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## UHF-SHF Breitband Log.-Per. Antenne UHF-SHF Broadband Log.-Per. Antenna



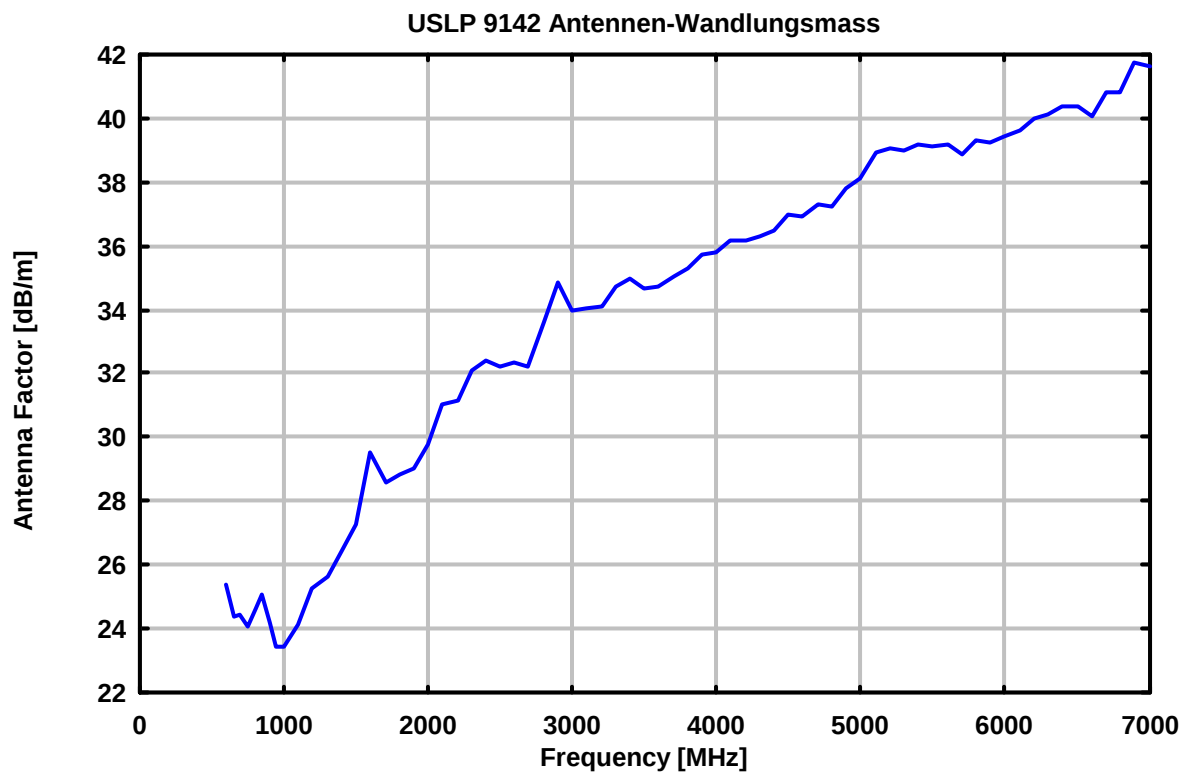
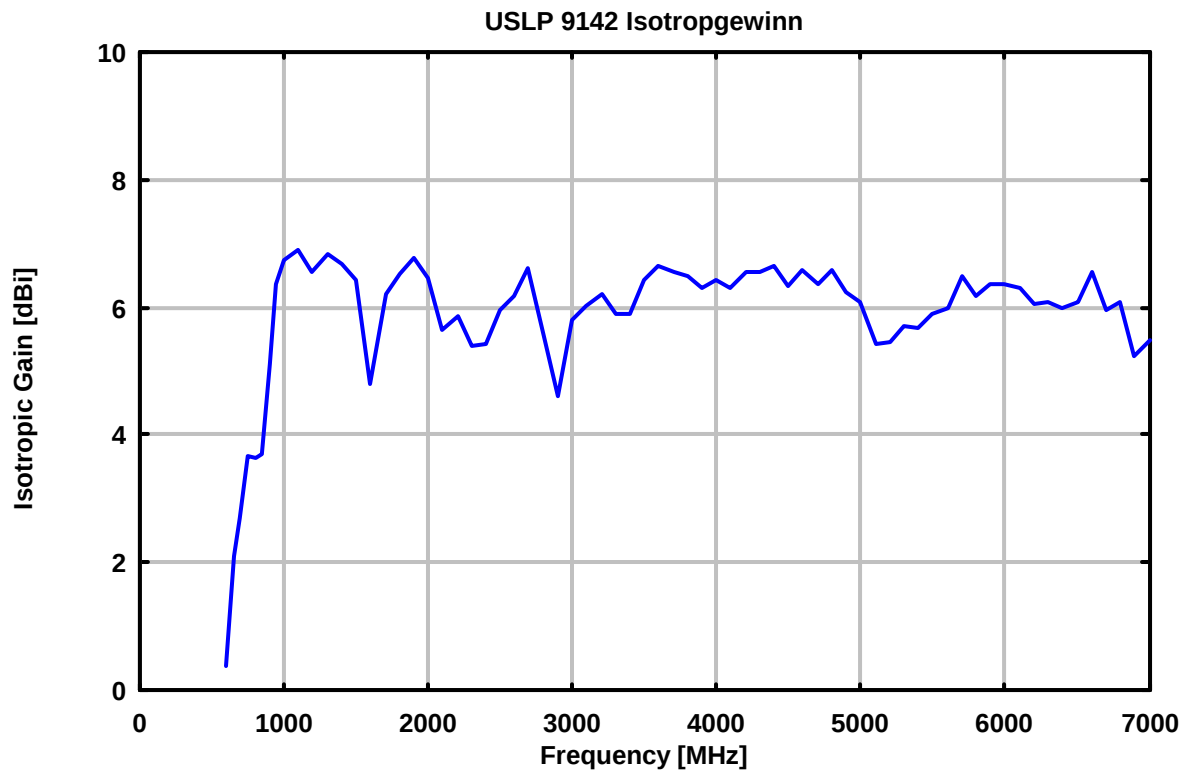
### Beschreibung:

