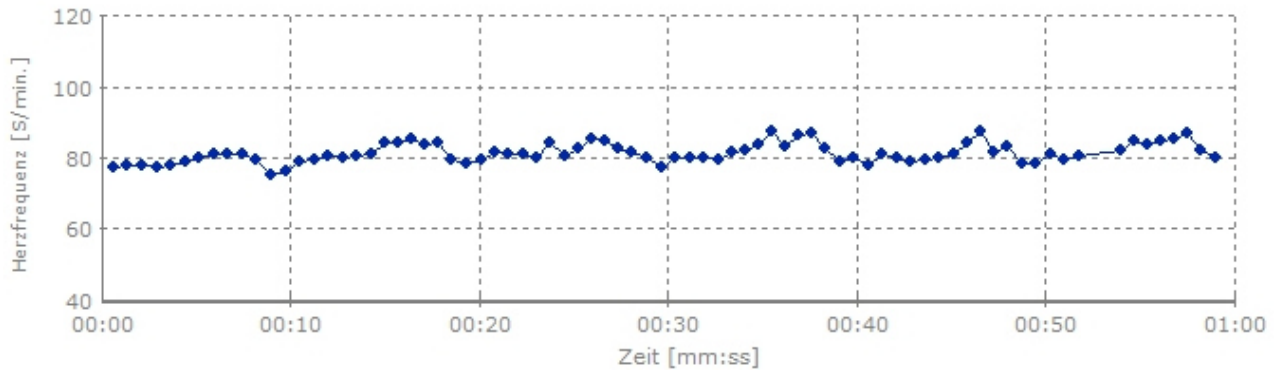


Measurement results without SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,24	bpm	23,86%
RMSSD	17,94	ms	
Average heart rate	82,0	bpm	
Standard deviation	3,11	bpm	
Variation coefficient	3,81	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 23,86% of the theoretical maximum value of 100%.

Regulation of the heart rate after 2 days using SPIRO CARD LEVEL 2

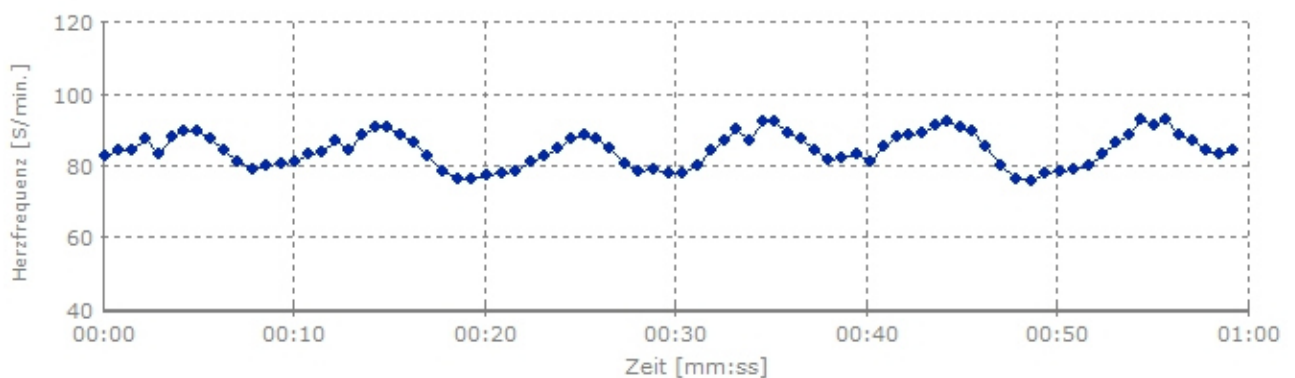


Measurement results after 2 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,35	bpm	24,10%
RMSSD	19,67	ms	
Average heart rate	81,7	bpm	
Standard deviation	2,71	bpm	
Variation coefficient	3,41	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 24,10% of the theoretical maximum value of 100%.

Regulation of the heart rate after 6 days using SPIRO CARD LEVEL 2

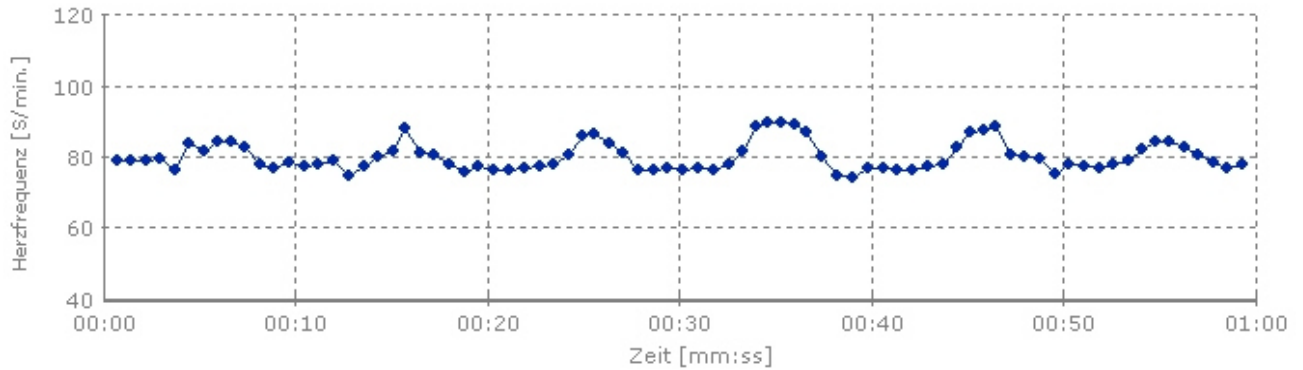


Measurement results after 6 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	14,30	bpm	41,23%
RMSSD	21,39	ms	
Average heart rate	84,7	bpm	
Standard deviation	4,55	bpm	
Variation coefficient	5,47	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 41,23% of the theoretical maximum value of 100%.

Regulation of the heart rate after 10 days using SPIRO CARD LEVEL 2



Measurement results after 10 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	13,12	bpm	35,17%
RMSSD	26,11	ms	
Average heart rate	80,4	bpm	
Standard deviation	4,09	bpm	
Variation coefficient	5,11	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 35,17% of the theoretical maximum value of 100%.

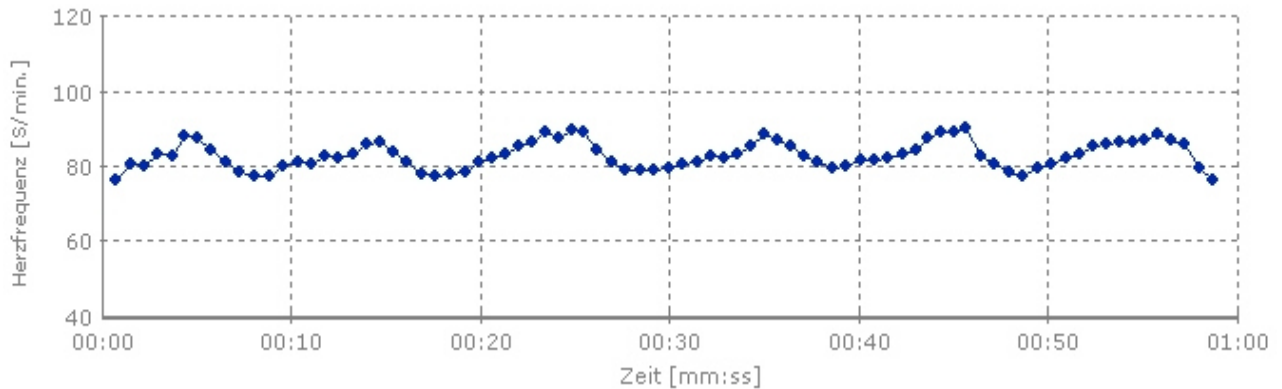
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 23,86%
- after 2 days using SPIRO CARD LEVEL 2: 24,10%
- after 6 days using SPIRO CARD LEVEL 2: 41,23%
- after 10 days using SPIRO CARD LEVEL 2: 35,17%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 3

Regulation of the heart rate without SPIRO CARD LEVEL 2

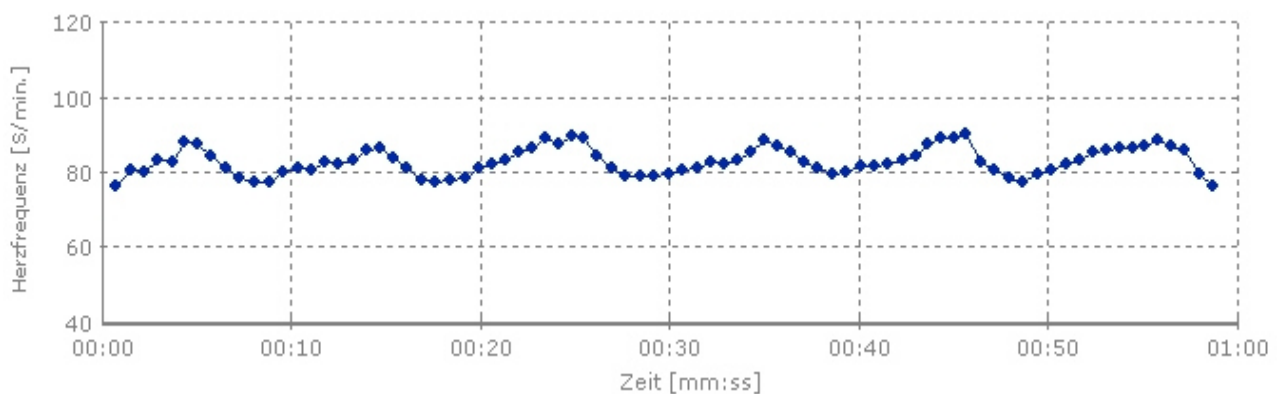


Measurement results without SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	10,42	bpm	48,51%
RMSSD	41,19	ms	
Average heart rate	82,1	bpm	
Standard deviation	3,69	bpm	
Variation coefficient	5,29	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 48,51% of the theoretical maximum value of 100%.

Regulation of the heart rate after 4 days using SPIRO CARD LEVEL 2

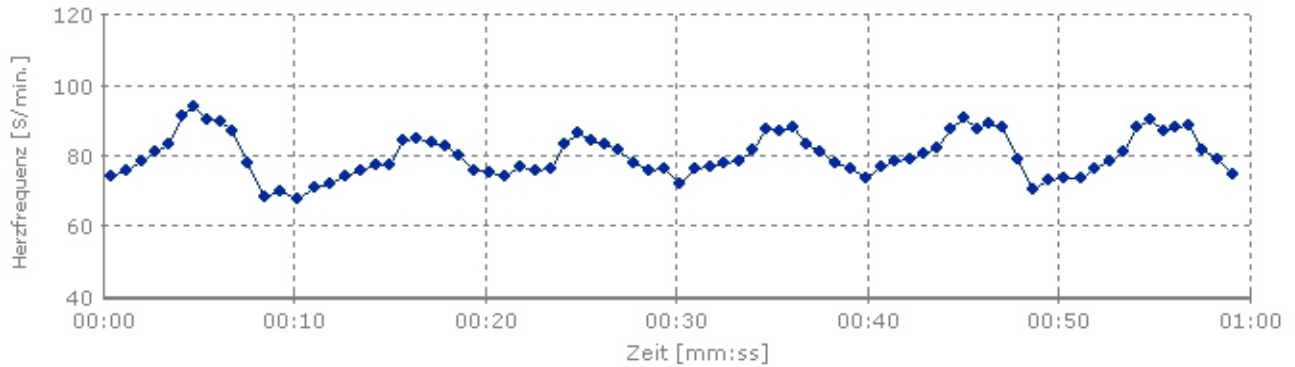


Measurement results after 4 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	12,22	bpm	52,52%
RMSSD	33,51	ms	
Average heart rate	79,7	bpm	
Standard deviation	6,22	bpm	
Variation coefficient	7,31	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 52,52% of the theoretical maximum value of 100%.

