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APPLICATION FORM FOR TESTING RADIO SPECTRUM MATTERS OF 5 GHz RLAN EQIPMENT

With reference to the requirements in ETSI EN 301 893 V2.2.1, the following information is provided by the manufacturer. In case that multiple options are available, check all that apply.

a) Nominal channel bandwidth(s):

Nominal channel bandwidth 1: ____ MHz
Nominal channel bandwidth 2: ____ MHz
Nominal channel bandwidth 3: ____ MHz

Associated nominal centre frequencies:

For nominal channel bandwidth 1:

for the band 5 150 MHz to 5 250 MHz (sub-band 1): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 250 MHz to 5 350 MHz (sub-band 2): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 470 MHz to 5 725 MHz (sub-band 3): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 725 MHz to 5 850 MHz (sub-band 4): ____ MHz; ____ MHz; ____ MHz; ____ MHz;

For nominal channel bandwidth 2:

for the band 5 150 MHz to 5 250 MHz (sub-band 1): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 250 MHz to 5 350 MHz (sub-band 2): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 470 MHz to 5 725 MHz (sub-band 3): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 725 MHz to 5 850 MHz (sub-band 4): ____ MHz; ____ MHz; ____ MHz; ____ MHz;

For nominal channel bandwidth 3:

for the band 5 150 MHz to 5 250 MHz (sub-band 1): ____ MHz; ____ MHz; ____ MHz; ____ MHz;

for the band 5 250 MHz to 5 350 MHz (sub-band 2): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 470 MHz to 5 725 MHz (sub-band 3): ____ MHz; ____ MHz; ____ MHz; ____ MHz;
for the band 5 725 MHz to 5 850 MHz (sub-band 4): ____ MHz; ____ MHz; ____ MHz; ____ MHz;

b) For equipment that supports multi-channel operation:

- The (maximum) number of channels that are supported for multi-channel operation: ____
- It is possible that these channels are in different sub-bands: ☐ Yes ☐ No

☐ equipment supports a multi-channel configuration with adjacent channels as described in clause 4.2.4.2.2.2
Supported channel configurations for groups of adjacent channels for multi-channel operation: ____

☐ equipment supports a multi-channel configuration with non-adjacent channels as described in clause 4.2.4.2.2.3
Supported combinations of channels and configurations for groups of adjacent channels for multichannel operation: ____

- In case of channels not used for transmission in multi-channel operation within a group of adjacent channels

☐ equipment supports channel edge mask given in figure 2 in clause 4.2.4.2.2.2
☐ equipment supports channel edge mask given in figure 3 in clause 4.2.4.2.2.2
☐ equipment supports channel edge mask given in figure 4 in clause 4.2.4.2.2.2

- In case of Load Based Equipment (LBE)

☐ equipment supports option 1 as described in clause 4.2.7.3.2.3 or in clause B.2.2.7.3.2.3
☐ equipment supports option 2 as described in clause 4.2.7.3.2.3 or in clause B.2.2.7.3.2.3

For equipment implementing option 1 (see clause 4.2.7.3.2.3 or clause B.2.2.7.3.2.3), the number of channels used for multi-channel operation when performing the test described in clause 5.4.9.3.2.3.1: ____

c) Transmit operating modes (see clause 5.3.3.2):

☐ **operating mode 1**: single antenna equipment
- ☐ equipment with only 1 antenna
- ☐ equipment with diversity antennas but only 1 antenna active at any moment in time
- ☐ smart antenna systems with 2 or more antennas but operating in a (legacy) mode where only 1 antenna is used

☐ **operating mode 2**: smart antenna systems - multiple antennas without beamforming
- ☐ single spatial stream / standard throughput
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 1
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 2
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 3

☐ **operating mode 3**: smart antenna systems - multiple antennas with beamforming
- ☐ single spatial stream / standard throughput
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 1
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 2
- ☐ high throughput (> 1 spatial stream) using nominal channel bandwidth 3

d) For equipment with smart antenna systems or multiple antenna systems:

- For operating mode 2
  - Number of receive chains: ____
  - Number of transmit chains: ____
  - Equal power distribution among the transmit chains: ☐ Yes ☐ No

- For operating mode 3
  - Number of receive chains: ____
  - Number of transmit chains: ____
  - Equal power distribution among the transmit chains: ☐ Yes ☐ No
  - Maximum (additional) beamforming gain: ____ dB

NOTE: Beamforming gain does not include the basic gain of a single antenna (assembly).

e) Transmit Power Control (TPC):

- Does the equipment implement TPC: ☐ Yes ☐ No

f) For equipment with TPC:

The lowest and highest power level (or lowest and highest EIRP level in case of integrated antenna equipment), intended antenna assemblies and corresponding operating frequency range for TPC (or for each of the TPC ranges if more than one is implemented).

TPC range 1:

- Applicable frequency range (check all that apply):
  ☐ sub-band 1
  ☐ sub-band 2
  ☐ sub-band 3
  ☐ sub-band 4
  Simultaneous transmissions in multiple sub-bands: ☐ Yes ☐ No

- Power level reference:
  Indicate whether the power levels specified are transmitter output power (Tx out) levels or EIRP levels in case of integrated antenna equipment.