Linear polarisierte Logarithmisch Periodische Breitbandantenne in Aluminiumausführung für Empfangs- und Sendeanwendungen.

### Description:

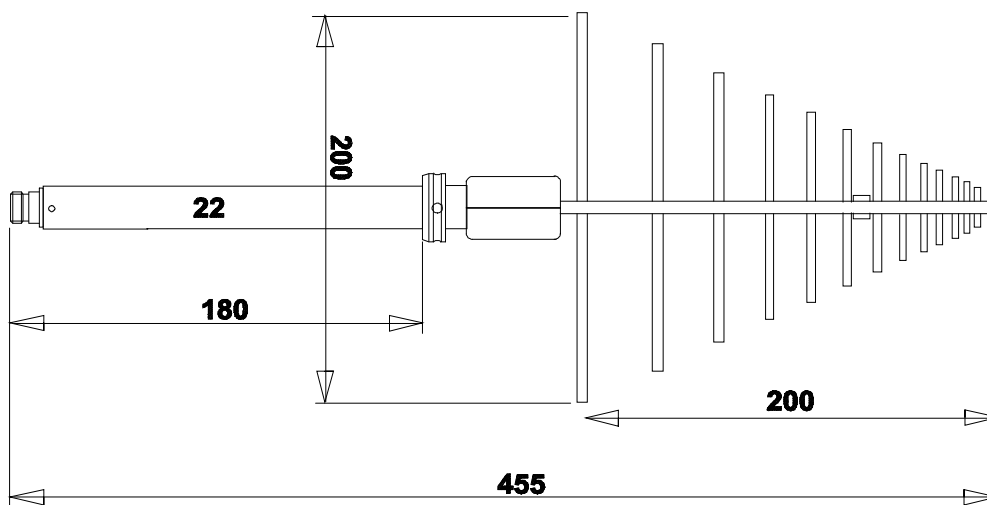
Linear polarized Logarithmic Periodic Broadband Antenna (Aluminium tubing) for Receive and Transmit Applications.

