



**Group of Administrative Co-operation  
Under the Radio Equipment Directive**



**8th R&TTE Market Surveillance  
Campaign on Radio Controlled Toys**

*REPORT  
ON THE 8<sup>TH</sup> JOINT CROSS-BORDER  
R&TTE MARKET SURVEILLANCE CAMPAIGN  
(2016)*

**RADIO CONTROLLED TOYS**

**Adopted by ADCO RED 03  
on 18<sup>th</sup> October 2016**

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## **A. EXECUTIVE SUMMARY**

The 51<sup>st</sup> R&TTE Administration and Cooperation Group (‘ADCO R&TTE’) meeting agreed that radio controlled toys would be the target for the 8<sup>th</sup> joint cross-border R&TTE market surveillance campaign. Eighteen European countries participated in the campaign and sampled 111 products over the whole array of radio controlled toys (cars, boats, ...) covering the different used frequency bands and from all origins (national, EEA, EFTA, and imported from third countries).

Within the planned timeframe of six months, the market surveillance authorities found out that eighty-one percent (81%) of the devices did not fulfil at least one of the checked requirements. Two out of five (41%) assessed radio controlled toys were found to be non-compliant in relation to the effective use of spectrum. More than two out of three (70%) had administrative non-compliances within the meaning of the R&TTE Directive.

The campaign showed that the main reason for non-compliance against the effective use of spectrum were spurious emissions (98%).

The market surveillance authorities consider the rate of non-compliances too high. The growing market of radio controlled toys combined with a low compliance rate could lead to an increase of interference to the spectrum. Market surveillance authorities should therefore continue to check at national level such products, especially the products found to be non-compliant in this campaign, and take all appropriate measures to ban non-compliant products from the market. Regular reporting in ADCO RED is recommended.

## **B. ELEMENTS OF THE CAMPAIGN**

### **1. Reasons for the campaign**

Radio controlled toys (RC toys) continue to be a popular product amongst consumers. In 2013, China was the world's largest exporter of toys (products designed or intended for use in play by children under 14 years of age) with more than 86% of the world's exports. The European Union was the second largest with 4.6% of world exports. Within the EU, 99% of toy manufacturing companies are small and medium-sized enterprises. The toy trade between EU countries is worth €4.2 billion and the EU exports toys worth €50 million to China and €280 million to the US ([http://ec.europa.eu/growth/sectors/toys/index\\_en.htm](http://ec.europa.eu/growth/sectors/toys/index_en.htm)).

The increasing incorporation of radio and the exemption of radio licences in several frequency bands has led to a proliferation of radio controlled toys on the market. Most radio controlled toys operate within the 27 MHz; 40 MHz; 868 MHz; 2.4 GHz; and 5.8 GHz frequency bands among others.

The 51<sup>st</sup> meeting of the R&TTE Administration and Cooperation Group (ADCO R&TTE) agreed that radio controlled toys would be the target for the 8<sup>th</sup> joint cross-border R&TTE market surveillance campaign.

### **2. Scope and purpose of the campaign**

The campaign focused on radio controlled toys that fall under the scope of Directive 1999/5/EC (the R&TTE Directive) and Directive 2009/48/EC (the Toy Safety Directive). Products were limited to toys designed for use by children under 14 years of age. The campaign had several goals among others:

- to determine the administrative and technical compliance levels of radio controlled toys available within the EU market;
- to take appropriate compliance actions to rectify non-compliances;
- to propose further actions;
- to improve the knowledge of manufacturers, importers, distributors and economic operators of their obligations under the R&TTE Directive;
- to increase knowledge of the radio controlled toys industry.

Market Surveillance Authorities (MSAs) have assessed these products against determined administrative requirements and carried out a conformity assessment against the essential requirement of the effective use of the spectrum (article 3.2 R&TTED). Measurements against the requirements of the electrical health and safety (article 3.1.a R&TTED) and electromagnetic compatibility (article 3.1.b R&TTED) were carried out on a voluntary basis.

The campaign was also intended to provide MSAs with the opportunity to participate in R&TTE market surveillance and to improve the exchange of information between them.

It was agreed that TCAM, TCAM WG, ECC, REDCA and ETSI would be informed of this campaign and its results.

### **3. Participation in the campaign**

Participation in the campaign was voluntary and was open to all members of ADCO R&TTE. Eighteen European countries participated in the campaign: Austria, Cyprus, Estonia, Finland, France, Germany, Greece, Italy, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

#### **4. Timing**

The campaign started on the 1<sup>st</sup> January 2016. The information gathering, testing and data reporting phases of the campaign ended on the 31<sup>st</sup> May 2016. Within that period, MSAs carried out their operations on their own timescales. A further 10 days, ending on the 10<sup>th</sup> June 2016, were allowed for results to be uploaded to ICSMS using the generic DRPI (Directive Related Product Information).

