



Report form for testing to ETS 300 718

**Radio Equipment and Systems (RES)
Avalanche Beacons;
Transmitter - receiver systems**

The submission documentation to a National Regulatory Body for Type approval purposes shall consist of two parts;

**Part one. Application Form
Part two. Test report form**

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REPORT FORM FOR TESTING TO ETS 300 718

The accreditation terms of the laboratory will prescribe the format and content of the title page.

As a minimum the title page should include the following:

1. Name of the laboratory performing the tests
2. Test report reference number
3. The name of the manufacturer
4. Reference to ETS 300 718
5. Manufacturer's declared type designation
6. Equipment serial number

REPORT FORM FOR TESTING TO ETS 300 718

The test laboratory should note the following when using the test report form:

1. In the "list of measurements", sub-clause numbers have not been included because full testing may not be required in all cases. The test laboratory should enter the sub-clause numbers of tests actually conducted in each case.
2. The relevant reference number from the list "Test equipment and ancillaries used for tests" should be entered under the heading "Test equipment used" for each test.
3. For equipment designed for intermittent use, take care that the stated duty cycle is not exceeded. The actual duty cycle used should be stated on the test report.
4. Where the equipment under test can not be tested in an unmodulated condition, then full description of the modulated signal should be given.
5. For equipment with an integral antenna state, where applicable, whether a test fixture, temporary connector or permanent internal connector is used.
6. For battery operated equipment, state whether the recommended internal batteries are used or the external test power source.
7. For radiated measurements state the type of test site used.
8. It is recommended that where clarification of a test method or an agreed test procedure is required, this should be described on the final page of the test report title "Additional information supplementary to the standard test report".
9. The bandwidth column in the spurious emission tables refers to the bandwidth of the measuring receiver.
10. No undefined abbreviations are to be used in the test report.

NOTE

Page numbers have been temporarily added to the TEST REPORT FORM to facilitate drafting. When the document is approved the numbers will be removed.

TEST REPORT REFERENCE

LIST OF MEASUREMENTS

The complete list of measurements called for in ETS 300 -718 is given below.

SUB-CLAUSE	PARAMETER TO BE MEASURED	PAGE
Environmental tests		
7.2.....	Drop test on hard surface	.....
7.3.....	Temperature tests	.....
7.4.....	Immersion test	.....
7.5.....	Solar radiation	.....
7.6.....	Tensile test	.....
Transmitter parameters		
8.1.....	Modulation and carrier keying	.....
8.2.....	Frequency error	.....
8.3.....	Output field strength (H-field)	.....
8.4.2....	Spurious emissions - H-field strength	.....
8.4.3....	Spurious emissions –Effective radiated power	.....
Receiver parameters		
9.1.....	Receiver sensitivity	.....
9.2.....	Changes in the received signals	.....

TEST REPORT REFERENCE.....

Ambient temperature.....°C

Relative humidity.....%

ENVIRONMENTAL TESTS

SUB-CLAUSE 7.2 TO 7.6

Sub-clause	Title	Meet the requirement		Remarks
		Yes	No	
7.2	Drop test on hard surface			
7.3	Temperature tests			
7.3.2	Dry heat cycle			
7.3.3	Low temperature cycle			
7.4	Immersion test			
7.5	Solar radiation			
7.6	Tensile test			

REFERENE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

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TEST REPORT REFERENCE.....

Ambient temperature.....°C

Relative humidity.....%

MODULATION AND CARRIER KEYING

SUB-CLAUSE 8.1

Maximum rated transmitter output dB (µA/m)

Transmitter operating Modulated/

f ₁ = 457 kHz			f ₂ = 2 275 Hz		
On time (ms)	Off time (ms)	Period (ms)	On time (ms)	Off time (ms)	Period (ms)
Measurement uncertainty (ms)					

LIMIT SUB-CLAUSE 8.1

The modulation shall be of type A1A.
The carrier keying shall be (figure 1):

- on time: 70 ms minimum;
- off time: 200 ms minimum;
- period: 0,9 ± 0,4 s (on time plus off time).

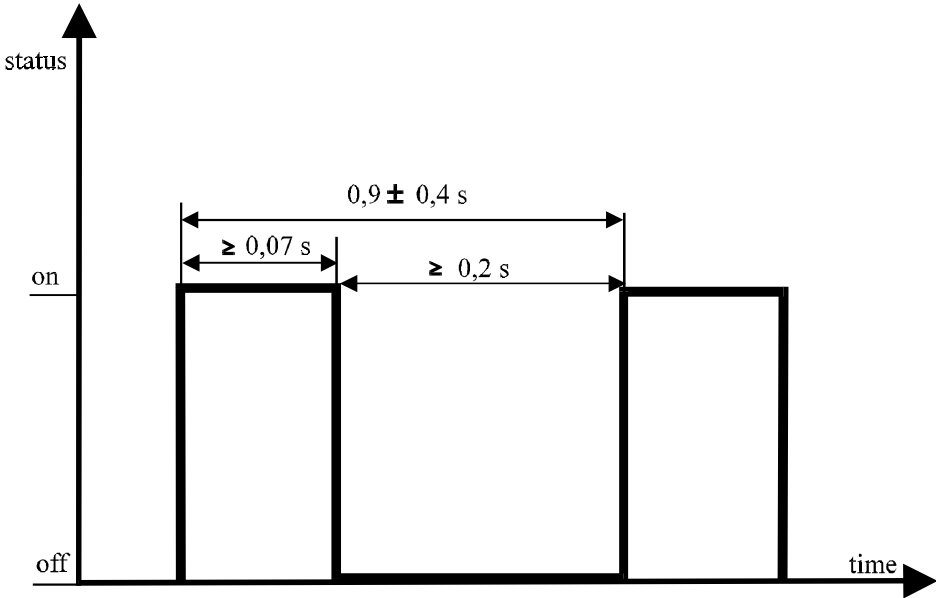


Figure 1

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

.....
.....