| Technische Daten:                  |                                | Specifications:                  |
|------------------------------------|--------------------------------|----------------------------------|
| Frequenzbereich, nominell:         | 800 MHz...5 GHz                | Nominal Frequency Range:         |
| Nutzbarer Frequenzbereich:         | 650 MHz ... 8 GHz              | Usable Frequency Range:          |
| Isotropgewinn:                     | 4 ... 7 dBi                    | Isotropic Gain:                  |
| Antennenfaktor:                    | 23 ... 38 dB/m                 | Antenna Factor:                  |
| Impedanz, nominell:                | 50 Ω                           | Nominal Impedance:               |
| Stehwellenverhältnis SWR typisch:  | <1.5                           | Standing Wave Ratio SWR typical: |
| Vor- Rückverhältnis:               | 20 dB                          | Front to Back Ratio:             |
| Polarisationsentkopplung:          | >20 dB (800 MHz...2 GHz)       | Cross Polarisation:              |
| 3 dB Öffnungswinkel typ.(E-Ebene): | 50°-75°                        | 3 dB Beamwidth typ. (E-Plane):   |
| 3 dB Öffnungswinkel typ.(H-Ebene): | 90°-120°                       | 3 dB Beamwidth typ. (H-Plane):   |
| Max. Eingangsleistung:             | 300 W @ 1 GHz<br>150 W @ 5 GHz | Max. Input Power:                |
| Anschlußart: N-Buchse              |                                | N-Connector female               |
| Halterung: 22 mm Rohr, Rastring    |                                | Mount: 22 mm Tube, Indexing Ring |
| Breite x Länge x Dicke:            | 200 x 455 (200) x 40 mm        | Width x Length x Thickness:      |
| Gewicht:                           | 0.55 kg                        | Weight:                          |

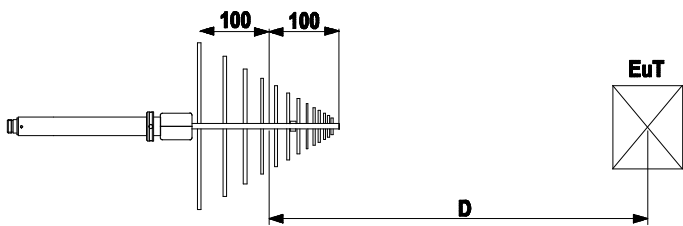
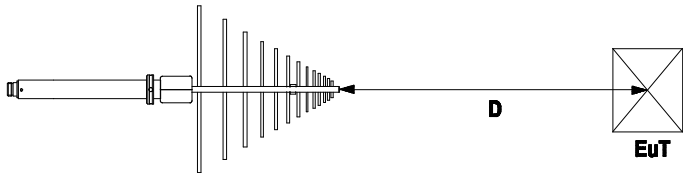