Regulation of the heart rate after 10 days using SPIRO CARD LEVEL 2

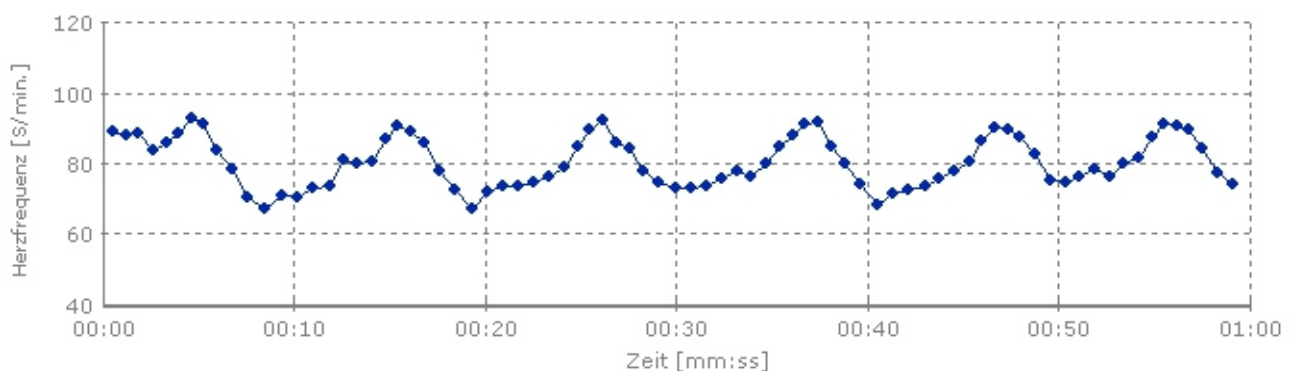


Measurement results after 10 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	15,21	bpm	58,44%
RMSSD	33,59	ms	
Average heart rate	80,4	bpm	
Standard deviation	6,15	bpm	
Variation coefficient	7,67	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 58,44% of the theoretical maximum value of 100%.

Regulation of the heart rate after 14 days using SPIRO CARD LEVEL 2



Measurement results after 14 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	21,87	bpm	71,12%
RMSSD	37,44	ms	
Average heart rate	80,2	bpm	
Standard deviation	7,56	bpm	
Variation coefficient	8,77	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 71,12% of the theoretical maximum value of 100%.

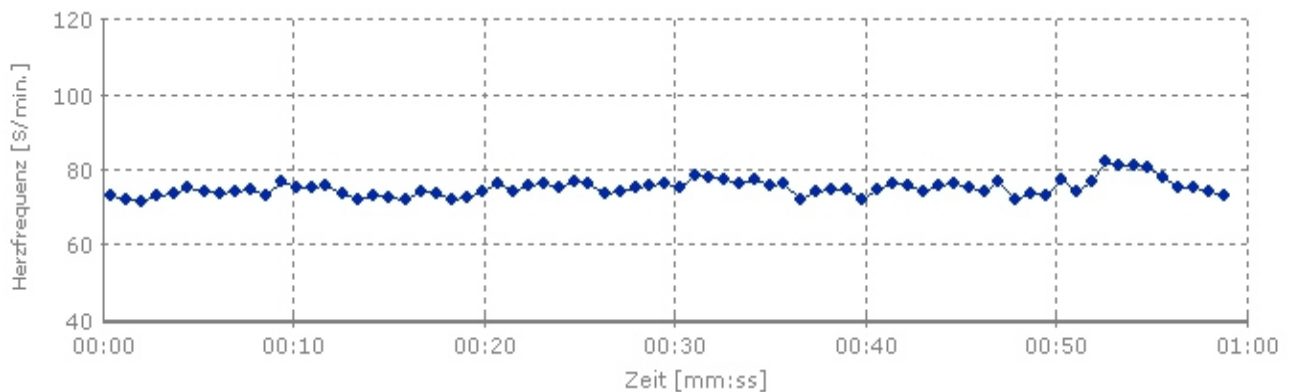
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2: 48,51%
 after 4 days using SPIRO CARD LEVEL 2: 52,52%
 after 10 days using SPIRO CARD LEVEL 2: 58,44%
 after 14 days using SPIRO CARD LEVEL 2: 71,12%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 4

Regulation of the heart rate without SPIRO CARD LEVEL 2

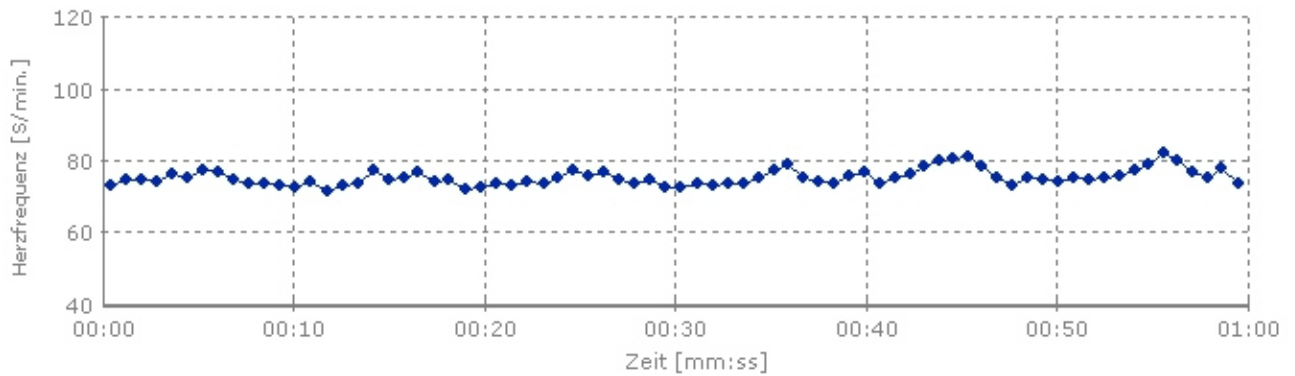


Measurement results without SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	5,13	bpm	5,68%
RMSSD	19,65	ms	
Average heart rate	75,5	bpm	
Standard deviation	2,31	bpm	
Variation coefficient	2,92	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 5,68% of the theoretical maximum value of 100%.

Regulation of the heart rate after 4 days using SPIRO CARD LEVEL 2

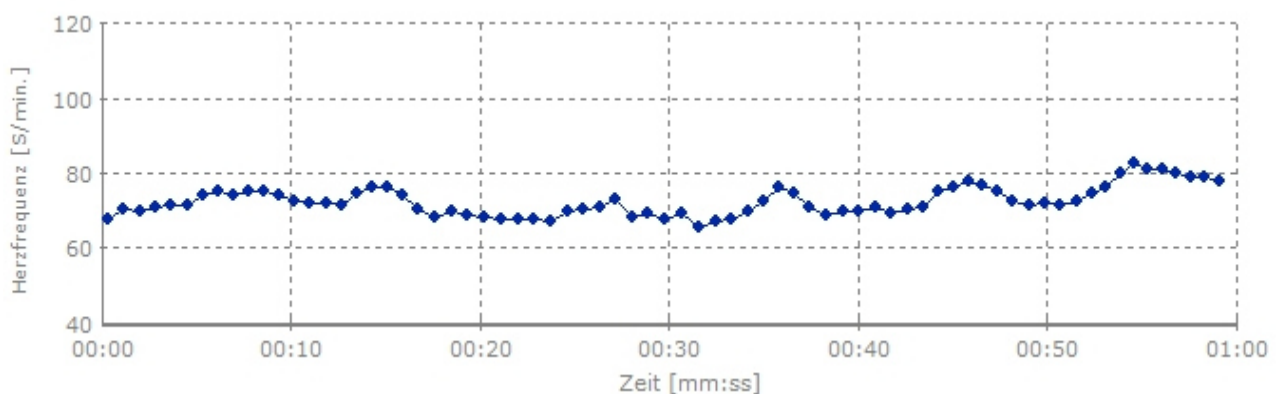


Measurement results after 4 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	6,31	bpm	6,91%
RMSSD	18,71	ms	
Average heart rate	75,2	bpm	
Standard deviation	2,31	bpm	
Variation coefficient	2,91	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 6,91% of the theoretical maximum value of 100%.

Regulation of the heart rate after 8 days using SPIRO CARD LEVEL 2

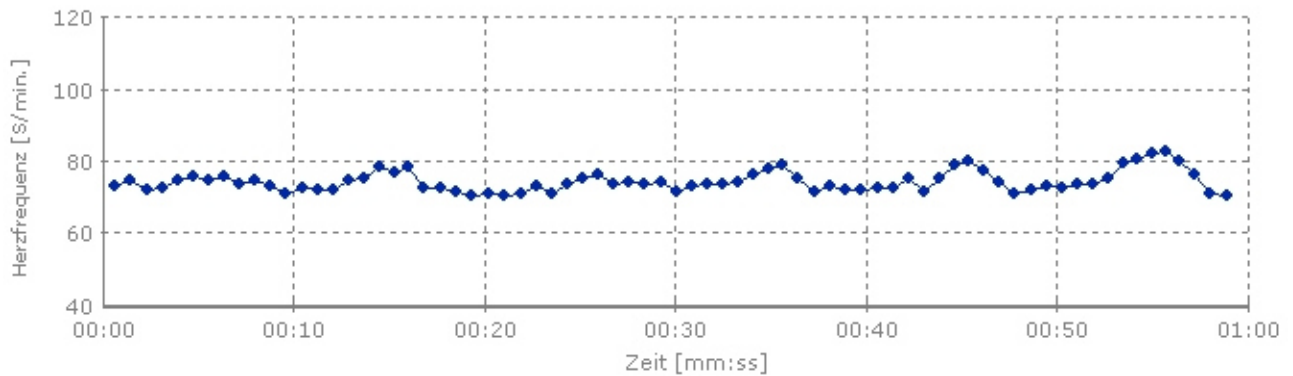


Measurement results after 8 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	7,70	bpm	7,38%
RMSSD	22,39	ms	
Average heart rate	74,6	bpm	
Standard deviation	3,21	bpm	
Variation coefficient	4,48	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 7,38% of the theoretical maximum value of 100%.

Regulation of the heart rate after 12 days using SPIRO CARD LEVEL 2



Measurement results after 12 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,11	bpm	7,56%
RMSSD	23,04	ms	
Average heart rate	74,4	bpm	
Standard deviation	2,82	bpm	
Variation coefficient	3,81	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 7,56% of the theoretical maximum value of 100%.

