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## Annex E (informative): Application form for testing

### E.1 Introduction

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the application form pro forma in this annex so that it can be used for its intended purposes and may further publish the completed application form.

The form contained in this annex may be used by the manufacturer to comply with the requirement contained in clause 5.4.1 to provide the necessary information about the equipment to the test laboratory prior to the testing. It contains product information as well as other information which might be required to define which configurations are to be tested, which tests are to be performed as well the test conditions.

This application form should form an integral part of the test report.

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### E.2 Information as required by ETSI EN 300 328 V2.2.1, clause 5.4.1

In accordance with ETSI EN 300 328, clause 5.4.1, the following information is provided by the manufacturer.

**a) The type of wide band datatransmission equipment:**

- FHSS  
 non-FHSS

**b) In case of FHSS:**

- In case of non-Adaptive FHSS equipment:  
     The number of Hopping Frequencies: .....
- In case of Adaptive FHSS equipment:  
     The maximum number of Hopping Frequencies: .....  
     The minimum number of Hopping Frequencies: .....
- The (average) Dwell Time: .....

**c) Adaptive/non-adaptive equipment:**

- non-adaptive Equipment  
 adaptive Equipment without the possibility to switch to a non-adaptive mode  
 adaptive Equipment which can also operate in a non-adaptive mode

**d) In case of adaptive equipment:**

The maximum Channel Occupancy Time implemented by the equipment: ..... ms

The equipment has implemented an LBT based DAA mechanism

- In case of non-FHSS equipment:  
      The equipment is Frame Based equipment

- The equipment is Load Based equipment
- The equipment can switch dynamically between Frame Based and Load Based equipment

The CCA time implemented by the equipment: .....  $\mu$ s

- The equipment has implemented a non-LBT based DAA mechanism
- The equipment can operate in more than one adaptive mode

**e) In case of non-adaptive Equipment:**

The maximum RF Output Power (e.i.r.p.): ...**<10**.. dBm

The maximum (corresponding) Duty Cycle: ...**60**... %

Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared):

.....

.....

.....

**f) The worst case operational mode for each of the following tests:**

- RF Output Power  
..... **< 10d dBm** .....
- Power Spectral Density  
..... **10 dBm / 2 MHz** .....
- Duty cycle, Tx-Sequence, Tx-gap  
..... **Not applicable** .....
- Accumulated Transmit time, Frequency Occupation & Hopping Sequence (only for FHSS equipment)  
.....
- Hopping Frequency Separation (only for FHSS equipment)  
.....
- Medium Utilization  
..... **Not applicable** .....
- Adaptivity & Receiver Blocking  
..... **According to 4.3.2.11** .....
- Nominal Channel Bandwidth  
..... **2 MHz** .....
- Transmitter unwanted emissions in the OOB domain  
..... **< -30 dBm** .....
- Transmitter unwanted emissions in the spurious domain  
..... **< -30 dBm** .....

- Receiver spurious emissions

- 47 dBm  
.....

**g) The different transmit operating modes (tick all that apply):**

- Operating mode 1: Single Antenna Equipment
- Equipment with only one antenna
- Equipment with two diversity antennas but only one antenna active at any moment in time
- Smart Antenna Systems with two or more antennas, but operating in a (legacy) mode where only one antenna is used (e.g. IEEE 802.11™ legacy mode in smart antenna systems)
- Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming
- Single spatial stream/Standard throughput/(e.g. IEEE 802.11™ legacy mode)
- High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
- High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

NOTE 1: Add more lines if more channel bandwidths are supported.

- Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming
- Single spatial stream/Standard throughput (e.g. IEEE 802.11™ legacy mode)
- High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
- High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

NOTE 2: Add more lines if more channel bandwidths are supported.

**h) In case of Smart Antenna Systems:**

- The number of Receive chains: .....
- The number of Transmit chains: .....
- symmetrical power distribution
- asymmetrical power distribution

In case of beam forming, the maximum (additional) beam forming gain: ..... dB

NOTE: The additional beam forming gain does not include the basic gain of a single antenna.

**i) Operating Frequency Range(s) of the equipment:**

- Operating Frequency Range 1: 2402 MHz to 2480 MHz
- Operating Frequency Range 2: ..... MHz to ..... MHz

NOTE: Add more lines if more Frequency Ranges are supported.

**j) Nominal Channel Bandwidth(s):**

- Nominal Channel Bandwidth 1: 1..... MHz
- Nominal Channel Bandwidth 2: 2..... MHz

NOTE: Add more lines if more channel bandwidths are supported.