TEST REPORT REFERENCE.....

Ambient temperature.....°C

Relative humidity.....%

FREQUENCY ERROR

SUB-CLAUSE 8.2

Maximum rated transmitter output dB (µA/m)

Transmitter operating/standby* Modulated/Unmodulated*

*(Delete whichever is inappropriate)

Type	Frequency		Measured frequency	Frequency error
Type 1	f ₁ = 457 kHz	T _{nom} (.....)°C	V _{nom} (.....)V	
		T _{min} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
		T _{max} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
Type 2	f ₁ = 457 kHz	T _{nom} (.....)°C	V _{nom} (.....)V	
		T _{min} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
		T _{max} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
	f ₂ = 2 275 Hz	T _{nom} (.....)°C	V _{nom} (.....)V	
		T _{min} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
		T _{max} (.....)°C	V _{min} (.....)V	
			V _{max} (.....)V	
Measurement uncertainty (Hz)				

LIMIT SUB-CLAUSE 8.2.3

Type	Frequency	Maximum frequency error
Type 1	f ₁ = 457 kHz	± 100 Hz
Type 2	f ₁ = 457 kHz	± 100 Hz
	f ₂ = 2 275 Hz	± 20 Hz

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

.....

TEST REPORT REFERENCE

Ambient temperature°C

Relative humidity%

OUTPUT FIELD STRENGTH (H-FIELD)

SUB-CLAUSE 8.3

Rated field strength (maximum) dBµA/m at 10 metres

Antenna size m²

Test conditions		Transmitter field strength (dBµA/m)	
		f ₁ = 457 kHz	f ₂ =2275 Hz
T _{nom} (.....)°C	V _{nom} (.....)V		
T _{min} (.....)°C	V _{nom} (.....)V		
	V _{min} (.....)V		
	V _{max} (.....)V		
T _{max} (.....)°C	V _{nom} (.....)V		
	V _{min} (.....)V		
	V _{max} (.....)V		
Maximum deviation from rated output under normal test conditions (dB)			
Measurement uncertainty (dBµA/m)			

LIMIT SUB-CLAUSE 8.3.3

The minimum transmitted field strength shall not be lower than:

Type	Frequency	10 m measuring distance (µA/m)
Type 1	f ₁ = 457 kHz	0,5
Type 2	f ₁ = 457 kHz	0,5
	f ₂ = 2 275 Hz	10

The maximum transmitted field strength shall not exceed:

Type	Frequency	10 m measuring distance (µA/m)
Type 1	f ₁ = 457 kHz	2,16
Type 2	f ₁ = 457 kHz	2,16
	f ₂ = 2 275 Hz	108

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

.....

TEST REPORT REFERENCE.....

Ambient temperature.....°C

Relative humidity.....%

RECEIVER SENSITIVITY

SUB-CLAUSES 9.1

Transmitter operating/standby*

Modulated/Unmodulated*

*(Delete whichever is inappropriate)

Frequency	Receiver level when S/N ratio is 6 dB
f ₁ = 457 kHz	
f ₂ = 2 275 Hz	

LIMIT SUB-CLAUSE 9.1.3

The S/N of minimum 6 dB shall be achieved for the field strengths values given in table.

$$S/N=(S + N)/N$$

where: S = wanted signal;
N = noise.

Type	Frequency	Field strengths
Type 1	f ₁ = 457 kHz	80 nA/m
Type 2	f ₁ = 457 kHz f ₂ = 2275 Hz	200 nA/m 10 μA/m

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

.....
.....

TEST REPORT REFERENCE.....

Ambient temperature.....°C

Relative humidity.....%

CHANGES IN RECEIVED SIGNAL

SUB-CLAUSES 9.2

Transmitter operating/standby*

Modulated/Unmodulated*

*(Delete whichever is inappropriate)

f ₁ = 457 kHz		f ₂ = 2 275 Hz	
Distance (m)	Level (dBμA/m)	Distance (m)	Level (dBμA/m)
Measurement uncertainty (dB)		Measurement uncertainty (dB)	

REQUIREMENT SUB-CLAUSE 9.2.2

Reducing the distance between transmitter and receiver by 25% shall produce a change of > 3 dB in the received signal over the whole receiving range down to a distance of 1 m. In the receive mode, there shall be means to modify the received signal manually.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

.....

TEST REPORT REFERENCE.....

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

Ref. No.	Instrument/Ancillary	Type	Manufacturer	Serial No.
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

TEST REPORT REFERENCE.....

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS Continued:-

Ref. No.	Instrument/Ancillary	Type	Manufacturer	Serial No.
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

TEST REPORT REFERENCE.....

ADDITIONAL INFORMATION SUPPLEMENTARY TO THE TEST REPORT

Page No.

Remarks

TEST REPORT REFERENCE.....

Photographs of the equipment are to be provided as part of the Test Report.
As a minimum the photographs shall be of:-

1. Assembly of units or parts
2. Front of unit (Showing controls/labelling etc.)
3. Rear of unit (Showing antenna connector(s), labelling etc.)
4. If the label or identifying mark is affixed on a surface other than at 2. or 3. above a photograph of this shall be provided
5. ONLY AFTER TYPE TESTING IS COMPLETED, the equipment shall be opened and photographs of the internal construction shall be made.
6. The photographs shall be colour plate and of a size not less than 170mm x 120mm
7. Each photograph shall be clearly identified and mounted on a separate page