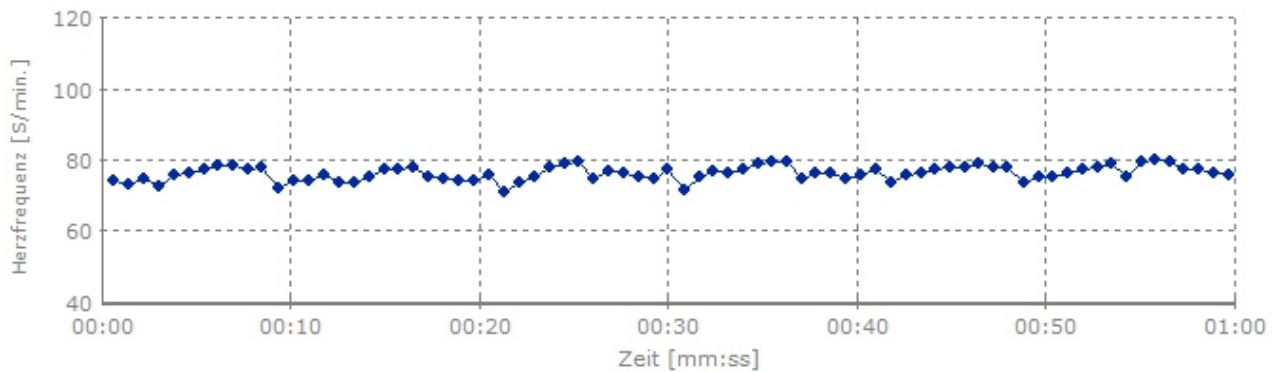
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 5,68%
- after 4 days using SPIRO CARD LEVEL 2: 6,91%
- after 8 days using SPIRO CARD LEVEL 2: 7,38%
- after 12 days using SPIRO CARD LEVEL 2: 7,56%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 only leads to a slight improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 5

Regulation of the heart rate without SPIRO CARD LEVEL 2

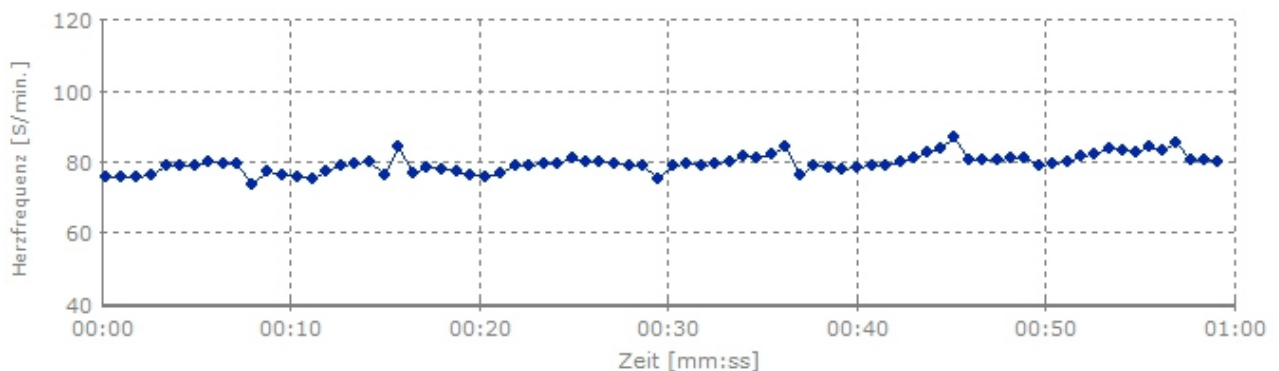


Measurement results without SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	6,21	bpm	14,51%
RMSSD	22,34	ms	
Average heart rate	76,5	bpm	
Standard deviation	2,11	bpm	
Variation coefficient	2,47	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 14,51% of the theoretical maximum value of 100%.

Regulation of the heart rate after 4 days using SPIRO CARD LEVEL 2

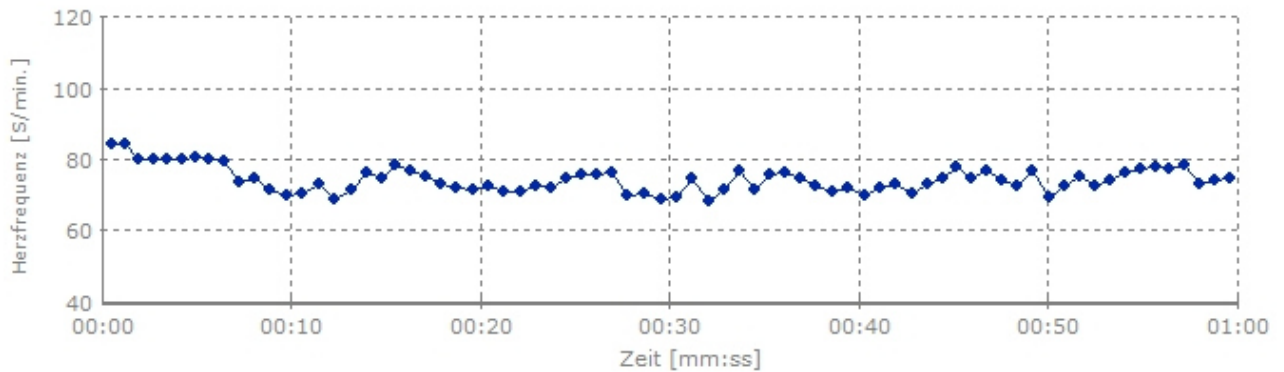


Measurement results after 4 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	7,93	bpm	17,22%
RMSSD	20,74	ms	
Average heart rate	79,1	bpm	
Standard deviation	2,55	bpm	
Variation coefficient	3,12	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 17,22% of the theoretical maximum value of 100%.

Regulation of the heart rate after 8 days using SPIRO CARD LEVEL 2

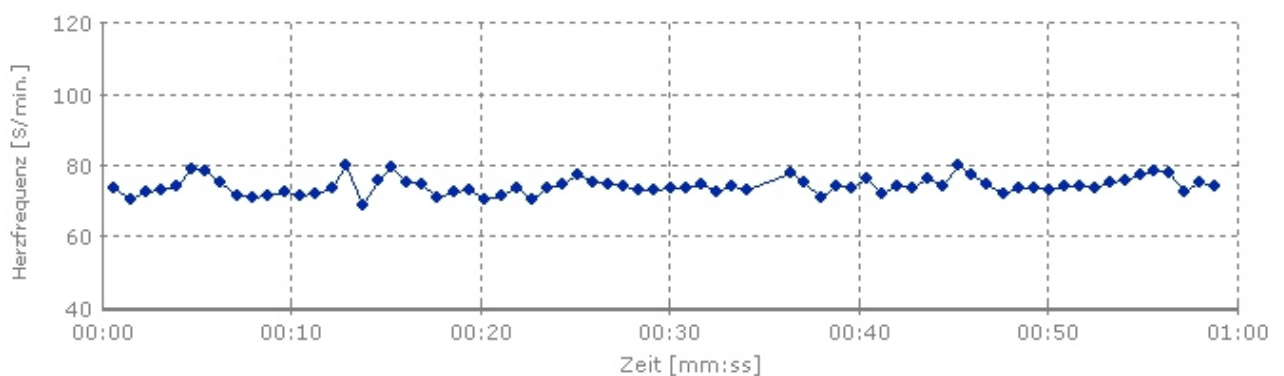


Measurement results after 8 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	9,21	bpm	21,04%
RMSSD	31,67	ms	
Average heart rate	74,8	bpm	
Standard deviation	3,51	bpm	
Variation coefficient	4,85	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 21,04% of the theoretical maximum value of 100%.

Regulation of the heart rate after 10 days using SPIRO CARD LEVEL 2

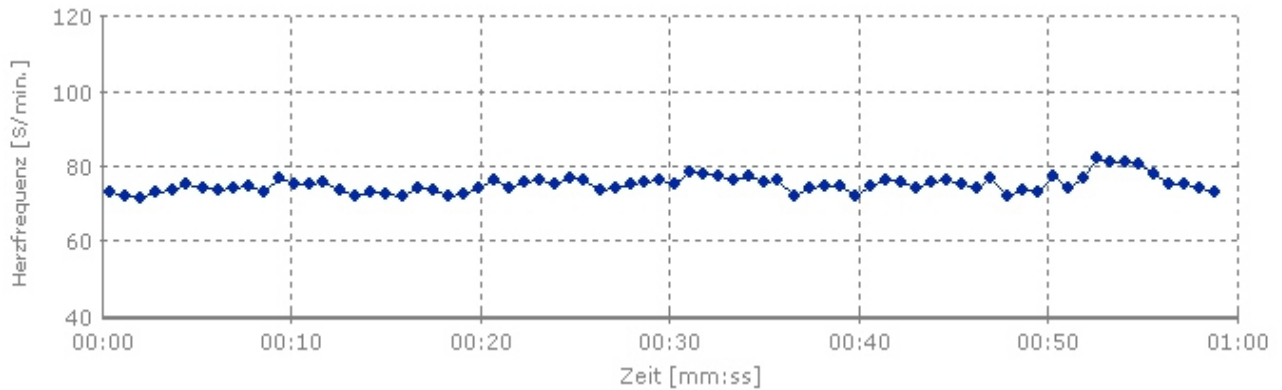


Measurement results after 10 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,44	bpm	19,08%
RMSSD	31,45	ms	
Average heart rate	74,7	bpm	
Standard deviation	2,71	bpm	
Variation coefficient	3,21	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 19,08% of the theoretical maximum value of 100%.

Regulation of the heart rate after 15 days using SPIRO CARD LEVEL 2



Measurement results after 15 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	5,30	bpm	12,48%
RMSSD	19,68	ms	
Average heart rate	75,6	bpm	
Standard deviation	2,21	bpm	
Variation coefficient	2,90	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 12,48% of the theoretical maximum value of 100%.

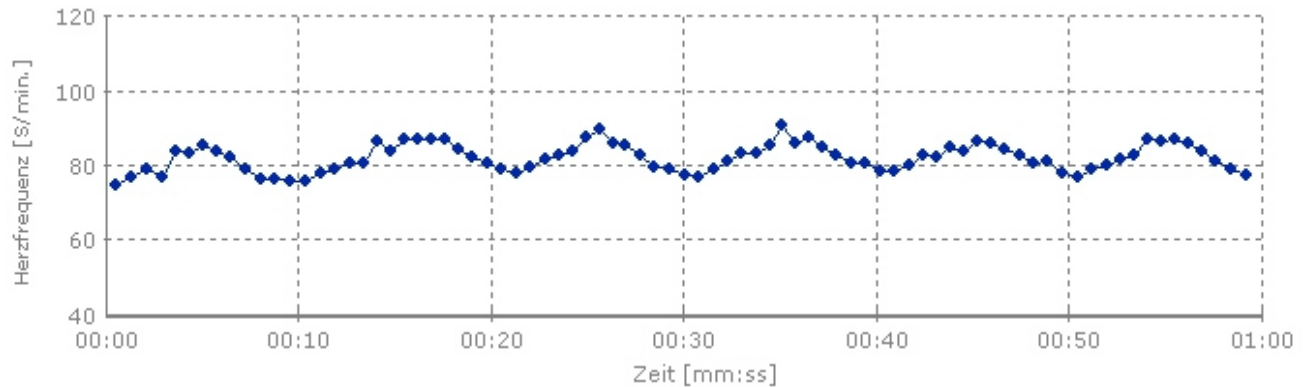
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 14,51%
- after 4 days using SPIRO CARD LEVEL 2: 17,22%
- after 8 days using SPIRO CARD LEVEL 2: 21,04%
- after 10 days using SPIRO CARD LEVEL 2: 19,08%
- after 15 days using SPIRO CARD LEVEL 2: 12,48%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 does not lead to a verifiable improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 6

Regulation of the heart rate without SPIRO CARD LEVEL 2

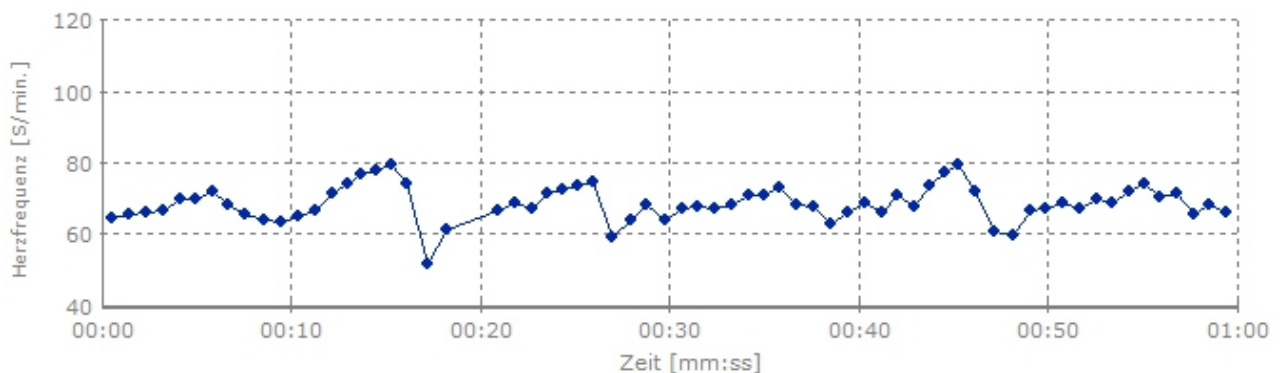


Measurement results without SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	11,39	bpm	35,62%
RMSSD	20,11	ms	
Average heart rate	82,5	bpm	
Standard deviation	3,61	bpm	
Variation coefficient	4,43	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 35,62% of the theoretical maximum value of 100%.