| <i>Frequency</i> | <i>Distance</i> | <i>Wavelength</i> | <i>Attenuation</i> | <i>Gain(Isotr.)</i> | <i>Gain(Dipole)</i> | <i>Ant.-Factor</i> |
|------------------|-----------------|-------------------|--------------------|---------------------|---------------------|--------------------|
| GHz              | m               | m                 | dB                 | dBi                 | dBd                 | dB/m               |
| 0.6              | 2.20            | 0.50              | 34.10              | 0.38                | -1.77               | 25.41              |
| 0.65             | 2.20            | 0.46              | 31.32              | 2.11                | -0.04               | 24.36              |
| 0.7              | 2.20            | 0.43              | 30.80              | 2.70                | 0.55                | 24.43              |
| 0.75             | 2.20            | 0.40              | 29.43              | 3.68                | 1.53                | 24.04              |
| 0.8              | 2.17            | 0.38              | 29.95              | 3.65                | 1.50                | 24.63              |
| 0.85             | 2.15            | 0.35              | 30.26              | 3.71                | 1.56                | 25.10              |
| 0.9              | 2.13            | 0.33              | 27.87              | 5.11                | 2.96                | 24.20              |
| 0.95             | 2.11            | 0.32              | 25.77              | 6.35                | 4.20                | 23.42              |
| 1.0              | 2.09            | 0.30              | 25.35              | 6.75                | 4.60                | 23.47              |
| 1.1              | 2.06            | 0.27              | 25.74              | 6.91                | 4.76                | 24.14              |
| 1.2              | 2.04            | 0.25              | 27.11              | 6.55                | 4.40                | 25.25              |
| 1.3              | 2.02            | 0.23              | 27.14              | 6.84                | 4.69                | 25.66              |
| 1.4              | 2.00            | 0.21              | 28.03              | 6.68                | 4.53                | 26.46              |
| 1.5              | 1.98            | 0.20              | 29.04              | 6.44                | 4.29                | 27.30              |
| 1.6              | 1.97            | 0.19              | 32.83              | 4.79                | 2.64                | 29.51              |
| 1.7              | 1.96            | 0.18              | 30.46              | 6.22                | 4.07                | 28.61              |
| 1.8              | 1.95            | 0.17              | 30.32              | 6.51                | 4.36                | 28.81              |
| 1.9              | 1.94            | 0.16              | 30.23              | 6.77                | 4.62                | 29.02              |
| 2.0              | 1.93            | 0.15              | 31.26              | 6.46                | 4.31                | 29.78              |
| 2.1              | 1.92            | 0.14              | 33.30              | 5.63                | 3.48                | 31.03              |
| 2.2              | 1.92            | 0.14              | 33.17              | 5.88                | 3.73                | 31.18              |
| 2.3              | 1.91            | 0.13              | 34.53              | 5.38                | 3.23                | 32.07              |
| 2.4              | 1.90            | 0.13              | 34.77              | 5.43                | 3.28                | 32.39              |
| 2.5              | 1.90            | 0.12              | 34.04              | 5.96                | 3.81                | 32.21              |
| 2.6              | 1.89            | 0.12              | 33.90              | 6.19                | 4.04                | 32.33              |
| 2.7              | 1.89            | 0.11              | 33.38              | 6.61                | 4.46                | 32.24              |
| 2.8              | 1.88            | 0.11              | 35.81              | 5.54                | 3.39                | 33.62              |
| 2.9              | 1.88            | 0.10              | 37.96              | 4.61                | 2.46                | 34.86              |
| 3.0              | 1.88            | 0.10              | 35.86              | 5.80                | 3.65                | 33.97              |
| 3.1              | 1.87            | 0.10              | 35.66              | 6.03                | 3.88                | 34.02              |
| 3.2              | 1.87            | 0.09              | 35.58              | 6.20                | 4.05                | 34.12              |
| 3.3              | 1.87            | 0.09              | 36.45              | 5.89                | 3.74                | 34.70              |
| 3.4              | 1.86            | 0.09              | 36.69              | 5.90                | 3.75                | 34.95              |
| 3.5              | 1.86            | 0.09              | 35.86              | 6.43                | 4.28                | 34.67              |
| 3.6              | 1.86            | 0.08              | 35.66              | 6.65                | 4.50                | 34.70              |
| 3.7              | 1.86            | 0.08              | 36.08              | 6.55                | 4.40                | 35.03              |
| 3.8              | 1.85            | 0.08              | 36.41              | 6.50                | 4.35                | 35.32              |
| 3.9              | 1.85            | 0.08              | 37.04              | 6.29                | 4.14                | 35.75              |
| 4.0              | 1.85            | 0.08              | 36.94              | 6.44                | 4.29                | 35.82              |
| 4.1              | 1.85            | 0.07              | 37.41              | 6.31                | 4.16                | 36.16              |
| 4.2              | 1.85            | 0.07              | 37.16              | 6.54                | 4.39                | 36.15              |
| 4.3              | 1.84            | 0.07              | 37.30              | 6.56                | 4.41                | 36.32              |
| 4.4              | 1.84            | 0.07              | 37.37              | 6.63                | 4.47                | 36.46              |
| 4.5              | 1.84            | 0.07              | 38.14              | 6.33                | 4.18                | 36.95              |
| 4.6              | 1.84            | 0.07              | 37.84              | 6.58                | 4.43                | 36.90              |
| 4.7              | 1.84            | 0.06              | 38.46              | 6.36                | 4.21                | 37.31              |
| 4.8              | 1.84            | 0.06              | 38.16              | 6.59                | 4.44                | 37.25              |
| 4.9              | 1.84            | 0.06              | 39.05              | 6.24                | 4.08                | 37.79              |
| 5.0              | 1.83            | 0.06              | 39.52              | 6.09                | 3.93                | 38.11              |
| 5.1              | 1.83            | 0.06              | 40.99              | 5.43                | 3.28                | 38.94              |
| 5.2              | 1.83            | 0.06              | 41.08              | 5.47                | 3.32                | 39.07              |
| 5.3              | 1.83            | 0.06              | 40.79              | 5.69                | 3.54                | 39.01              |