#### **5. Sampling**

Participating MSAs took between 2 and 11 different RC toys from their national marketplace. During this campaign, a product was considered a toy and was foreseen to be used by children under 14 years due to the declaration of the manufacturer and labelling of the product and packaging.

According to campaign's Code of Practice, participating MSAs were free to select products working on frequency bands dedicated for non specific short range devices, wideband data transmissions systems and model control.

The aim of selecting apparatus for testing provided the campaign with the broadest possible selection of RC toy products on the EU market. Therefore, samples were taken over the whole price range (up and down the market) and from all origins (national, EEA, EFTA, and imported from third countries), if available. Selection also included e-commerce investigations (like eBay, Amazon etc.)

To avoid double sampling, participating MSAs were encouraged to register details of their selections on ICSMS as early in the campaign as possible.

#### **6. Documents**

A Code of Practice was drawn up to provide guidance and a common understanding of the purpose of the campaign and to ensure, as far as possible, the adoption of harmonised practices during the operational phase of the campaign. The results of each assessment were recorded on a common electronic data input form for R&TTE (R&TTE DIF).

#### **7. Assessment procedure**

Participating MSAs had to assess the product against determined administrative requirements, paying particular attention to:

- product identification (name of the manufacturer or the party responsible for placing on the market, type designation, batch and serial number);
- CE marking (CE mark layout and height) on equipment, its packaging and on the accompanying documents;
- involvement of Notified Bodies in the conformity assessment process;
- description of intended use and information on restriction of use for radio equipment;
- content of DoC (complete form and short form if available);
- information on standards applied by the manufacturer to show compliance with article 3.1.a (electrical health and safety), article 3.1.b (electromagnetic compatibility) and article 3.2 (effective use of the spectrum).

If the DoC was not provided with the product, the participating MSA had to request it from the person responsible for placing the item on the market.

The participating MSAs had to request, as a minimum, the following elements of the technical documentation from the party responsible for the placing on the market of the sample:

- test reports to demonstrate compliance with the requirement on effective use of spectrum (article 3.2 R&TTED);
- descriptions and an explanation of the solutions adopted by the manufacturer to meet the essential requirements of the Directive where Harmonised Standards have not been or have only partly been used.

Participants of the campaign carried out measurements against the requirement in relation to the essential requirements as defined in the R&TTED, in particular effective use of spectrum (article 3.2 R&TTED) by assessing the conformity with the applicable relevant Harmonised Standard. The results were compared directly with the limits of the Harmonised Standard, taking into account the measurement uncertainty defined within it.

Measurements were carried out on the basis of harmonised standards which have been indicated by the manufacturer, reflecting the moment the product became available on the market. Relevant harmonised standards are listed in section E of the report.

In cases where a previous version of the current harmonised standard was available at the moment of placing on the market, then the measurements were carried out against the previous version. In cases where two (or more) harmonised standards could be applicable at the point of placing on the market, the measurements were carried out against the least stringent.

Results of the assessment were recorded on special forms tailored to the campaign and analyzed from a statistical point of view.

## C. RESULTS

Due to the variety of available RC toys in shape and purpose, tested products were initially divided into four groups:

- RC vehicle – toy designed to ride on wheels,
- RPAS – toy designed to fly,
- RC boat – toy designed to float,
- other RC toy – toy which cannot be part of above mentioned groups.

The majority of one hundred and eleven (111) samples of RC toys taken by MSAs were manufactured in People's Republic of China (97%), remotely controlled on the 27 MHz frequency (59%) and designed as a RC vehicle (76%).

<b>Table 1: RC toy characteristic</b>					
	27 MHz	35 MHz	40 MHz	2,4 GHz	<b>Overall</b>
RC vehicle	56	1	20	7	<b>84</b>
RPAS				12	<b>12</b>
RC boat	3		1		<b>4</b>
Other RC toy	6		2	3	<b>11</b>
<b>Overall</b>	<b>65</b>	<b>1</b>	<b>23</b>	<b>22</b>	<b>111</b>

### 1. Administrative non compliance

All 111 samples were checked against the following administrative requirements: CE marking, content of Declaration of Conformity, notification obligation, and some elements of technical documentation. More than two out of three products had administrative non compliance(s) within the meaning of R&TTED.

#### 1.1. Markings (including CE marking)

The marking of forty seven (47) products was found not compliant with the marking requirements. The table below presents the number of non-compliant products within the scope of the listed requirements.

