



GRAND-DUCHÉ DE LUXEMBOURG

Ministère du Développement durable
et des Infrastructures
Département des Transports

L-2938 Luxembourg

SOCIÉTÉ NATIONALE DE
CERTIFICATION ET D'HOMOLOGATION

s à r l

Registre de Commerce: B 27180

L-5201 Sandweiler



Référence: E13*10R00*10R04*13381*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Sandweiler, le 25 septembre 2014

Communication concernant:⁽²⁾

Communication concerning:



- la délivrance d'une homologation
approval granted
- l'extension d'homologation
approval-extended
- le refus d'homologation
approval-refused
- le retrait d'homologation
approval-withdrawn
- l'arrêt définitif de la production
production-definitely-discontinued

d'un type de sous-ensemble électrique/électronique⁽²⁾ en ce qui concerne le Règlement N° 10
of a type of electrical/electronic sub-assembly with regard to Regulation N° 10


Numéro d'homologation par type:

Approval number:

E13*10R00*10R04*13381*00

Marque d'homologation:

Approval mark:

 10R-04 13381

1. Fabricant: (marque commerciale du constructeur):

Make (trade name of manufacturer):

HCT

2. Type:

Type:

EMC-6

Dénomination(s) commerciale(s) générale(s):

General commercial description(s):

Hybrid Fan System Controller

Version(s)/Variante(s):

Version(s)/Variant(s):

None

3. **Moyens d'identification du type, s'ils sont marqués sur le composant / entité technique⁽²⁾:**
Means of identification of type, if marked on the component / ~~separate-technical-unit~~:
- See item 6.
- 3.1. **Emplacement de ce marquage:**
Location of that marking:
- See item 6.
4. **Catégorie du véhicule:**
Category of vehicle:
- Not applicable
5. **Nom et adresse du constructeur:**
Name and address of manufacturer:
- High Country Tek, Inc.
1500 West University Parkway
Sarasota, Florida 34243
U.S.A
6. **Dans le cas de composants ou d'entités techniques, emplacement et procédé de fixation de la marque de réception CEE:**
In the case of components and separate technical units, location and method of affixing of the ECE approval mark:
- Vinyl label with adhesive backing affixed to the front of product
7. **Adresse(s) de l' (des) usine(s) d'assemblage:**
Address(es) of assembly plant(s):
- HCT
208 Gold Flat Court
Nevada City, CA 95959
U.S.A
8. **Informations supplémentaires (s'il y a lieu):**
Additional informations (where applicable):
- See appendix
9. **Autorité déléguée:**
Assigned authority:
- Société Nationale de Certification et d'Homologation
L-5201 Sandweiler*
- Service technique responsable de l'exécution des essais:**
Technical service responsible for carrying out the tests:
- Luxcontrol S.A.
1, Av. des Terres Rouges
L-4004 Esch-sur-Alzette
10. **Date du rapport d'essai:**
Date of test report:
- 22.09.2014
11. **Numéro du rapport d'essai:**
Number of test report:
- LCA 53 1072 002 14
12. **Remarques (s'il y a lieu):**
Remarks (if any):
- See appendix

13. **Lieu:** Sandweiler
Place:
14. **Date:** 25 septembre 2014
Date:
15. **Signature:**
Signature:

Pour le Département des Transports



Marco FELTES
Inspecteur principal 1^{er} en rang

Pour la SNCH



Claude LIESCH
Directeur



16. **L'index de l'ensemble des renseignements déposé chez l'autorité de réception, qui peut être obtenu sur demande, est joint.**

The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

See index to type-approval report

17. **Raison(s) de l'extension:** Not applicable
Reason(s) for extension:

Appendice

Appendix

au certificat d'homologation par type N° E13*10R00*10R04*13381*00
 to type-approval certificate N° E13*10R00*10R04*13381*00
concernant l'homologation par type d'un sous ensemble électrique/électronique selon le Règlement N° 10.
 concerning the type-approval of an electrical/electronic sub-assembly under Regulation N° 10.