| Frequency | Distance | Wavelength | Attenuation | Gain(Isotr.) | Gain(Dipole) | Ant.-Factor |
|-----------|----------|------------|-------------|--------------|--------------|-------------|
| GHz       | m        | m          | dB          | dBi          | dBd          | dB/m        |
| 5.4       | 1.83     | 0.06       | 40.98       | 5.68         | 3.53         | 39.19       |
| 5.5       | 1.83     | 0.05       | 40.69       | 5.90         | 3.75         | 39.13       |
| 5.6       | 1.83     | 0.05       | 40.68       | 5.98         | 3.83         | 39.20       |
| 5.7       | 1.83     | 0.05       | 39.81       | 6.49         | 4.34         | 38.85       |
| 5.8       | 1.83     | 0.05       | 40.58       | 6.18         | 4.03         | 39.31       |
| 5.9       | 1.82     | 0.05       | 40.32       | 6.38         | 4.23         | 39.26       |
| 6.0       | 1.82     | 0.05       | 40.50       | 6.36         | 4.21         | 39.42       |
| 6.1       | 1.82     | 0.05       | 40.75       | 6.31         | 4.16         | 39.62       |
| 6.2       | 1.82     | 0.05       | 41.40       | 6.05         | 3.90         | 40.02       |
| 6.3       | 1.82     | 0.05       | 41.46       | 6.09         | 3.94         | 40.12       |
| 6.4       | 1.82     | 0.05       | 41.78       | 5.99         | 3.84         | 40.35       |
| 6.5       | 1.82     | 0.05       | 41.74       | 6.08         | 3.93         | 40.40       |
| 6.6       | 1.82     | 0.05       | 40.93       | 6.55         | 4.40         | 40.06       |
| 6.7       | 1.82     | 0.04       | 42.24       | 5.96         | 3.81         | 40.78       |
| 6.8       | 1.82     | 0.04       | 42.11       | 6.08         | 3.93         | 40.79       |
| 6.9       | 1.82     | 0.04       | 43.94       | 5.23         | 3.08         | 41.77       |
| 7.0       | 1.82     | 0.04       | 43.55       | 5.49         | 3.34         | 41.63       |