  Power levels specified for: ☐ Tx out ☐ EIRP

- For more than one transmit chain:
  If more than one transmit chain is present (e.g. in the case of smart antenna systems), the power levels in following table represent the TPC range per active transmit chain (and per sub-band in case of multichannel operation).

	Sub-band	Operating mode 1 (dBm)	Operating mode 2 (dBm)	Operating mode 3 (dBm)
Highest power level	1			
	2			
	3			
	4			
Lowest power level	1			
	2			
	3			
	4			

- Beamforming:

  Beamforming possible: ☐ yes ☐ no

- Intended antenna assemblies:

Antenna assembly name	Antenna gain (dBi)	Operating mode	Sub-band	Beamforming gain (dB)	Highest power level (dBm)	Lowest power level (dBm)
<Antenna 1>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			

			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 2>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 3>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			

			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			

- DFS threshold: ____ dBm ☐ at the antenna connector ☐ in front of the antenna

TPC range 2:

- Applicable frequency range (check all that apply):
  ☐ sub-band 1
  ☐ sub-band 2
  ☐ sub-band 3
  ☐ sub-band 4
  Simultaneous transmissions in multiple sub-bands: ☐ Yes ☐ No

- Power level reference:
  Indicate whether the power levels specified are transmitter output power (Tx out) levels or EIRP levels in case of integrated antenna equipment.

  Power levels specified for: ☐ Tx out ☐ EIRP

- For more than one transmit chain:
  If more than one transmit chain is present (e.g. in the case of smart antenna systems), the power levels in following table represent the TPC range per active transmit chain (and per sub-band in case of multichannel operation).

	Sub-band	Operating mode 1 (dBm)	Operating mode 2 (dBm)	Operating mode 3 (dBm)
Highest power level	1			
	2			
	3			
	4			
Lowest power level	1			
	2			
	3			
	4			

- Beamforming:

  Beamforming possible: ☐ yes ☐ no

- Intended antenna assemblies:

Antenna assembly name	Antenna gain (dBi)	Operating mode	Sub-band	Beamforming gain (dB)	Highest power level (dBm)	Lowest power level (dBm)
<Antenna 1>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			

			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 2>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 3>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			

			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			

- DFS threshold: ____ dBm ☐ at the antenna connector ☐ in front of the antenna

g) For equipment without TPC:

Power setting 1:

- Applicable frequency range (check all that apply):
  ☐ sub-band 1
  ☐ sub-band 2
  ☐ sub-band 3
  ☐ sub-band 4
  Simultaneous transmissions in multiple sub-bands: ☐ Yes ☐ No

- Power level reference:
  Indicate whether the power levels specified are transmitter output power (Tx out) levels or EIRP levels in case of integrated antenna equipment.

  Power levels specified for: ☐ Tx out ☐ EIRP

- For more than one transmit chain:
  If more than one transmit chain is present (e.g. in the case of smart antenna systems), the power levels in following table represent the power settings per active transmit chain (and per sub-band in case of multichannel operation).

Sub-band	Operating mode 1 (dBm)	Operating mode 2 (dBm)	Operating mode 3 (dBm)

1			
2			
3			
4			

- Beamforming:

  Beamforming possible: ☐ yes ☐ no

- Intended antenna assemblies:

Antenna assembly name	Antenna gain (dBi)	Operating mode	Sub-band	Beamforming gain (dB)	Highest power level (dBm)	Lowest power level (dBm)
<Antenna 1>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 2>		Mode 1	1			

			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 3>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			

			4			

- DFS threshold: ____ dBm ☐ at the antenna connector ☐ in front of the antenna

Power setting 2:

- Applicable frequency range (check all that apply):
  ☐ sub-band 1
  ☐ sub-band 2
  ☐ sub-band 3
  ☐ sub-band 4
  Simultaneous transmissions in multiple sub-bands: ☐ Yes ☐ No

- Power level reference:
  Indicate whether the power levels specified are transmitter output power (Tx out) levels or EIRP levels in case of integrated antenna equipment.

  Power levels specified for: ☐ Tx out ☐ EIRP

- For more than one transmit chain:
  If more than one transmit chain is present (e.g. in the case of smart antenna systems), the power levels in following table represent the power settings per active transmit chain (and per sub-band in case of multichannel operation).