- | | | |
|---------------|--|---|
| 1. | Informations supplémentaires.
Additional information. | |
| 1.1. | Tension nominale du système électrique [V]:
Electrical system rated voltage [V]: | 12 / 24V |
| | Masse:
Ground: | Negative |
| 1.2. | Ce SEEE peut être utilisé sur n'importe quel type de véhicule avec les restrictions suivantes:
This ESA can be used on any vehicle type with the following restrictions: | See item 1.2.1. |
| 1.2.1. | Conditions d'installation, s'il y a lieu:
Installation conditions, if any: | According to manufacturer's installation guidelines |
| 1.3. | CE SEEE peut seulement être utilisé sur les types de véhicules suivants:
This ESA can be used only on the following vehicle types: | Not applicable |
| 1.3.1. | Conditions d'installation, s'il y a lieu:
Installation conditions, if any: | Not applicable |
| 1.4. | La (les) méthode(s) spécifique(s) d'essais utilisée(s) et les bandes de fréquences couvertes pour déterminer l'immunité étai(ent): (indiquez s'il vous plaît à partir de l'annexe 9 la méthode précise utilisée).
The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from annex 9). | Bulk current injection testing: 20 to 200 MHz
ISO 11452-4: 3 rd ed, 2005 + Corrigendum 1: 2009

Absorber chamber test: ISO 11452-2: 2 nd ed. 2004
200 to 2000 MHz |
| 1.5. | Laboratoire accrédité au titre de la norme ISO 17025 et reconnu par l'autorité d'homologation chargé d'effectuer les essais:
Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests: | Not applicable |
| 2. | Commentaires:
Remarks: | Not applicable |



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L-5201 Sandweiler

Référence: E13*10R00*10R04*13381*00

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- Fiche de Renseignements du constructeur

Sandweiler, le 25 septembre 2014

Index du dossier d'homologation

Index to type-approval report

	Numéro d'homologation: Approval number:	E13*10R00*10R04*13381*00
	Révision: Revision:	00
	Marque de fabrique ou de commerce: Trade name or mark:	HCT
	Type: Type:	EMC-6
1.	Procès-verbal d'essai: Test report:	N° LCA 53 1072 002 14
	- Technical report:	Page 1 to 9
	- Index:	Annex A – Page 1
2.	Dossier du constructeur: Report of the manufacturer:	Annex B
	- Content:	Page 1 to 4
3.	Autres documents annexés: Other documents annexed:	Not applicable
4.	Date de délivrance de l'homologation initiale: Date of issue of initial type approval:	25.09.2014
5.	Date de la dernière délivrance de pages révisées: Date of last issue of revised pages:	Not applicable
6.	Date de la dernière délivrance d'une homologation révisée: Date of last extension:	Not applicable

TECHNICAL REPORT

No.: LCA 53 1072 002 14

Inspection concerning the

**Radio interference (electromagnetic
compatibility) of motor vehicles**

performed according to the

ECE-Regulation No. 10

Type: **EMC-6**
Manufacturer: **High Country Tek, Inc.**
1500 West University Parkway,
Sarasota, Florida 34243; USA

Extension -- to ECE Type Approval no.: not applicable

Index:

	E13*10R00*10R04*13381*00		
	Société Nationale de Certification et d'Homologation		
	L-5201 SANDWEILER (Luxembourg)		
	Organisme accrédité OLAS EN 45011		
	Accréditation N° 5/001 (Portée communiquée sur demande)	Page	2
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4. Statement of compliance		Page	
Annex (beginning with an index)			

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BIC: BGLLLULL
Dexia-BIL
IBAN: LU48 0026 1624 1543 2600
BIC: BILLULL



1. **General**

1.1. **Test Provisions**

The inspection was carried out according to the requirements of ECE-Regulation No. 10, including Supplement 2 to the 04 series of amendments which entered into force on July 15, 2013.

1.2. **Information concerning the ESA type and the requested approval**

The statements below apply to the previous ECE type-approval as referred to on page 1.

1.2.1. [] Numbering according to the communication concerning the approval following ECE-R10.