## USLP 9142 Skizze der Bezugspunkte USLP 9142 Sketch of Reference Points

|                                                                                     |                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Mitte-Prüfling</b><br/>Diese Anordnung wird vorwiegend für Emissionsmessungen verwendet.</p> <p><b>Center-EuT</b><br/><i>This setup is most popular for Emission testing.</i></p> |
|  | <p><b>Spitze-Prüfling</b><br/>Diese Anordnung wird vorwiegend für Immunitätsprüfungen verwendet.</p> <p><b>Tip-EuT</b><br/><i>This setup is most popular for Immunity testing.</i></p>  |

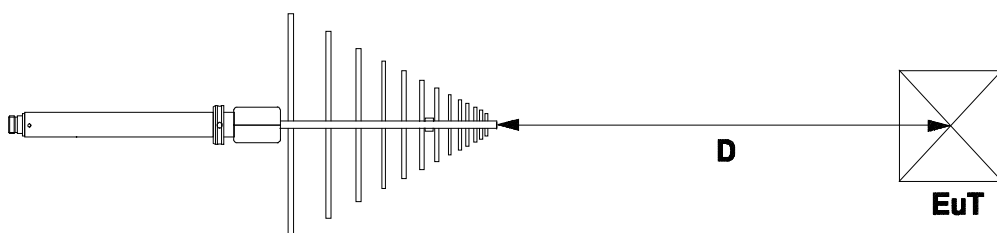
## **USLP 9142 Erzeugung definierter Feldstärken** **USLP 9142 Generating defined Fieldstrength**

Erzeugung von Feldstärken unter Freiraumbedingungen vor der Spitze der Log.-Per. Antenne (siehe Skizze und Angaben bei den Kurvenscharen). Wenn Anteile von Umgebungsreflexionen vorhanden sind, kann dies zu einer frequenz- und höhenabhängigen Änderung der Feldstärke führen. Die Leistungsangaben beziehen sich auf eine 50  $\Omega$  Quellimpedanz und unmodulierte Hochfrequenz (CW). Bei 80% Amplitudenmodulation ist die 1.8-fache Spannungssteuerung erforderlich, was in einem ca. 3.24-fachen Leistungsbedarf resultiert. Zur Steigerung der Feldstärke um den Faktor 10 ist die 100-fache Verstärkerleistung erforderlich.

**Bei der Erzeugung von hohen Feldstärken müssen die relevanten Sicherheitsvorschriften und Normen beachtet werden! Missachtung dieser Vorschriften kann zu Schädigungen der Gesundheit führen!**

*Field strength generated under free-space conditions at a separation from the antenna tip (see diagrams for several combinations of power and distance). If environmental reflections are present, this may lead to frequency and height dependent fieldstrengths. The power figures refer to a 50  $\Omega$  source and an unmodulated (cw) signal. An 80% Amplitude Modulation requires a 1.8 times higher voltage, resulting in 3.24 times higher power compared to cw. A fieldstrength increase of factor 10 requires 100 times amplifier-power.*

***The safety precautions and relevant standards must be considered while performing tests with high field-strength! Ignoring these standards and precautions may result in severe danger for health!***