<b>Table 2 : Reasons of markings' non-compliance</b>			
Detailed requirement	on product	on packaging	on documents
Missing name of the manufacturer	8		
Incorrect type designation	11		
Missing batch and/or serial number	31		
Missing, incorrect CE mark layout or height	12	4	24
Not compliant class identifier, it's layout or height	1	1	1

#### 1.2. EC Declaration of Conformity (DoC)

Eighty nine (89) products had complete or short forms of the DoC. From those, forty two (42) were found to be not compliant. The overall level of non compliance (missing and not compliant) is about 58%.

<b>Table 3 : Statistics of Declaration of Conformity</b>				
	Quantity	Percentage to the overall	Quantity of non compliant	Level of non compliance within the group
Short form	37	33%	14	38%
Complete form	52	47%	28	54%
DoC not available <sup>1</sup>	22	20%	22	100%
<b>Overall</b>	<b>111</b>	<b>100%</b>	<b>64</b>	<b>58%</b>

### 1.3. Technical documentation (TD)

In eighty three (83) cases MSAs requested technical documentation (TD) demonstrating compliance with article 3.2 R&TTED (test reports and an explanation on solutions adopted by the manufacturer if Harmonised Standards have not been or have only partly been used). Requested TD was made available for assessment of seventy (70) RC toys.

In thirty five (35) cases the requested elements of the TD have been found not compliant. The overall level of non-compliance of the checked elements of available TD is approximately 50%.

<b>Table 4 : Compliance with assessed TD requirements</b>				
Number requested	TD available	TD available [%]	TD not compliant	non compliance level of available TD[%]
83	70	84%	35	50%

## 2. Technical compliance

Participating MSAs conducted a technical assessment of the chosen RC toys. All products (111) were checked against the requirement of the effective use of the spectrum (article 3.2 R&TTED). Participating MSAs concentrated their assessment on article 3.2 therefore data gathered for article 3.1a R&TTED (the electrical health and safety) and article 3.1b R&TTED (the electromagnetic compatibility) are insufficient to draw any conclusions.

Forty six (46) products were found with technical non-compliances in relation to the effective use of the spectrum requirement (article 3.2 R&TTED). The overall level of non-compliance in that scope is about 41%. Statistical information on non-compliances in relation to the product's type and frequency band is presented in table 5a and 5b.

<b>Table 5a: Non-compliance with art. 3.2 essential requirements</b>					
Group of products	27 MHz	35 MHz	40 MHz	2,4 GHz	Overall
RC vehicle	27	1	3	3	<b>34</b>
RPAS				5	<b>5</b>
RC boat	1		1		<b>2</b>
Other RC toy	3		1	1	<b>5</b>
<b>Overall</b>	<b>31</b>	<b>1</b>	<b>5</b>	<b>9</b>	<b>46</b>

<b>Table 5b: Non-compliance with art. 3.2 essential requirements [%]</b>
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<sup>1</sup> DoC was not included in the packaging and was not received after request of MSA

Group of products	27 MHz	35 MHz	40 MHz	2,4 GHz	Overall
RC vehicle	48%	100%	15%	43%	<b>40%</b>
RPAS				42%	<b>42%</b>
RC boat	33%		100%		<b>50%</b>
Other RC toy	50%		50%	33%	<b>45%</b>
<b>Overall [%]<sup>2</sup></b>	<b>48%</b>	<b>100%</b>	<b>22%</b>	<b>41%</b>	<b>41%</b>

Test measurements revealed that spurious emissions are the main reasons for non-compliance. The allocated frequency range was exceeded in a few cases. Radiated power limit was not exceeded in any case. Detailed statistical information is presented in table 6a and 6b.

<b>Table 6a: Reason of non-compliances against art. 3.2</b>		
Group of products	Spurious emissions	Other <sup>3</sup>
RC vehicle	33	4
RPAS	5	
RC boat	2	1
Other RC toy	5	
<b>Overall</b>	<b>45</b>	<b>5</b>
<b>Overall [%]<sup>4</sup></b>	<b>98%</b>	<b>11%</b>

<b>Table 6b: Reason of non-compliances against art. 3.2</b>		
Frequency band	Spurious emissions	Other <sup>3</sup>
27MHz	30	3
35MHz	1	
40MHz	5	1
2,4GHz	9	1
<b>Overall</b>	<b>45</b>	<b>5</b>
<b>Overall [%]<sup>4</sup></b>	<b>98%</b>	<b>11%</b>

<sup>2</sup> Overall non-compliance percentage level refers to all inspected products presented in table 1

<sup>3</sup> permitted range of operation frequencies, frequency stability under low voltage conditions

<sup>4</sup> Overall reason of non-compliance percentage level refers to non-compliant products

### 3. Overall non-compliance

From the group of one hundred and eleven (111) samples of RC toys assessed by participating MSAs, ninety (90) products (81%) were found non-compliant with the requirements of the R&TTE Directive. Detailed statistical information is presented in tables 7a and 7b.