Regulation of the heart rate after 5 days using SPIRO CARD LEVEL 2

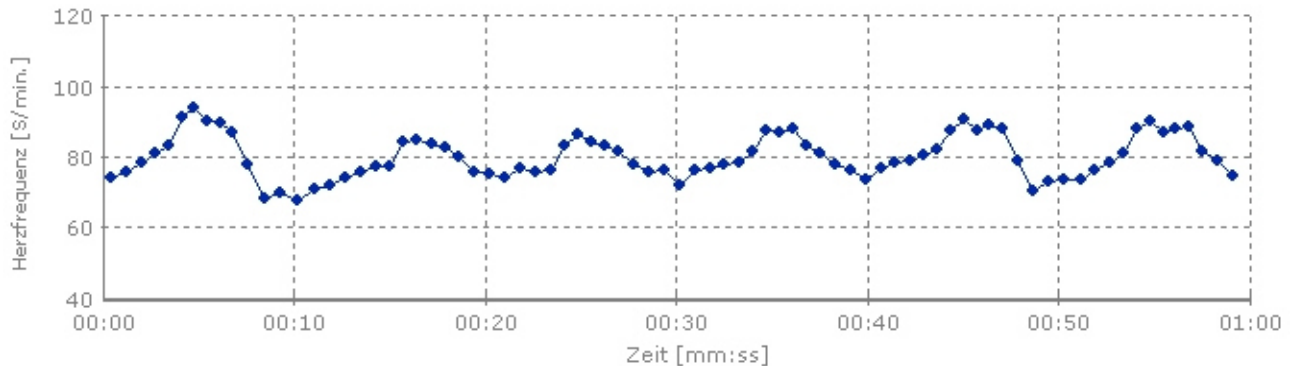


Measurement results after 5 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	15,12	bpm	43,80%
RMSSD	70,23	ms	
Average heart rate	68,6	bpm	
Standard deviation	4,71	bpm	
Variation coefficient	7,11	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 43,80% of the theoretical maximum value of 100%.

Regulation of the heart rate after 9 days using SPIRO CARD LEVEL 2

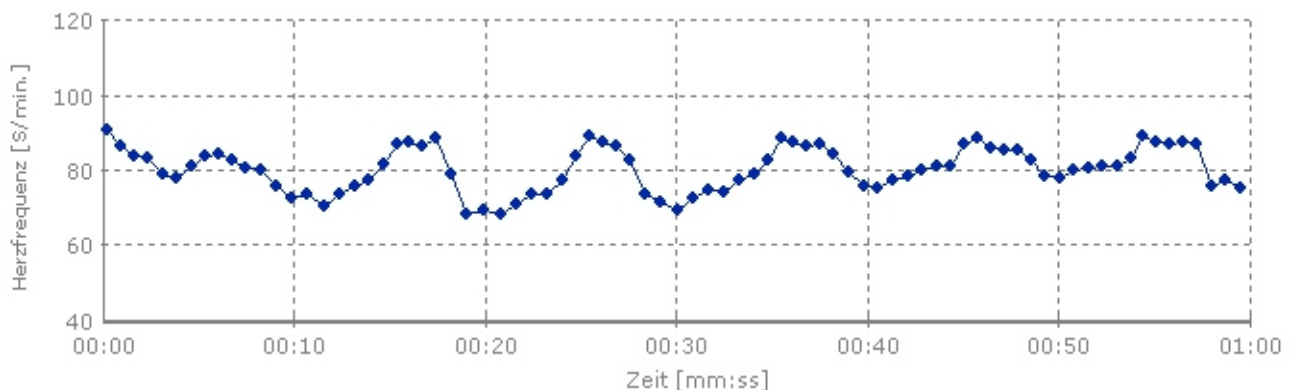


Measurement results after 9 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	17,22	bpm	51,52%
RMSSD	33,51	ms	
Average heart rate	79,4	bpm	
Standard deviation	6,19	bpm	
Variation coefficient	7,57	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 51,52% of the theoretical maximum value of 100%.

Regulation of the heart rate after 14 days using SPIRO CARD LEVEL 2

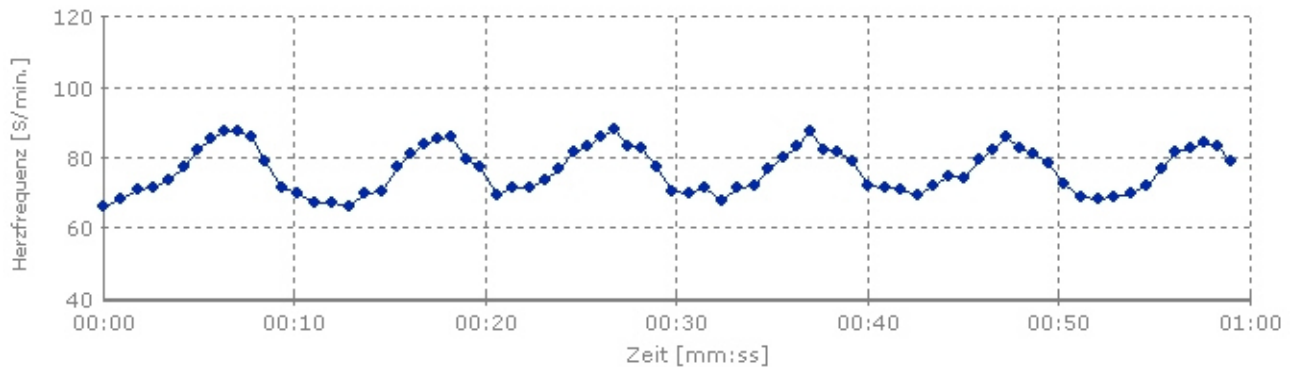


Measurement results after 14 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	19,59	bpm	66,65%
RMSSD	33,23	ms	
Average heart rate	80,5	bpm	
Standard deviation	5,81	bpm	
Variation coefficient	7,29	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 66,65% of the theoretical maximum value of 100%.

Regulation of the heart rate after 16 days using SPIRO CARD LEVEL 2



Measurement results after 16 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	19,73	bpm	66,98%
RMSSD	36,23	ms	
Average heart rate	76,2	bpm	
Standard deviation	6,41	bpm	
Variation coefficient	8,34	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 66,98% of the theoretical maximum value of 100%.

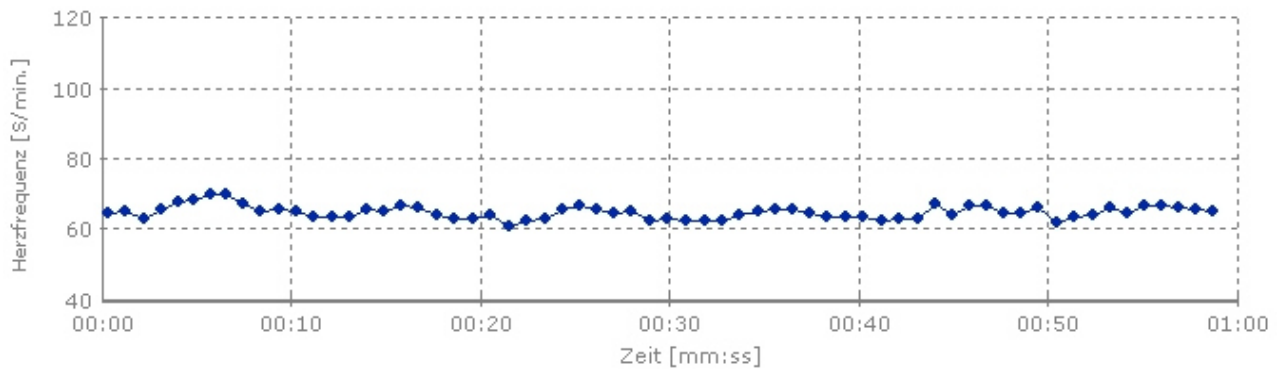
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 35,62%
- after 5 days using SPIRO CARD LEVEL 2: 43,80%
- after 9 days using SPIRO CARD LEVEL 2: 51,52%
- after 14 days using SPIRO CARD LEVEL 2: 66,65%
- after 16 days using SPIRO CARD LEVEL 2: 66,98%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 7

Regulation of the heart rate without SPIRO CARD LEVEL 2

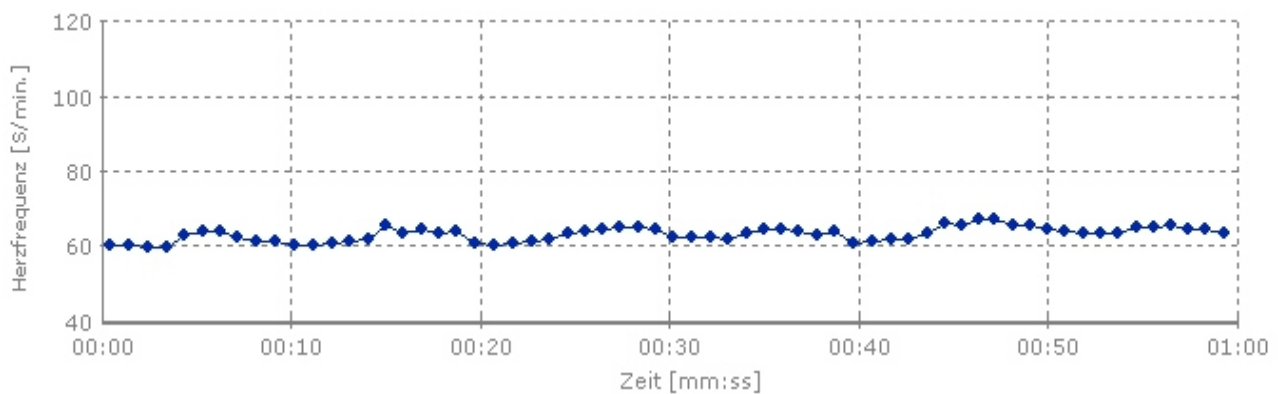


Measurement results without SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	5,02	bpm	10,81%
RMSSD	22,12	ms	
Average heart rate	64,3	bpm	
Standard deviation	1,89	bpm	
Variation coefficient	2,87	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 10,81% of the theoretical maximum value of 100%.

Regulation of the heart rate after 3 days using SPIRO CARD LEVEL 2

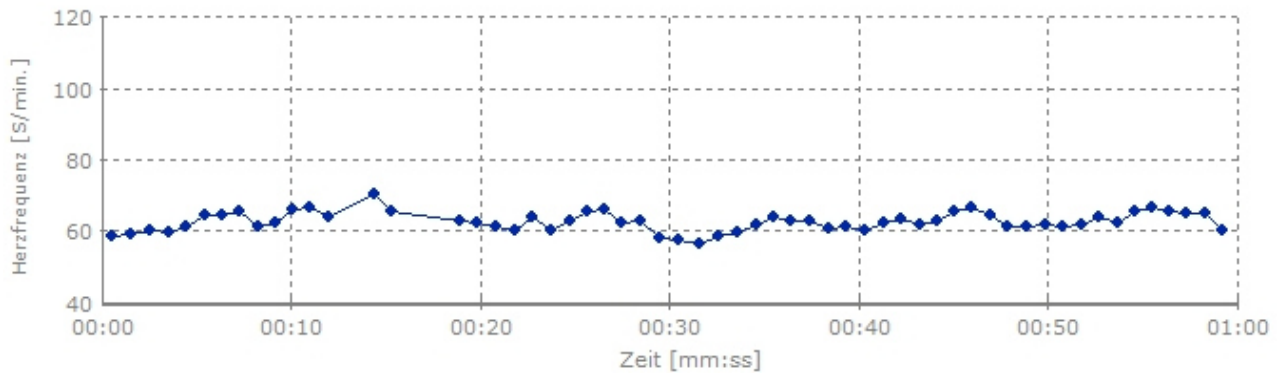


Measurement results after 3 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	4,47	bpm	9,72%
RMSSD	18,44	ms	
Average heart rate	63,6	bpm	
Standard deviation	1,91	bpm	
Variation coefficient	2,92	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 9,72% of the theoretical maximum value of 100%.