[1.] Make (trade name of manufacturer):

HCT

[2.] Type and general commercial description:

Type: **EMC-6**

Commercial description: **Hybrid Fan System Controller**

[3.] Means of identification of type, if marked on the ~~vehicle~~ component / ~~separate technical unit~~:

Vinyl label with adhesive backing

[3.1.] Location of that marking:

label affixed to front of product

[4.] Category of the vehicle: **not applicable**

[5.] Name and address of the manufacturer:

**High Country Tek, Inc.
1500 West University Parkway,
Sarasota, Florida 34243; USA**

...



- [6.] In the case of components and separate technical units, location and method of affixing of the approval mark:
Vinyl label with adhesive backing affixed to front of product
- [7.] Address(es) of assembly plant(s):
**High Country Tek, Inc.
208 Gold Flat Court
Nevada City, CA 95959; USA**
- 1.2.2. [] Numbering according to the communication concerning the approval following ECE-R10; Appendix to Annex 3B.
- [1.] Additional information:
- [1.1.] Electrical system rated voltage:
12V / 24V, negative ground
- [1.2.] This ESA can be used on any vehicle type with the following restrictions:
not applicable
- [1.2.1.] Installation conditions, if any:
According to manufacturer's installation guidelines
- [1.3.] This ESA can only be used on following vehicle types:
not applicable
- [1.3.1.] Installation conditions, if any:
not applicable
- [1.4.] The specific test method(s) used and the frequency ranges covered to determine immunity were:
according to Annex 9 of the Regulation.

...



In accordance with ISO 11452-2: 2nd edition 2004; ECE-R10.04 with the following parameters:

- Frequency range: 20 – 2000 MHz
- Modulation: 20 – 800 MHz: 80% 1kHz sine wave AM
800 – 2000 MHz: PM t on 577µs, period 4600 µs
- Method used: 20 – 2000 MHz: ISO 11452-2 ALSE
- Test level: 20 – 2000 MHz: 30V/m
- RF antenna polarization: vertical
- Dwell time: not less than 1 second

[1.5.] Approved/recognised laboratory responsible for carrying out the tests:
not applicable

[2.] Remarks:
None

2. Inspections and their results

2.1. Version of the tested vehicle

Following version(s) has (have) been used for testing:

- not applicable

2.2. Inspection items

	Inspector	Location of test:	Date of receipt of test item:	Date of test:
Main report	G. Lamesch	MET Laboratories, Inc. 3162 Belick St. Santa Clara, CA 95054; USA	25.08.2014	25.08. to 27.08.2014

2.2.1. Test results:

2.2.1.1. Broadband and Narrowband parameters

Frequency range: 30 – 1000MHz
Bandwidth: 120kHz
Detection: Peak (Broadband) and Average (Narrowband)
Antenna polarity: Horizontal and vertical

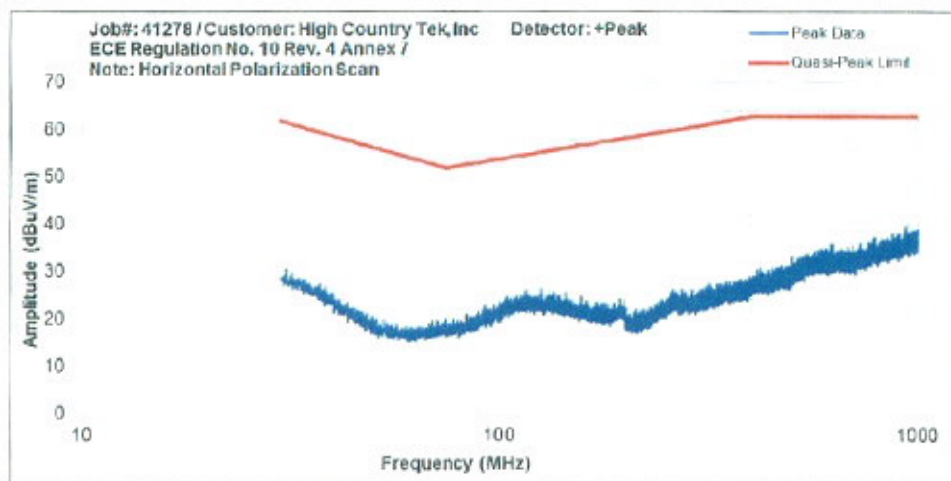
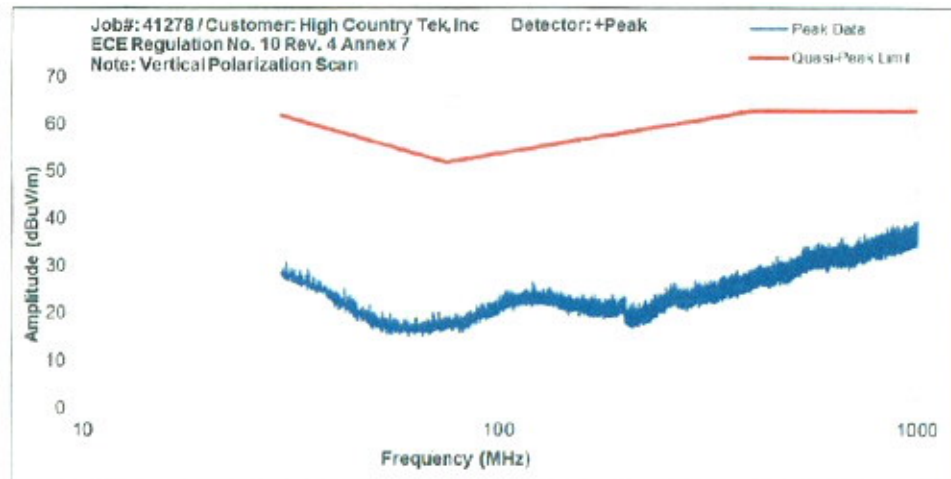
...