Sub-band	Operating mode 1 (dBm)	Operating mode 2 (dBm)	Operating mode 3 (dBm)
1			
2			
3			
4			

- Beamforming:

  Beamforming possible: ☐ yes ☐ no

- Intended antenna assemblies:

Antenna assembly name	Antenna gain (dBi)	Operating mode	Sub-band	Beamforming gain (dB)	Highest power level (dBm)	Lowest power level (dBm)
<Antenna 1>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 2>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			

			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			
<Antenna 3>		Mode 1	1			
			2			
			3			
			4			
		Mode 2	1			
			2			
			3			
			4			
		Mode 3	1			
			2			
			3			
			4			
		Mode 4	1			
			2			
			3			
			4			

- DFS threshold: ____ dBm ☐ at the antenna connector ☐ in front of the antenna

h) DFS operating mode(s):

☐ primary device
☐ secondary device with radar detection
☐ secondary device without radar detection

i) With regard to DFS:

The equipment has an off-channel CAC function when operating in sub-band 2 or in sub-band 3: ☐ Yes ☐ No

j) For equipment with off-channel CAC function:

Off-channel CAC time:

- For channels in sub-band 2: ____ hours
- For channels in sub-band 3 outside the 5 600 MHz to 5 650 MHz range: ____ hours
- For channels in sub-band 3 (partially) within the 5 600 MHz to 5 650 MHz range: ____ hours

k) User Access Restrictions (UAR):

☐ equipment is constructed to conform to the requirements contained in clause 4.2.10

☐ equipment is constructed to conform to the requirements contained in clause B.2.2.10

l) Ad-hoc mode:

☐ no ad-hoc operation
☐ ad-hoc operation in sub-band 1 without DFS
☐ ad-hoc operation with DFS

m) Operating frequency range(s):

Range 1: ☐ sub-band 1
Range 2: ☐ sub-band 2
Range 3: ☐ sub-band 3
Range 4: ☐ sub-band 4
Range 5: ☐ other, please specify: _____

n) Operating temperature and supply voltage range:

☐ -20 °C to +55 °C (outdoor & indoor usage)
☐ 0 °C to +35 °C (indoor usage only)
☐ other: _____

Supply voltage details provided for:
☐ stand-alone equipment
☐ combined (or host) equipment
☐ test jig

Supply voltage
☐ AC mains AC voltage: minimum: ___ nominal: ___ maximum: ___
☐ DC DC voltage: minimum: ___ nominal: ___ maximum: ___

In case of DC, indicate the type of power source:
☐ internal power supply
☐ external power supply or AC/DC adapter
☐ battery
- ☐ nickel cadmium
- ☐ alkaline
- ☐ nickel-metal hydride
- ☐ lithium-ion
- ☐ lead acid (vehicle regulated)
- ☐ other _____

o) Test sequence / test software used (see also clause 5.3.1.2):

_____
_____
_____

p) Type of equipment:

☐ stand-alone
☐ combined equipment (equipment where the radio part is fully integrated within another type of equipment)
☐ plug-in radio device (equipment intended for a variety of host systems)
☐ other _____

q) Adaptivity (channel access mechanism):

☐ Frame Based Equipment (FBE)
☐ Load Based Equipment (LBE)

r) With regards to adaptivity for FBE:

☐ FBE supports operating as an initiating device
☐ FBE supports operating as a responding device
FBE implements the following Fixed Frame Period(s) (FFPs):
_____ ms
_____ ms
_____ ms

s) With regards to adaptivity for LBE:

☐ LBE supports operating as a supervising device
☐ LBE supports operating as a supervised device

Priority classes supported by the equipment (see clause 4.2.7.3.2.4):

- When operating as a supervising device
  ☐ priority class 4 (highest priority)
  ☐ priority class 3
  ☐ priority class 2
  ☐ priority class 1 (lowest priority)

- When operating as a supervised device
- ☐ priority class 4 (highest priority)
- ☐ priority class 3
- ☐ priority class 2
- ☐ priority class 1 (lowest priority)

☐ LBE supports using note 1 in table 6 in clause 4.2.7.3.2.4
☐ LBE supports using note 1 in table 7 in clause 4.2.7.3.2.4
☐ LBE, when operating as a supervising device, supports using note 2 in table 6 in clause 4.2.7.3.2.4

☐ LBE supports operating as an initiating device
☐ LBE supports operating as a responding device

t) Minimum performance criteria (see clause 4.2.8.3 and clause 4.2.9.3) that correspond to the intended use of the equipment:

_____
_____
_____

u) Theoretical maximum radio performance of the equipment (e.g. maximum throughput) (see clause 5.4.9.3.2):

_____

v) Equipment supports a country determination capability as defined in clause B.2.2.11:

☐ **Yes** ☐ **No**

Additional information provided by the manufacturer

Modulation

Can the transmitter operate unmodulated? ☐ Yes ☐ No

Duty cycle

The transmitter is intended for : ☐ continous duty
☐ intermittent duty
☐ continuous operation possible for testing purposes

About the UUT

☐ The equipment submitted are representative production models.
☐ If not, the equipment submitted are pre-production models.
☐ If pre-production equipment is submitted, the final production equipment will be identical in all respects with the equipment tested.
☐ If not, supply full details:

_____
_____

List of ancillary and/or support equipment provided by the manufacturer

☐ spare batteries (e.g. for portable equipment)
☐ battery charging device
☐ external power supply or AC/DC adapter
☐ test jig or interface box
☐ RF test fixture (for equipment with integrated antennas)
☐ host system manufacturer: _____
model no.: _____
model name: _____
☐ combined equipment manufacturer: _____
model no.: _____
model name: _____
☐ user manual
☐ technical documentation (handbook and circuit diagrams)