Regulation of the heart rate after 6 days using SPIRO CARD LEVEL 2

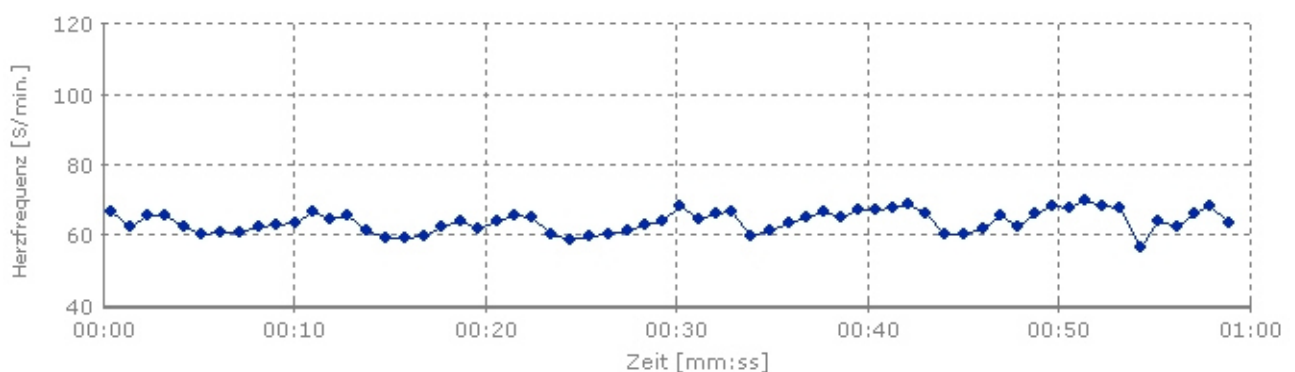


Measurement results after 6 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	7,26	bpm	12,43%
RMSSD	34,51	ms	
Average heart rate	62,2	bpm	
Standard deviation	2,59	bpm	
Variation coefficient	4,35	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 12,43% of the theoretical maximum value of 100%.

Regulation of the heart rate after 11 days using SPIRO CARD LEVEL 2

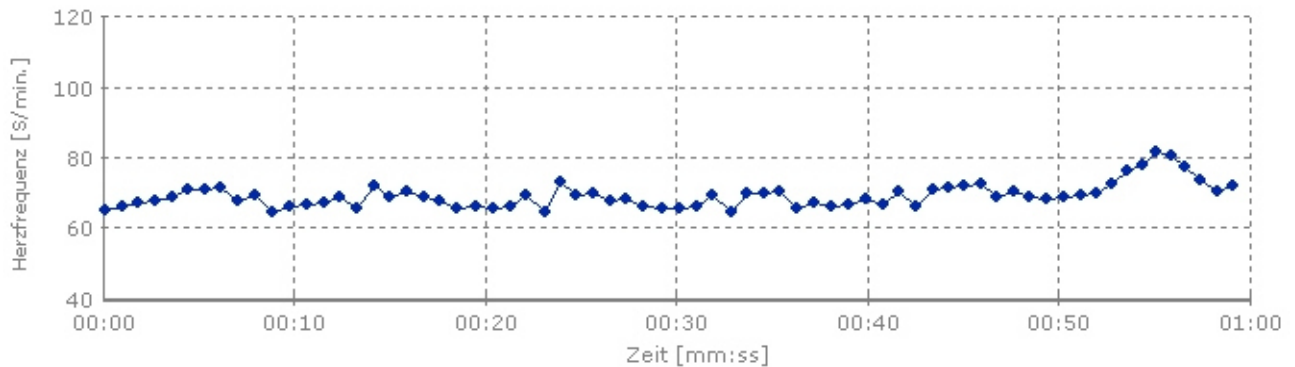


Measurement results after 11 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,61	bpm	13,22%
RMSSD	39,35	ms	
Average heart rate	63,2	bpm	
Standard deviation	3,12	bpm	
Variation coefficient	4,69	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 13,22% of the theoretical maximum value of 100%.

Regulation of the heart rate after 15 days using SPIRO CARD LEVEL 2



Measurement results after 15 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,63	bpm	13,24%
RMSSD	34,11	ms	
Average heart rate	69,6	bpm	
Standard deviation	3,58	bpm	
Variation coefficient	5,13	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 13,24% of the theoretical maximum value of 100%.

Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 10,81%
- after 3 days using SPIRO CARD LEVEL 2: 9,72%
- after 6 days using SPIRO CARD LEVEL 2: 12,43%
- after 11 days using SPIRO CARD LEVEL 2: 13,22%
- after 15 days using SPIRO CARD LEVEL 2: 13,24%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 only leads to a slight improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 8

Regulation of the heart rate without SPIRO CARD LEVEL 2

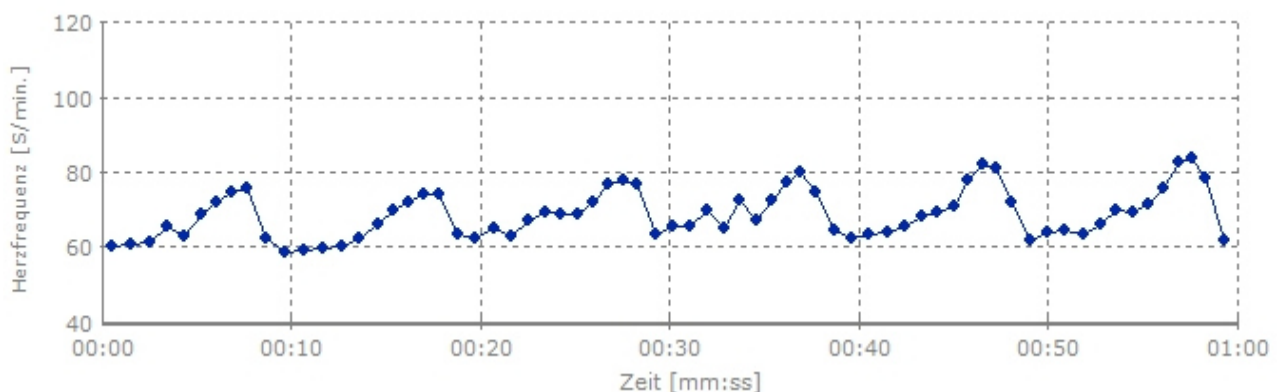


Measurement results without SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	15,04	bpm	80,15%
RMSSD	70,12	ms	
Average heart rate	68,9	bpm	
Standard deviation	4,79	bpm	
Variation coefficient	7,14	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 80,15% of the theoretical maximum value of 100%.

Regulation of the heart rate after 4 days using SPIRO CARD LEVEL 2

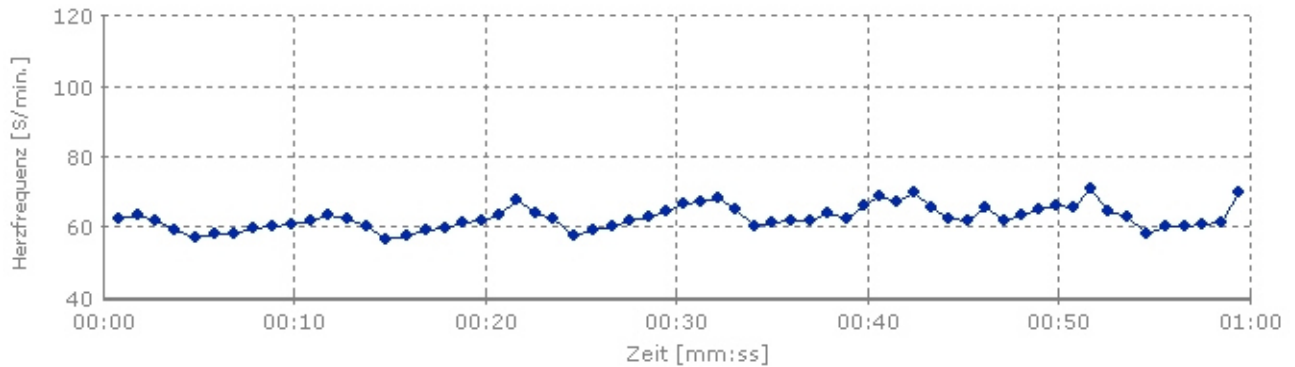


Measurement results after 4 days using SPIRO CARD LEVEL 2

<i>Parameter</i>	<i>Value</i>	<i>Unit</i>	<i>Rank/Age</i>
Resp. sinus arrhythmia (RSA)	17,98	bpm	83,55%
RMSSD	62,22	ms	
Average heart rate	68,4	bpm	
Standard deviation	6,49	bpm	
Variation coefficient	9,81	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 83,55% of the theoretical maximum value of 100%.

Regulation of the heart rate after 7 days using SPIRO CARD LEVEL 2

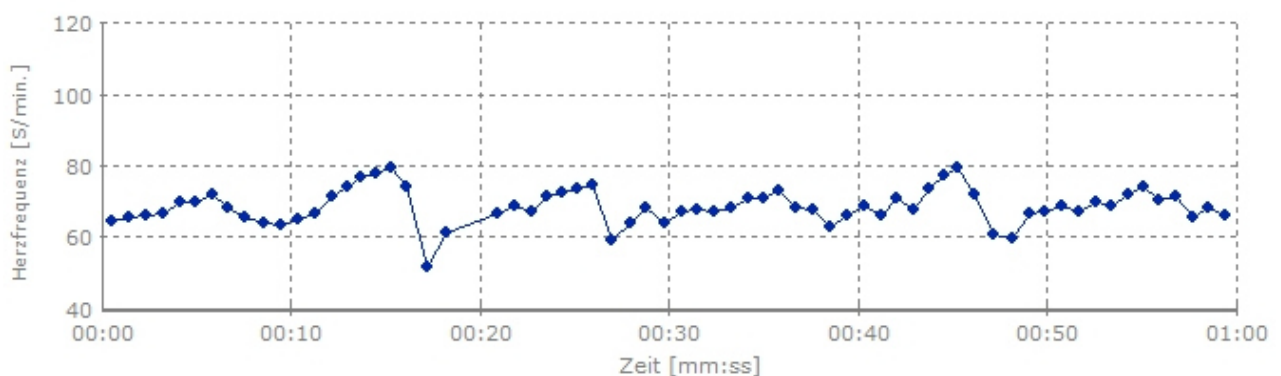


Measurement results after 7 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	18,16	bpm	84,98%
RMSSD	62,44	ms	
Average heart rate	69,6	bpm	
Standard deviation	6,21	bpm	
Variation coefficient	9,45	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 84,98% of the theoretical maximum value of 100%.

Regulation of the heart rate after 10 days using SPIRO CARD LEVEL 2



Measurement results after 10 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	18,12	bpm	84,32%
RMSSD	62,15	ms	
Average heart rate	68,6	bpm	
Standard deviation	6,51	bpm	
Variation coefficient	9,72	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 84,32% of the theoretical maximum value of 100%.