2.2.1.2. Broadband electromagnetic radiation:

Results of the measurements in accordance with the method described in Annex 7 of ECE-R10:

Test facility: ~~outdoor~~/ enclosed
State of the ESA: normal working condition:
Input voltage: 27 V \pm 1V shown



Comparison tests with the test voltage of 13.5V \pm 1V showed equivalent results
The graph shows the peak detector readings against the quasi-peak limits. The peak limit for 120kHz RBW would be +20 dB

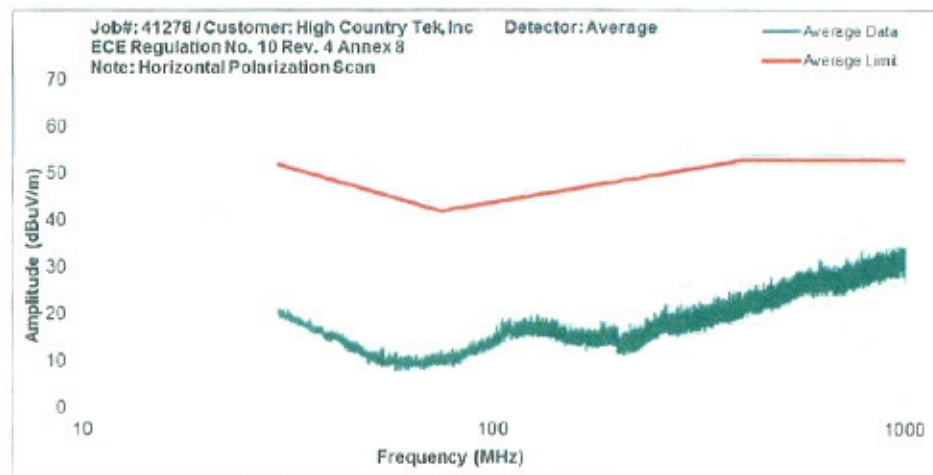
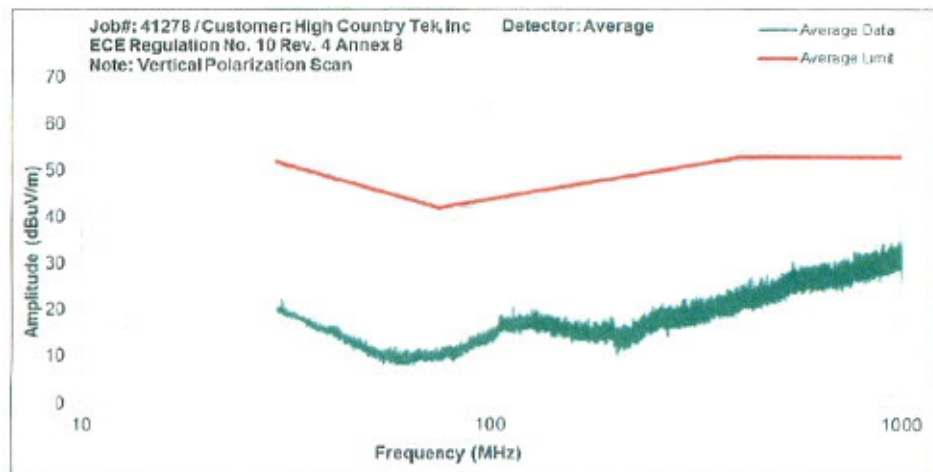
The ESA is in compliance with the requirements.