<b>Table 7a: Overall non-compliance</b>					
Group of products	Quantity	Administratively non-compliant	Art. 3.2 non-compliant	Overall non-compliant	Overall non-compliance [%]
RC vehicle	84	60	34	69	<b>82%</b>
RPAS	12	9	5	10	<b>83%</b>
RC boat	4	2	2	3	<b>75%</b>
Other RC toy	11	7	5	8	<b>73%</b>
<b>Overall</b>	<b>111</b>	<b>78</b>	<b>46</b>	<b>90</b>	<b>81%</b>

<b>Table 7b: Overall non-compliance</b>					
Group of products	Quantity	Administratively non-compliant	Art. 3.2 non-compliant	Overall non-compliant	Overall non-compliance [%]
27MHz	65	46	31	55	<b>85%</b>
35MHz	1	0	1	1	<b>100%</b>
40MHz	23	16	5	17	<b>74%</b>
2,4GHz	22	16	9	17	<b>77%</b>
<b>Overall</b>	<b>111</b>	<b>78</b>	<b>46</b>	<b>90</b>	<b>81%</b>

Table 8 shows the relation of administrative compliance to technical compliance.

<b>Table 8: Administrative vs. technical compliance against art. 3.2 R&amp;TTED</b>			
	Product compliant with art. 3.2 R&TTED	Product non-compliant with art. 3.2 R&TTED	<b>Overall</b>
Product administratively compliant	21	12	<b>33</b>
Product administratively non-compliant	44	34	<b>78</b>
<b>Overall</b>	<b>65</b>	<b>46</b>	

## **D. CONCLUSIONS AND RECOMMENDATIONS**

### **1. Conclusions**

- The majority of tested RC toys were manufactured in People's Republic of China (97%), remotely controlled on 27 MHz (59%), and 76% were designed to ride on wheels.
- More than two out of three (70%) products had administrative non-compliances within the meaning of R&TTE Directive.
- During the campaign, it was difficult for MSAs to obtain the DoC and the requested elements of the TCF from importers.
- Two out of five (41%) assessed RC toys were found to be non-compliant in relation to the effective use of spectrum.
- Four out of five assessed (81%) RC toys had at least one non-compliance.
- Spurious emissions (98% of technically non-compliant products) are the main reason for non-compliance against art. 3.2.
- The results of this campaign highlighted the importance of an assessment of the technical compliance in laboratories. One of three products with no administrative non-compliances had at least one non-compliance against the 3.2 essential requirement.

### **2. Recommendations**

- Market surveillance authorities should continue to check RC toys at national level, and take all appropriate measures to ban non-compliant products from the market. Regular reporting in ADCO RED should be guaranteed.
- ADCO RED should spread the results of the campaign widely throughout Europe and bring it to the attention of manufacturers in People's Republic of China.
- The report should be presented and discussed in TCAM WG.
- Economic operators should be identified and possible solutions should be discussed with them.
- All national MSAs should participate in future market surveillance campaigns to fulfil the requirement of market surveillance obligations included in the New Legislative Framework (NLF).
- ADCO Toys should be informed of the results found in this campaign with detailed information on the non-compliant products.
- Efforts should be made to ensure that economic operators of radio controlled toys are continuously informed about the requirements of the R&TTE and RE-Directives and their obligations.

## **E. References**

EN 300 220-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 300 330-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
EN 300 440-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
EN 300 328	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 301 893	Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

## **F. Abbreviations**

ADCO R&TTE	Group of Administrative Cooperation for the sector of radio equipment and telecommunications terminal equipment
CIRCABC	Communication and Information Resource Centre for Administrations, Businesses and Citizens
DIF	Data Input Form
DoC	Declaration of Conformity
ECC	The Electronic Communications Committee
EEA	The European Economic Area
ETSI	European Telecommunications Standards Institute
ICSMS	Internet-based Information and Communication System for Europe wide cross-border Market Surveillance of technical products
MSA	Market Surveillance Authority
RC Toy	Remotely Controlled Toy
RED CA	Radio Equipment Directive Compliance Association
TCAM	Telecommunication Conformity Assessment and Market Surveillance Committee
TCF	Technical Construction File
TD	Technical documentation