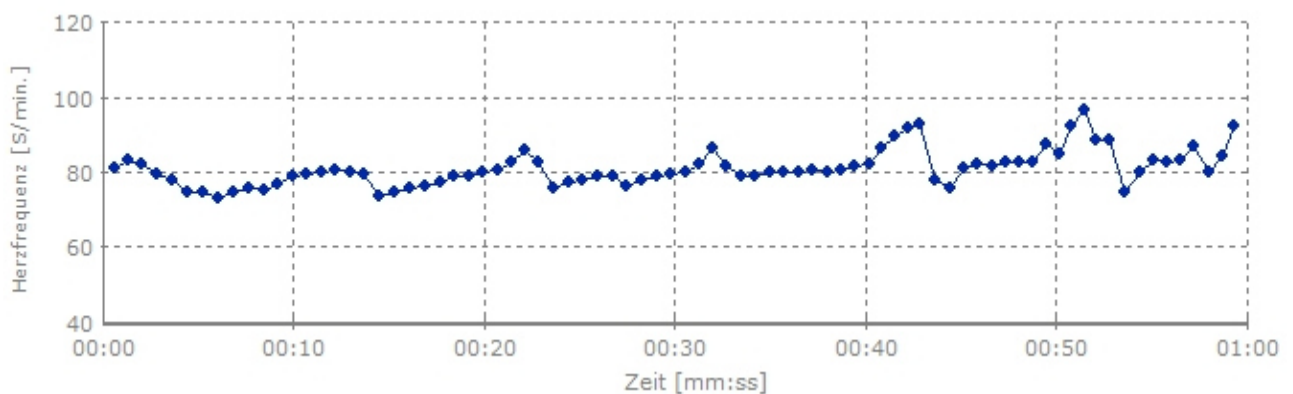
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2: 80,15%
 after 4 days using SPIRO CARD LEVEL 2: 83,55%
 after 7 days using SPIRO CARD LEVEL 2: 84,98%
 after 10 days using SPIRO CARD LEVEL 2: 84,32%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 9

Regulation of the heart rate without SPIRO CARD LEVEL 2

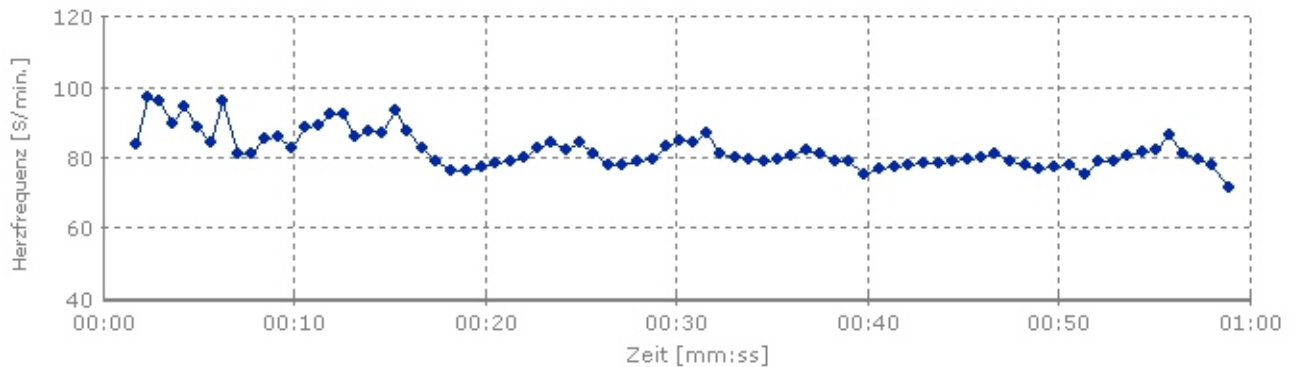


Measurement results without SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	10,11	bpm	20,28%
RMSSD	31,78	ms	
Average heart rate	81,5	bpm	
Standard deviation	5,12	bpm	
Variation coefficient	6,78	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 20,28% of the theoretical maximum value of 100%.

Regulation of the heart rate after 2 days using SPIRO CARD LEVEL 2

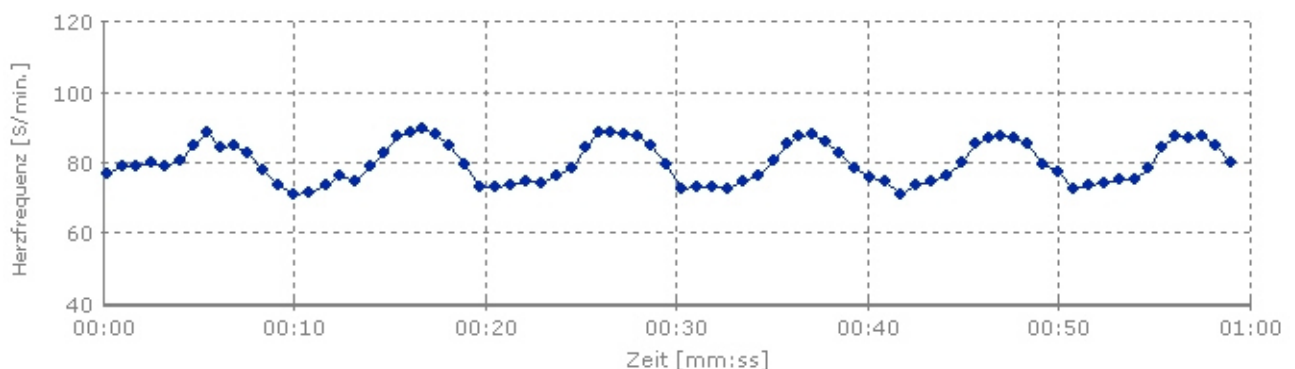


Measurement results after 2 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	14,61	bpm	25,14%
RMSSD	30,67	ms	
Average heart rate	82,6	bpm	
Standard deviation	5,22	bpm	
Variation coefficient	6,83	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 25,14% of the theoretical maximum value of 100%.

Regulation of the heart rate after 6 days using SPIRO CARD LEVEL 2

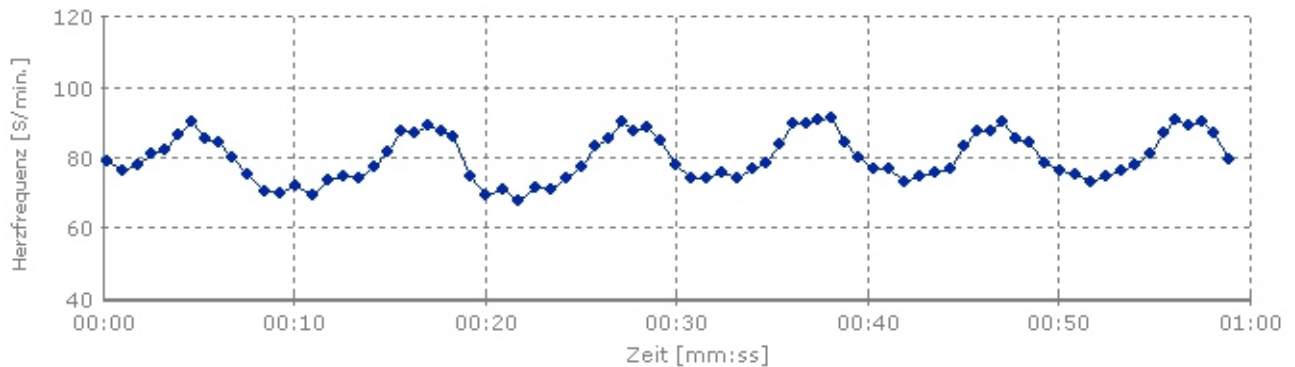


Measurement results after 6 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	15,95	bpm	27,16%
RMSSD	29,15	ms	
Average heart rate	80,1	bpm	
Standard deviation	5,49	bpm	
Variation coefficient	7,46	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 27,16% of the theoretical maximum value of 100%.

Regulation of the heart rate after 9 days using SPIRO CARD LEVEL 2



Measurement results after 9 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	20,84	bpm	35,11%
RMSSD	33,35	ms	
Average heart rate	80,8	bpm	
Standard deviation	6,34	bpm	
Variation coefficient	8,49	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 35,11% of the theoretical maximum value of 100%.

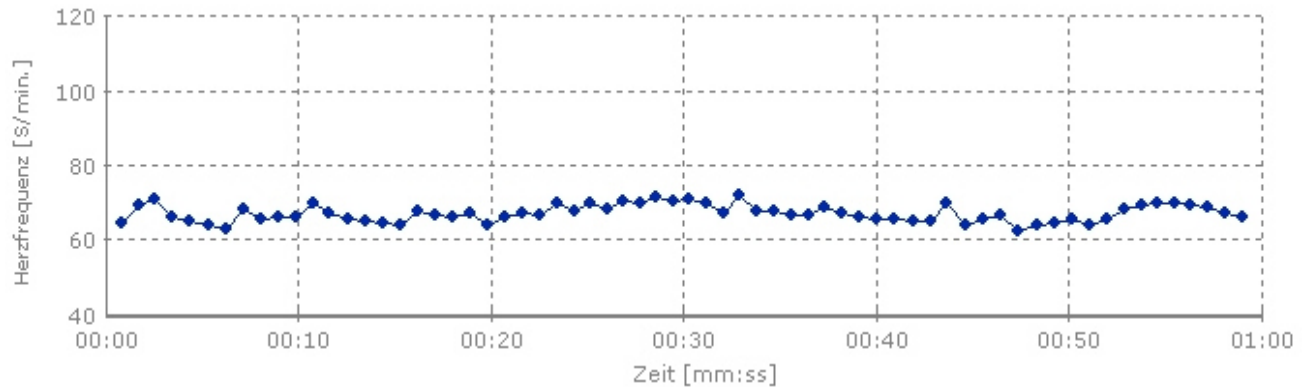
Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 20,28%
- after 2 days using SPIRO CARD LEVEL 2: 25,14%
- after 6 days using SPIRO CARD LEVEL 2: 27,16%
- after 9 days using SPIRO CARD LEVEL 2: 35,11%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 10

Regulation of the heart rate without SPIRO CARD LEVEL 2

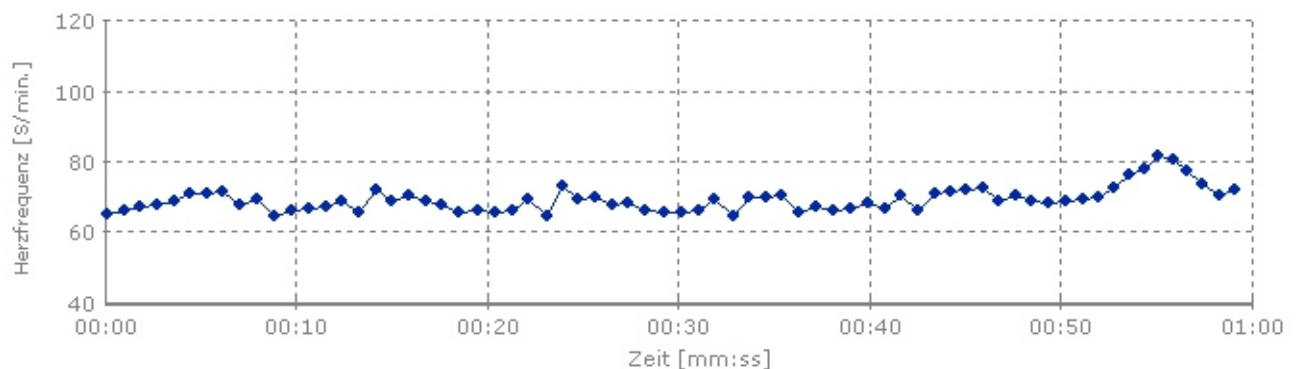


Measurement results without SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	6,23	bpm	25,10%
RMSSD	29,20	ms	
Average heart rate	67,6	bpm	
Standard deviation	2,29	bpm	
Variation coefficient	3,31	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 25,10% of the theoretical maximum value of 100%.