**k) Type of Equipment (stand-alone, combined, plug-in radio device, etc.):**

- 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 .....

**l) The normal and the extreme operating conditions that apply to the equipment:****Normal operating conditions (if applicable):**

Operating temperature: ..... ° C

Other (please specify if applicable): .....

**Extreme operating conditions:**

Operating temperature range: Minimum: ..... ° C Maximum ..... ° C

Other (please specify if applicable): ..... Minimum: ..... Maximum .....

- Details provided are for the:  stand-alone equipment
- combined (or host) equipment
- test jig

**m) The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p. levels:**

## • Antenna Type:

- Integral Antenna (information to be provided in case of conducted measurements)

Antenna Gain: ..... dBi

If applicable, additional beamforming gain (excluding basic antenna gain): ..... dB

- Temporary RF connector provided
- No temporary RF connector provided

- Dedicated Antennas (equipment with antenna connector)
- Single power level with corresponding antenna(s)
- Multiple power settings and corresponding antenna(s)

Number of different Power Levels: .....

Power Level 1: ..... dBm

Power Level 2: ..... dBm

Power Level 3: ..... dBm

NOTE 1: Add more lines in case the equipment has more power levels.

NOTE 2: These power levels are conducted power levels (at antenna connector).

- For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable

**Power Level 1:** ..... dBm

Number of antenna assemblies provided for this power level: .....

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			
3			
4			

NOTE 3: Add more rows in case more antenna assemblies are supported for this power level.

**Power Level 2:** ..... dBm

Number of antenna assemblies provided for this power level: .....

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			
3			
4			

NOTE 4: Add more rows in case more antenna assemblies are supported for this power level.

**Power Level 3:** ..... dBm

Number of antenna assemblies provided for this power level: .....

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			
3			
4			

NOTE 5: Add more rows in case more antenna assemblies are supported for this power level.

**n) The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:**

- Details provided are for the:  stand-alone equipment  
 combined (or host) equipment  
 test jig

Supply Voltage  AC mains    State AC voltage    ..... V  
 DC                    State DC voltage    ..... V

In case of DC, indicate the type of power source

- Internal Power Supply  
 External Power Supply or AC/DC adapter  
 Battery  
 Other: .....

**o) Describe the test modes available which can facilitate testing:**

Bluetooth DTM  
 .....  
 .....  
 .....

- p) The equipment type (e.g. Bluetooth<sup>®</sup>, IEEE 802.11<sup>™</sup>, IEEE 802.15.4<sup>™</sup>, proprietary, etc.):  
Bluetooth Low Energy  
.....
- q) If applicable, the statistical analysis referred to in clause 5.4.1 q)  
(to be provided as separate attachment)
- r) If applicable, the statistical analysis referred to in clause 5.4.1 r)  
(to be provided as separate attachment)
- s) Geo-location capability supported by the equipment:
- Yes
- The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user
- No
- t) Describe the minimum performance criteria that apply to the equipment (see clause 4.3.1.12.3 or clause 4.3.2.11.3):  
.....  
.....  
.....

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## E.3 Configuration for testing (see clause 5.3.2.3 of ETSI EN 300 328 V2.2.1)

From all combinations of conducted power settings and intended antenna assembly(ies) specified in clause 5.4.1 m), specify the combination resulting in the highest e.i.r.p. for the radio equipment.

Unless otherwise specified in ETSI EN 300 328, this power setting is to be used for testing against the requirements of ETSI EN 300 328. In case there is more than one such conducted power setting resulting in the same (highest) e.i.r.p. level, the highest power setting is to be used for testing. See also ETSI EN 300 328, clause 5.3.2.3.

Highest overall e.i.r.p. value: .....	dBm	Antenna Assembly #: .....
Corresponding Antenna assembly gain: .....	dBi	Listed as Power Setting #: .....
Corresponding conducted power setting: .....	dBm	
(also the power level to be used for testing)		

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## E.4 Additional information provided by the manufacturer

### E.4.1 Modulation

ITU Class(es) of emission: F1D.....

Can the transmitter operate unmodulated?  yes  no

### E.4.2 Duty Cycle

The transmitter is intended for:  Continuous duty

Intermittent duty

Continuous operation possible for testing purposes

### E.4.3 About the UUT

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

.....

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### E.4.4 Additional items and/or supporting equipment provided

- 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 #: .....
- Model name: .....
- Combined equipment   Manufacturer: .....
- Model #: .....
- Model name: .....
- User Manual
- Technical documentation (Handbook and circuit diagrams)