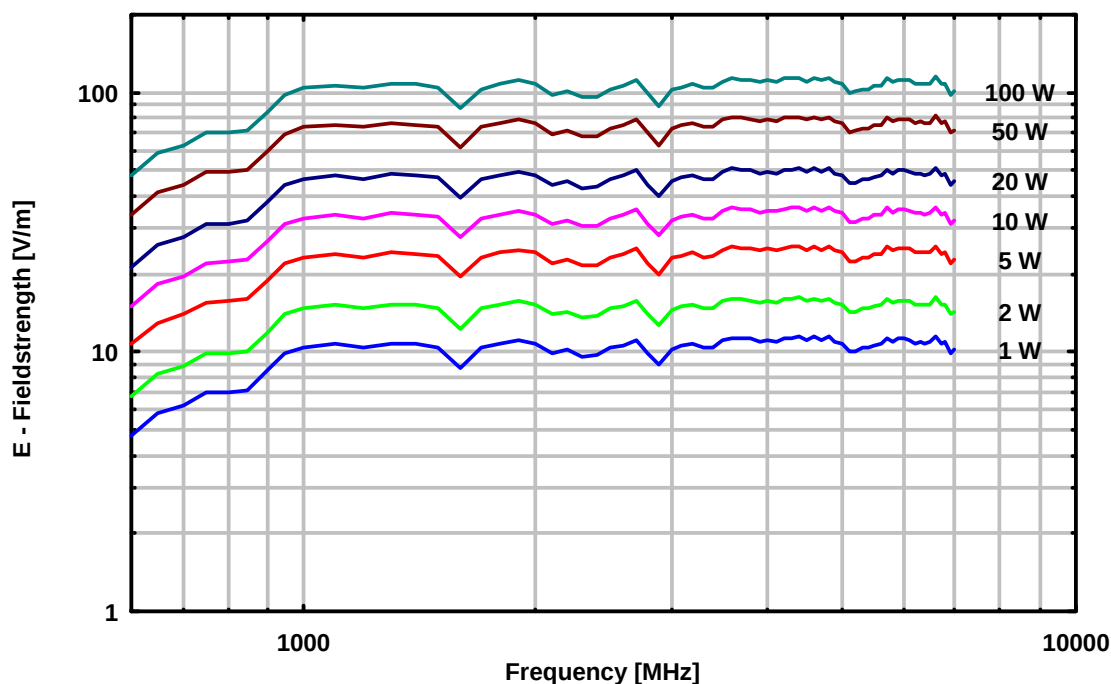




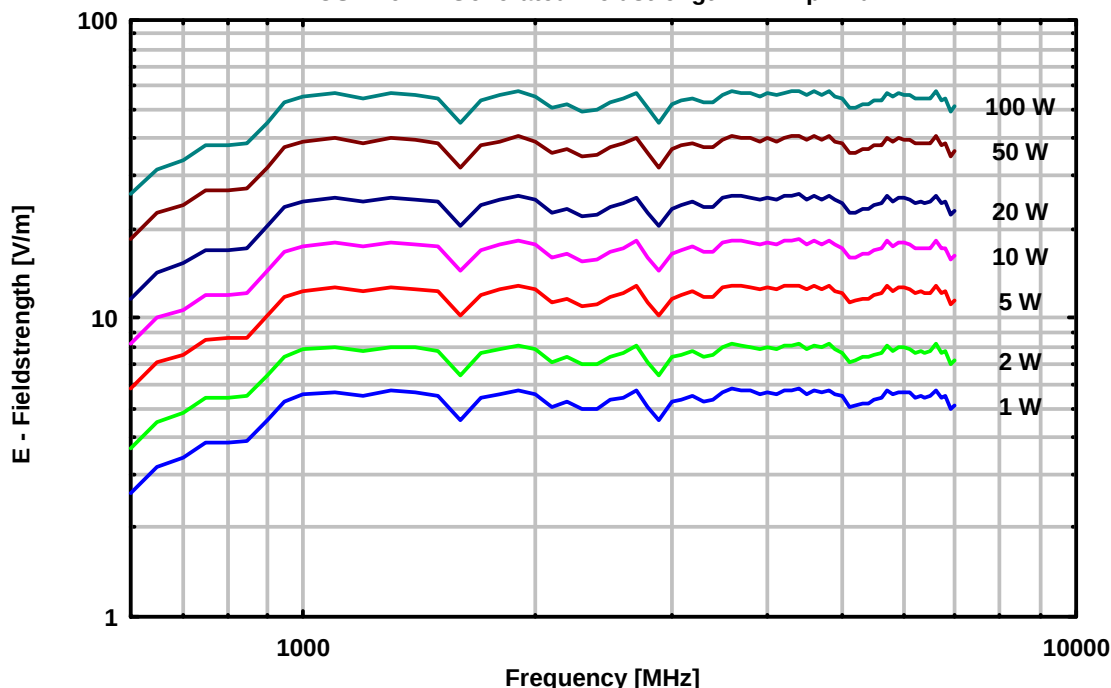
**USLP 9142 Erzeugte Feldstärke**  
**USLP 9142 Generated Fieldstrength**