Regulation of the heart rate after 4 days using SPIRO CARD LEVEL 2

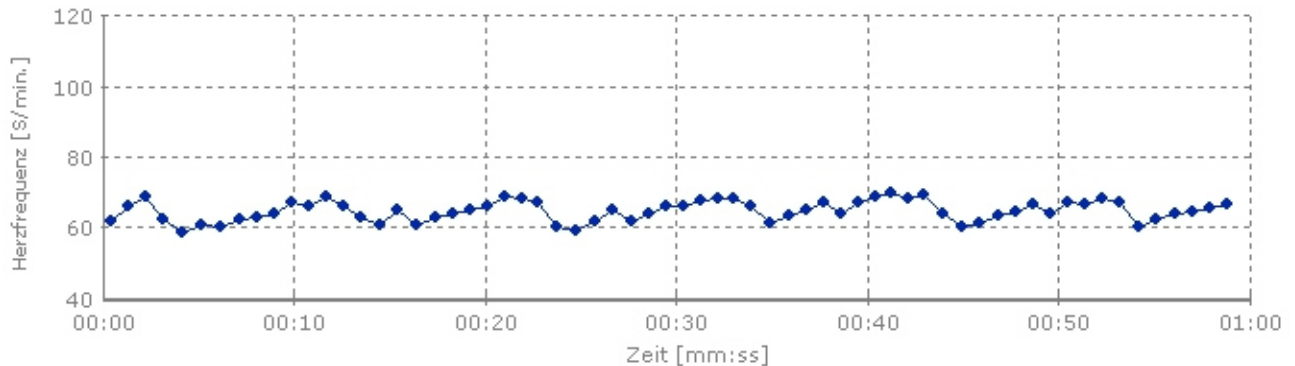


Measurement results after 4 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	6,63	bpm	26,05%
RMSSD	34,11	ms	
Average heart rate	69,7	bpm	
Standard deviation	3,58	bpm	
Variation coefficient	5,13	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 26,05% of the theoretical maximum value of 100%.

Regulation of the heart rate after 7 days using SPIRO CARD LEVEL 2

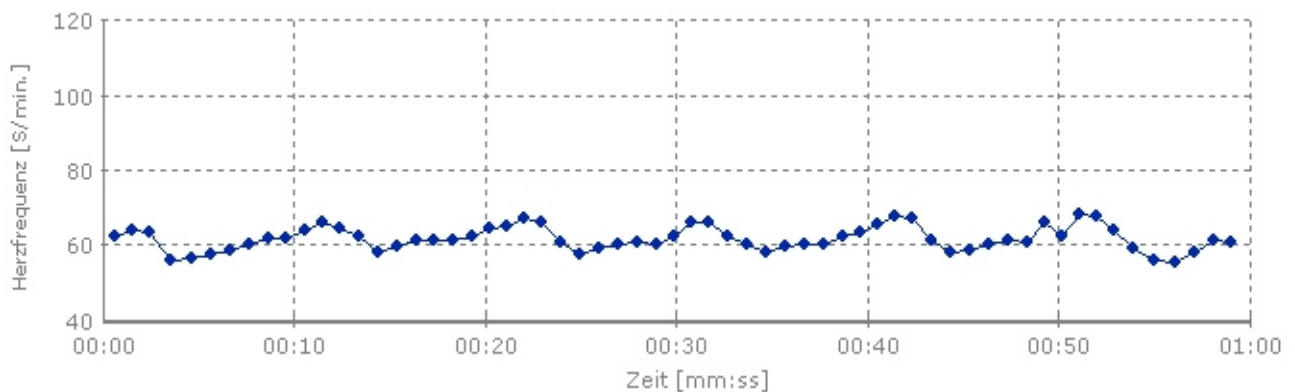


Measurement results after 7 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	9,36	bpm	34,53%
RMSSD	38,78	ms	
Average heart rate	64,1	bpm	
Standard deviation	2,87	bpm	
Variation coefficient	4,91	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 34,53% of the theoretical maximum value of 100%.

Regulation of the heart rate after 12 days using SPIRO CARD LEVEL 2

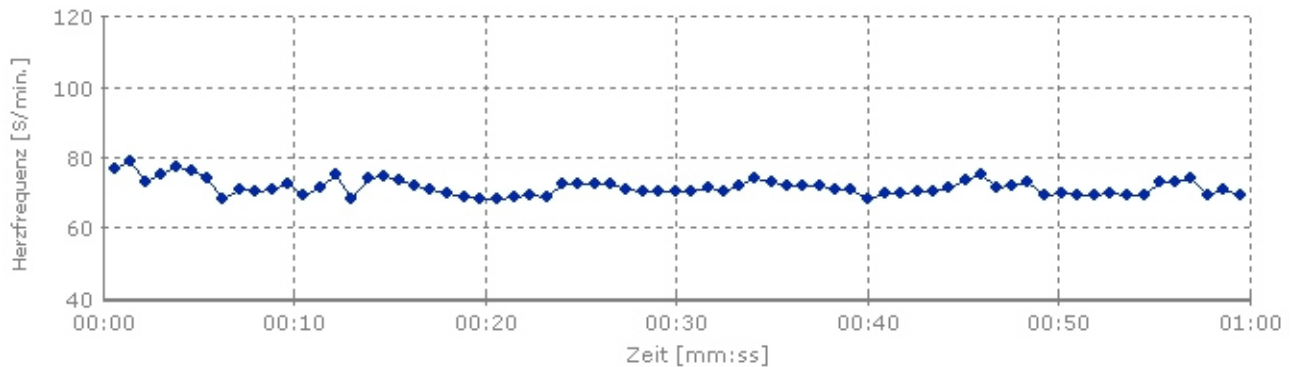


Measurement results after 12 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	9,31	bpm	34,20%
RMSSD	41,31	ms	
Average heart rate	61,8	bpm	
Standard deviation	3,78	bpm	
Variation coefficient	5,95	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 34,20% of the theoretical maximum value of 100%.

Regulation of the heart rate after 16 days using SPIRO CARD LEVEL 2

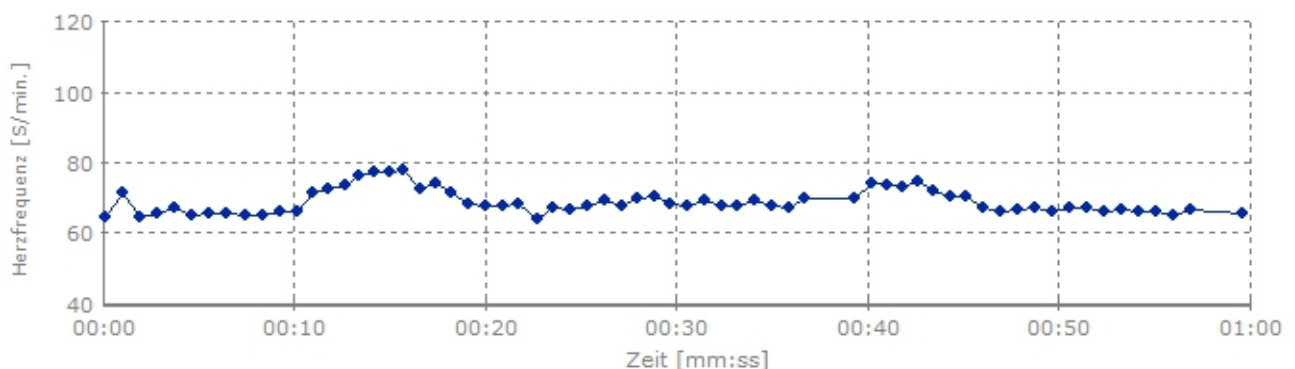


Measurement results after 16 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	6,66	bpm	26,18%
RMSSD	24,91	ms	
Average heart rate	71,9	bpm	
Standard deviation	2,52	bpm	
Variation coefficient	3,97	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 5,65% of the theoretical maximum value of 100%.

Regulation of the heart rate after 18 days using SPIRO CARD LEVEL 2

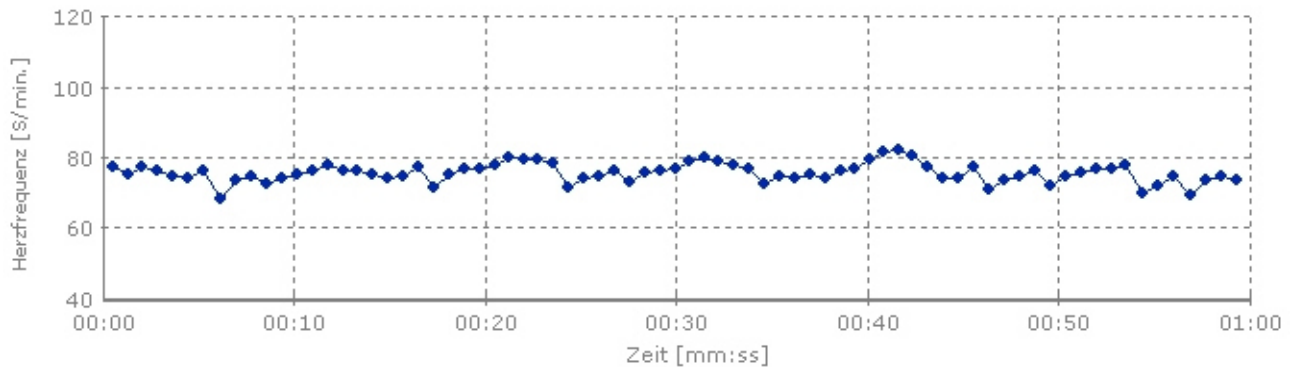


Measurement results after 18 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	7,05	bpm	26,31%
RMSSD	27,41	ms	
Average heart rate	68,3	bpm	
Standard deviation	3,78	bpm	
Variation coefficient	4,83	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 26,31% of the theoretical maximum value of 100%.

Regulation of the heart rate after 20 days using SPIRO CARD LEVEL 2



Measurement results after 20 days using SPIRO CARD LEVEL 2

Parameter	Value	Unit	Rank/Age
Resp. sinus arrhythmia (RSA)	8,80	bpm	30,23%
RMSSD	29,41	ms	
Average heart rate	75,4	bpm	
Standard deviation	2,45	bpm	
Variation coefficient	3,29	%	

The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained 30,23% of the theoretical maximum value of 100%.

Summary of the test results: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained the following values of the theoretical maximum value of 100%:

- without SPIRO CARD LEVEL 2: 25,10%
- after 4 days using SPIRO CARD LEVEL 2: 26,05%
- after 7 days using SPIRO CARD LEVEL 2: 34,53%
- after 12 days using SPIRO CARD LEVEL 2: 34,20%
- after 16 days using SPIRO CARD LEVEL 2: 26,18%
- after 18 days using SPIRO CARD LEVEL 2: 26,31%
- after 20 days using SPIRO CARD LEVEL 2: 30,23%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

4. Summarised evaluation of all test results of the biophysical investigation into the SPIRO CARD LEVEL 2 in conjunction with the biofeedback system Stress Pilot Plus, with respect to the protective effect against high frequency electromagnetic radiation and electrosmog

Test subject 1: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	5,65%
after 3 days using SPIRO CARD LEVEL 2:	5,68%
after 7 days using SPIRO CARD LEVEL 2:	5,85%
after 12 days using SPIRO CARD LEVEL 2:	8,39%
after 16 days using SPIRO CARD LEVEL 2:	11,17%
after 20 days using SPIRO CARD LEVEL 2:	14,38%
after 24 days using SPIRO CARD LEVEL 2:	16,22%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 2: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	23,86%
after 2 days using SPIRO CARD LEVEL 2:	24,10%
after 6 days using SPIRO CARD LEVEL 2:	41,23%
after 10 days using SPIRO CARD LEVEL 2:	35,17%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 3: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	48,51%
after 4 days using SPIRO CARD LEVEL 2:	52,52%
after 10 days using SPIRO CARD LEVEL 2:	58,44%
after 14 days using SPIRO CARD LEVEL 2:	71,12%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 4: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	5,68%
after 4 days using SPIRO CARD LEVEL 2:	6,91%
after 8 days using SPIRO CARD LEVEL 2:	7,38%
after 12 days using SPIRO CARD LEVEL 2:	7,56%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 only leads to a slight improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 5: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	14,51%
after 4 days using SPIRO CARD LEVEL 2:	17,22%
after 8 days using SPIRO CARD LEVEL 2:	21,04%
after 10 days using SPIRO CARD LEVEL 2:	19,08%
after 15 days using SPIRO CARD LEVEL 2:	12,48%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 does not lead to a verifiable improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 6: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	35,62%
after 5 days using SPIRO CARD LEVEL 2:	43,80%
after 9 days using SPIRO CARD LEVEL 2:	51,52%
after 14 days using SPIRO CARD LEVEL 2:	66,65%
after 16 days using SPIRO CARD LEVEL 2:	66,98%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the

work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 7: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	10,81%
after 3 days using SPIRO CARD LEVEL 2:	9,72%
after 6 days using SPIRO CARD LEVEL 2:	12,43%
after 11 days using SPIRO CARD LEVEL 2:	13,22%
after 15 days using SPIRO CARD LEVEL 2:	13,24%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 only leads to a slight improvement in the heart rate variability with this test subject in conjunction with disturbances caused by high frequency electromagnetic radiation.

