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Your sign

Your mail from

Name / Dept.  
Mr. Vogelmann

Phone Date  
+49 7392/911370 10/13/2008

Ust-IdNr. DE161887712

FCC ID: WIWTLR401  
Applicant: TimeLink International GmbH  
Form 731 Confirmation Number: EA439042

Bank account  
Volksbank Neu-Ulm / Germany  
Account No. 601250  
Bankrouting No. 73090000  
BIC GENODEF1NUV  
IBAN DE52 7309 0000 0000 601250

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1.) Occupied bandwidth of the EUT see attached files TLE41\_05.pdf  
6dB –Bandwidth 10kHz

There is no impact of the power supply range 100-264VAC to the bandwidth and centre frequency at 20°C ambient temperature. Also the temperature shows no influence to the frequency tolerance of the carrier. The emitted frequency is crystal clock stabilized and keeps the tolerance of 13.56MHz ± 0.01% over the temperature range –20 - +50°C. The influence of the temperature was investigated at 115V/60Hz mains supply.

## 2.) Signal parameters

The transmitter / receiver antenna emits a 13.56MHz AC magnetic field. The transmitted signal is a not modulated carrier. The field “powers up” a passive tag which is brought into the vicinity of the antenna. The tag, when powered, operates as a field disturbance device and either receives or returns a serial data stream.

When in HID mode, the unit will normally be running with the RF field turned off. The RF field will be turned on every 100 milliseconds to poll for a transponder in the field. If there is no transponder in the field, the field will remain on for 10 milliseconds and then turn off for the next 90 milliseconds. If there is a transponder in the field, the field will remain on for approximately 57 milliseconds while the reader read the HID Access Control ID from the transponder.

- #### 4.) List of confidential exhibits

File	3131-400 Main Sch.pdf	Schematic	Not for public access
File	3131-401 Ant Sch.pdf	Schematic	Not for public access
File	TLR401_V03.pdf	Schematic	Not for public access
File	antenna.pdf	Antenna drawing	Not for public access
File	TLR401_V03.pdf	PCB Layout	Not for public access
File	TLR401_V03-061207.pdf	Bill of material	Not for public access

- ## 5.) Test procedure

The loop antenna was rotated through 360 degrees on its vertical axis to maximize the reading of field strength. The antenna height of the loop antenna was fixed to 1m according ANSI C63.4-2003 §8.2.1 – “..the centre of the loop shall be 1m above the ground”. According ANSI C63.4-2003 §8.2.1 only “for certain applications, the loop antenna may also need to be positioned horizontally ... There is no requirement by the Part 15 for this type of EUT to measure the radiation on horizontal polarization of the loop antenna. Also the extension of the EUT is very small and for the approval the EUT position was altered to maximize the emanation. For these reasons we tested only the magnetic fields with vertical polarized loop antenna.



6.) Information about modifications

- see TLR401\_handbuch\_en\_V12\_7. pdf  
Manual Vers. 1.4 / §7.3

The attached text will be submitted by the manual Vers. 1.4

“Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the this equipment.”

7.) Photographs

- see TLE41\_06

- solder side of the daughter card
- solder side of the main PCB board showing where the daughter card has been removed
- external view of the EUT
- solder side of the door unit’s PCB

I hope these information are sufficient to finish the approval.

With kind regards.

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