2.2.1.3. Narrowband electromagnetic radiation:

Results of the measurements in accordance with the method described in Annex 8 of ECE-R10:

Test facility: ~~outdoor~~/ enclosed
State of the ESA: normal working condition:
Input voltage: 27 V ± 1V shown



Comparison tests with the test voltage of 13.5V ± 1V showed equivalent results

The ESA is in compliance with the requirements.

...



2.2.1.4. Immunity of Electrical / Electronic subassemblies to electromagnetic radiation:

Results of the test outlined in Annex 9 of ECE-Regulation R10:

Test facility: ~~outdoor~~/ enclosed
State of the ESA: normal working condition:
Input voltage: 13.5 V ± 0.5 V and 27 V ± 1V

No deviations were observed while the ESA was exposed to electromagnetic radiation according to the specifications of the above-mentioned Annex of the Regulation.

2.2.1.5. Immunity to transient disturbances conducted along supply lines:

Tests in accordance with Annex 10 of ECE-Regulation 10 were performed and the specifications are fulfilled (24V shown)

Test pulse	Immunity test level	Test pulses or test time	Required functional status	Functional status achieved
1	-450 V (test level III)	5000 pulses	C	C
2a	+37 V (test level III)	5000 pulses	B	A
2b	+20 V (test level III)	10 pulses	C	C
3a	-150 V (test level III)	1 hour	A	A
3b	+150 V (test level III)	1 hour	A	A
4	-12 V (test level III)	1 pulse	B	A

Comparison tests with a test voltage of 13.5V ± 0.5V showed equivalent results

2.2.1.6. Emission of conducted disturbances:

Tests in accordance with Annex 10 of ECE-Regulation 10 were performed and the specifications are fulfilled (24V shown)

	Maximum allowed pulse amplitude	Measured amplitude	Test voltage [*]	Result
Fast pulse	+75 V (12V) / +150 V (24V)	+72.8 V	27 V ± 1V	Pass
	-100 V (12V) / -450 V (24V)	-13.2 V	27 V ± 1V	Pass
Slow pulse	+75 V (12V) / +150 V (24V)	+74.8V	27 V ± 1V	Pass
	-100 V (12V) / -450 V (24V)	-13.2 V	27 V ± 1V	Pass

[] since the results for the 24V system are already below the limits for 12V systems the test was not repeated for a test voltage of 13.5 V ± 0.5V*

2.3. **Remarks**

The inspection results are only applicable to items, which have been tested.

...



2.4. Test facilities

Calibration of measuring and test equipment used to carry out the inspections is in accordance with the EC-Directive and/or ECE-Regulation stated in 1.1. of this report and with ISO 17025.

Inspectors stated under 2.2. of this report were in charge of performing and/or evaluating the tests.

3. Evaluation of test results

3.1. Variants and equipment covered

The tests carried out cover the following ESA variations and equipment as far as these are relevant for the radio interference suppression:

- rated system voltage

3.2. Remarks

3.2.1. Main report:

not applicable

...



4. **Statement of compliance**

The inspections and measurements carried out have shown the compliance of the device described in this report and the attached Annex with the requirements of the ECE-Regulation No. 10, including Supplement 2 to the 04 series of amendments, which entered into force on July 15, 2013.

Plymouth, September 22, 2014

Luxcontrol s.a.
Service Homologation-automobile

Gérard Lamesch
Ingénieur-Inspecteur

Philip Poirier
Ingénieur-Inspecteur

Annex