Test subject 8: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	80,15%
after 4 days using SPIRO CARD LEVEL 2:	83,55%
after 7 days using SPIRO CARD LEVEL 2:	84,98%
after 10 days using SPIRO CARD LEVEL 2:	84,32%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 9: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	20,28%
after 2 days using SPIRO CARD LEVEL 2:	25,14%
after 6 days using SPIRO CARD LEVEL 2:	27,16%
after 9 days using SPIRO CARD LEVEL 2:	35,11%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

Test subject 10: The ability of this test subject to regulate the heart rate and to adjust the vegetative nervous system to the existing disturbances caused by electrosmog in this test situation and within this comparison group attained folgende Werte of the theoretical maximum value of 100%:

without SPIRO CARD LEVEL 2:	25,10%
after 4 days using SPIRO CARD LEVEL 2:	26,05%
after 7 days using SPIRO CARD LEVEL 2:	34,53%
after 12 days using SPIRO CARD LEVEL 2:	34,20%
after 16 days using SPIRO CARD LEVEL 2:	26,18%
after 18 days using SPIRO CARD LEVEL 2:	26,31%
after 20 days using SPIRO CARD LEVEL 2:	30,23%

On the basis of the measurement results it is possible to conclude that the use of the SPIRO CARD LEVEL 2 leads to a verifiable improvement in the heart rate variability in conjunction with disturbances caused by high frequency electromagnetic radiation. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance.

5. Award of the IGEF test seal to the SPIRO CARD LEVEL 2

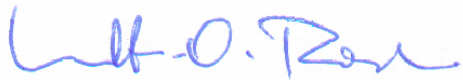
The results of the biophysical investigation by the IGEF test and research laboratory confirm that the use of the SPIRO CARD LEVEL 2 with health-endangering disturbances caused by high frequency electromagnetic radiation leads to a verifiable improvement in the heart rate variability. This has a beneficial effect on the heart and circulatory system processes and reduces the work of the vegetative nervous system required in order to maintain the internal balance. The measurement results show that the positive effect of the SPIRO CARD LEVEL 2 increases with the duration of use.

The SPIRO CARD LEVEL 2 is therefore suitable as a protective measure with electromagnetic radiation. However, use of the SPIRO CARD LEVEL 2 cannot replace medical treatment in the event of illness.

The requirements of the Internationale Gesellschaft für Elektrosmog-Forschung IGEF for awarding the IGEF test seal are fulfilled.



The award of the IGEF test seal to the SPIRO CARD LEVEL 2 takes place on the basis of an agreement with the Internationale Gesellschaft für Elektromog-Forschung IGEF governing the commercial use of the IGEF test seal, in which the conditions for using the IGEF test seal are stipulated.



Dipl.-BW Wulf-Dietrich Rose
Internationale Gesellschaft für Elektromog-Forschung IGEF
IGEF certification centre

6. Bibliography

- Carney RM, Freedland KE, Stein PK, Skala JA, Hoffman P, Jaffe AS: Change in heart rate and heart rate variability during treatment for depression in patients with coronary heart disease. *Psychosomatic Medicine* 62: 639-647 (2000)
- Dapra, David: Die Variabilität der Herzfrequenz. Eine Two-Case Studie über die Reproduzierbarkeit von Ergebnissen (2003)
- Del Pozo JM; Gevirtz RN; Scher B; Guarneri E: Biofeedback treatment increases heart rate variability in patients with known coronary artery disease. *American Heart Journal* 147: G1-G6 (2004)
- Deutsche Gesellschaft für Biofeedback (Internetseite) – www.dgbfb.de.
- Divan HA, Kheifets L, Olsen J Scand: Prenatal cell phone use and developmental milestone delays among infants. *J Work Environ Health* (2011)
- Eckberg DL, Hughes JW, Stoney CM: The human respiratory gate. *Journal of Physiology* (2003) 548: 339–352. Depressed mood is related to high-frequency heart rate variability during stressors. *Psychosomatic Medicine* 62: 796-803 (2000)
- Farina M, Mariggio MA, Pietrangelo T, Stupak JJ, Morini A, Fano G: ELF-EMFS induced effects on cell lines: controlling ELF generation in laboratory. *Progr Electromagn Res B* : 131 - 153 (2010)
- Gandhi, Om: Comparison of numerical and experimental methods for determination of SAR and radiation patterns of hand-held wireless telephones. *Bioelectromagnetics*, 20: 93-101 (1999)
- Jiang W, Kuchibhatla M, Cuffe MS, Christopher EJ, Alexander JD, Clary GL, Blazing MA, Gauden LH, Califf RM, Krishnan RR, O'Connor CM: Prognostic value of anxiety and depression in patients with chronic heart failure. *Circulation* 110: 3452-6 (2004)
- Katsamanis Karavidas M, Lehrer PM, Vaschillo E, Vaschillo B, Marin H, Buyske S, Malinovsky I, Radvanski D, Hassett A: Preliminary Results of an Open Label Study of Heart Rate Variability Biofeedback for the Treatment of Major Depression *Applied Psychophysiology and Biofeedback* 32: 19-30 (2007)
- Kesari KK, Kumar S, Behari J: Effects of Radiofrequency Electromagnetic Wave Exposure from Cellular Phones on the Reproductive Pattern in Male Wistar Rats. *Appl Biochem Biotechnol* (2011)
- Koivisto, M., Revonsuo, A., Krause, C.M., Haarala, C., Sillanmaki, L, Laine, M. and Hamalainen, H.: Effects of 902 MHz electromagnetic field emitted by cellular telephones on response times in humans. *Cognitive Neuroscience and Neuropsychology in NeuroReport* Vol 11 No 2, February (2000)
- Krittayaphong R, Cascio W, Light K, Sheffield D, Golden R, Finkel J, et al.: Heart rate variability in patients with coronary artery disease: Differences in patients with higher and lower depression scores. *Psychosomatic Medicine* 59: 231–235 (1997)
- Lai, H. and Singh, N.P.: Elektromagnetische Hochfrequenzwellen brechen einzel- und doppelsträngige DNA in den Gehirnzellen von Ratten. *Int. J. Radiation Biology*, 69 (4): 513-521 (1996)
- Lehrer PM, Vaschillo E, Vaschillo B: Resonant frequency biofeedback training to increase cardiac variability: Rationale and manual for training. *Applied Psychophysiology & Biofeedback*, 25: 177–191 (2000)
- Lehrer PM, Vaschillo E, Vaschillo B, Lu SE, Eckberg DL, Edelberg R, Shih WJ, Lin Y, Kuusela TA, Tahvanainen KUO, and Hamer RM: Heart Rate Variability Biofeedback Increases Baroreflex Gain and Peak Expiratory Flow. *Psychosomatic Medicine* 65: 796-805 (2003)
- McCraty R: Heart Rhythm Coherence - An Emerging Area of Biofeedback. *Biofeedback* 30: 23-25 (2002)
- Mild, K.H., Oftedal, G., Sandstrom, M., Wilen, J., Tynes, T., Haugsdal, B. and Hauger E.: Symptomatischer Vergleich von Anwendern analoger und digitaler mobiler Telefone - Eine Schwedisch-Norwegische epidemiologische Studie. *National Institute for working life*, 1998:23, Umea, Sweden, 84pp (1998)

- Mück-Weymann M: Prozeß versus Handlung - Erklären der Atmung als Prozeß versus; Verstehen der Atmung als Handlung. Ein Beitrag zur Medizintheorie; In: M. Mück-Weymann (Hrsg.): Band 1, Reihe „Biopsychologie & Psychosomatik“. Verlag Hans Jacobs, Lage (1999)
- Mück-Weymann M, Loew T, Hager D: Multiparametrisches Bio-Monitoring mit einem computerunterstützten System für psychophysiologische Diagnostik, psychophysiologisch gesteuerte Therapie und Biofeedback. *Psycho 5*: 378-384 (1996)
- Mück-Weymann M, Möslers T, Joraschky P, Rebensburg M, Agelink M: Depression modulates autonomic cardiac control: A psychophysiological pathway linking depression and mortality. *German J Psychiatry 5*: 67-69 (2002)
- Mück-Weymann M: Die Variabilität der Herzschlagfolge - Ein globaler Indikator für Adaptivität in bio-psycho-sozialen Funktionskreisen. *Praxis Klinische Verhaltensmedizin und Rehabilitation (2002) 60*: 324-330.
- Mück-Weymann M, Janshoff G, Mück H: Standardized stretching-program increases heart rate variability in athletes complaining about limited muscular flexibility. *Clinical Autonomic Research 14*: 15-18. *Forum Stressmedizin 2007 – I*: 1-7 (2004)
- Mück-Weymann M, Einsle F: Biofeedback. In: Köllner V, Broda M. (Hrsg.): *Praktische Verhaltensmedizin*. Thieme Verlag, Stuttgart 69-75 (2005)
- Panagopoulos DJ, Margaritis LH: Biological and Health Effects of Mobile Telephone Radiations. *Int J Med Biol Front: 33 - 76* (2009)
- Rechlin T, Weis M, Spitzer A, Kaschka WP: Are affective disorders associated with alterations of heart rate variability? *Journal of Affective Disorders 32*: 271–275 (1994)
- Sakurai T, Kiyokawa T, Narita E, Suzuki Y, Taki M, Miyakoshi J: Analysis of gene expression in a human-derived glial cell line exposed to 2.45 GHz continuous radiofrequency electromagnetic fields. *J Radiat Res (Tokyo)* (2011)
- Saygin M, Caliskan S, Karahan N, Koyu A, Gumral N, Uguz AC: Testicular apoptosis and histopathological changes induced by a 2.45 GHz electromagnetic field. *Toxicol Ind Health*, (2011)
- Schwartz S, Anderson E, van de Borne PMDP: Autonomic nervous system and sudden cardiac death. Experimental basis and clinical observations for post myocardial infarction risk stratification. *Circulation 85*: 177–191 (1992)
- Siepmann M, Aikac V, Unterdörfer J, Petrowski K, Niepoth L, Mück-Weymann M: The effects of heart rate variability in patients with depression and in healthy controls. [http://www.bfe.org/meeting/12th/Scientific_Day_2008_in_Salzburg.pdf]
- Stein PK, Carney RM, Freedland KE, Skala JA, Jaffe AS, Kleiger RE, Rottman JN: Severe depression is associated with markedly reduced heart rate variability in patients with stable coronary heart disease. *J. Psychosomatic Research 48*: 493-500 (2000)
- Virnich, Martin H.: WLAN-Anwendungen für Hot-Spots“, <http://www.elektrosmog-messen.de/wlan-technik.pdf> (2003)