Erzeugte Elektrische Feldstärke vor der Antennenspitze  
unmoduliert, Eingangsleistung an N-Buchse, Reflexionsfreie Umgebung  
*Generated Electrical Fieldstrength in front of Antenna Tip*  
*no modulation, Input Power at N-Connector, Anechoic Environmental Conditions*

**USLP 9142 Erzeugte Feldstärke in 1 m Abstand Spitze - Prüfling**  
**USLP 9142 Generated Fieldstrength 1 m Tip - EuT**

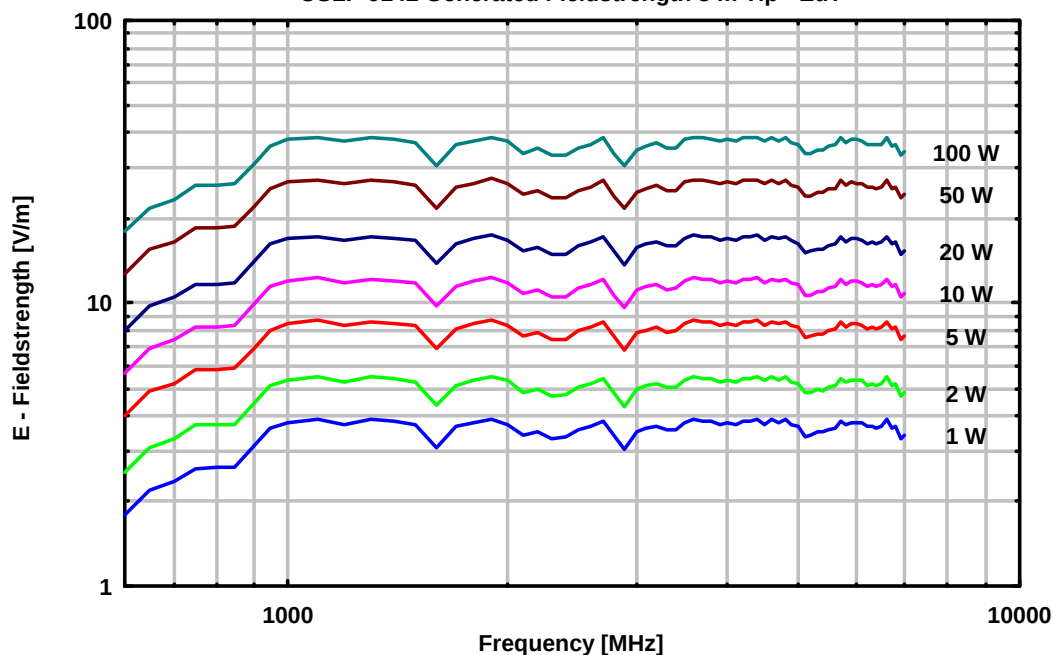


**USLP 9142 Erzeugte Feldstärke in 2 m Abstand Spitze - Prüfling**  
**USLP 9142 Generated Fieldstrength 2 m Tip - EuT**





USLP 9142 Erzeugte Feldstärke in 3 m Abstand Spitze - Prüfling  
USLP 9142 Generated Fieldstrength 3 m Tip - EuT



USLP 9142 Erzeugte Feldstärke in 4 m Abstand Spitze - Prüfling  
USLP 9142 Generated Fieldstrength 4 m Tip - EuT

