

T77H332 User Manual

Project Name	NFC (Near Field Communication) Module
Rev.	00
FOXCONN Part No.	T77H332
Module Rev.	00

Revision History

Revision	Date	Originator	Comment
0.0	2012/12/20	Wei.Liao	Initial



COMPANY CONFIDENTIAL Content

REVISION HISTORY	1
1. INTRODUCTION	3
2. WIFI ALLIANCE CONFORMANCE	6
3. HARDWARE SPECIFICATION	7
4. PRODUCT REQUIREMENTS.....	11

1. Introduction

The T77H332.XX IEEE802.11b/g/n module is based on Marvell 88W8782UB0-NAP2C000 solution that is provide the combined functions of DSSS and OFDM baseband modulation, MAC, CPU, OTP (one time programmable) memory, host interfaces, power management unit (PMU) and direct conversion WLAN RF radio.

1.1 Scope

The wireless LAN is compliant to IEEE 802.11b and IEEE 802.11g and IEEE 802.11n standard. The data rate of 802.11b is up to 11Mbps and fallback rates of 5.5, 2, 1Mbps. The data rate of 802.11g is up to 54Mbps and fallback rates of 48,36,24,18,12,9, 6Mbps. The data rate of 802.11n HT20 with 800ns GI is up to 65Mbps and fallback rates of 58.5, 52, 39, 26, 19.5, 13, 6.5Mbps; the data rate of 802.11n HT20 with 400ns GI is up to 72.2Mbps and fallback rates of 65, 57.8, 43.3, 28.9, 21.7, 14.4, 7.2Mbps. The data rate of 802.11n HT40 with 800ns GI is up to 135Mbps and fallback rates of 121.5, 108, 81, 54, 40.5, 27, 13.5Mbps. The data rate of 802.11n HT40 with 400ns GI is up to 150Mbps and fallback rates of 135, 120, 90, 60, 45, 30, 15Mbps.

1.2 Function

- IEEE802.11b/g/n (1X1) based on Marvell 88W8782U solution.
- USB 2.0 Interface, High and Full Speeds supported.
- Powered by the host with a 3.3V +/- 10% supply.
- Two PCB printed antennas.
- One SPDT switch for antenna diversity.
- RoHS and Green Compliant.
- Linux supported with drivers based on Fedora Core 8.

1.3 Electrical Characteristics

Parameter		Minimum	Typical	Maximum	Units
Frequency Range		2.4	~	2.5	GHz
Current Consumption		-	-	600	mA
Input Supply Voltage	Absolute maximum voltage	2.97	3.3	3.63	V
Tx Output Power	11b	16.5	18	19.5	dBm
	11g	12.5	14	15.5	dBm
	11n-HT20	11.5	13	14.5	dBm
	11n-HT40	10.5	12	13.5	dBm
Storage Temperature		-20	~	85	°C
Storage Humidity		0	~	90	%
Operation Temperature		0	~	60	°C
ESD Level	HBM	-	1.5K	-	V
	MM	-	200	-	V

Remark: The TX output powers just depend on conduct band-edge limit.

1.4 USB 2.0 Characteristics

Low / Full Speed					
	Parameter	Minimum	Typical	Maximum	Units
Input levels	Input high voltage (driven)	2.0	-	-	V
	Input high voltage (floating)	2.7	-	3.6	V
	Input low voltage	-	-	0.8	V
	Differential input sensitivity	0.2	-	-	V
	Differential common mode range	0.8	-	2.5	V
Output level	Output low voltage	-	-	0.3	V
	Output high voltage (driven)	2.8	-	3.6	V
	Output SE1 voltage	0.8	-		V
	Output signal crossover voltage	1.3	-	2.0	V
Driver characteristics	Rise time	4	-	20	ns
	Fall time	4	-	20	ns
Clock timing	Full speed data rate	-	12.0	-	Mb/s

High Speed					
	Parameter	Minimum	Typical	Maximum	Units
Input levels	High-speed squelch detection threshold (differential signal amplitude)	100	-	150	mV
	High-speed disconnect detection threshold (differential signal amplitude)	525	-	625	mV
	High-speed data signaling common mode voltage range	-50	-	500	mV
Output level	High-speed idle level	-10.0	-	10.0	mV
	High-speed data signaling high	360	-	440	mV
	High-speed data signaling low	-10.0	-	10.0	mV
	Chirp J level (differential voltage)	700	-	1100	mV
	Chirp k level (differential voltage)	-900	-	-500	mV
Driver characteristics	Rise time (10% - 90%)	500	-	-	ps
	Fall time (10% - 90%)	500	-	-	ps
Clock timing	Full speed data rate	-	480	-	Mb/s

2. WIFI ALLIANCE CONFORMANCE

The Module is certified by the Wi-Fi Alliance. The Module and standard PC driver passes the Wi-Fi System Interoperability Test Plan including the following:

A. IEEE 802.11-2007 Standard for LAN/MAN

Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

B. IEEE P802.11n-2009 Standard for Information Technology

Telecommunications and information exchange between systems - Local and metropolitan area networks – Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment 5: Enhancements for Higher Throughput

C. Supported Encryption

- WEP64- and 128-bit encryption with hardware TKIP processing (WPA)
- AES-CCMP hardware implementation as part of 802.11i security standard (WPA2)
- AES-Cipher-Based Message Authentication Code (CMAC) as part of the 802.11w security standard
- WLAN Authentication and Privacy Infrastructure (WAPI)

3. Hardware Specification

3.1 IEEE802.11b Mode

Radio Technology	Direct Sequence Spread Spectrum (DSSS)
Operating Frequency	2412 ~ 2484MHz ISM band
Modulation Schemes	DQPSK, DBPSK and CCK
Channel Numbers	11 channels for United States 13 channels for Europe Countries 14 channels for Japan
Data Rate	1Mbps, 2Mbps, 5.5Mbps and 11Mbps
Media Access Protocol (MAC)	CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance)
Transmitter Output Power	18.0 dBm+/-1.5dBm for all data rate.
Frequency Accuracy	+/-15ppm
Minimum Receiver Sensitivity Level	Typical -99dBm for 1Mbps @ 8% PER Typical -96dBm for 2Mbps @ 8% PER Typical -92dBm for 5.5Mbps @ 8% PER Typical -89dBm for 11Mbps @ 8% PER
EVM (peak)	Typical 4% for 1Mbps @18dBm output power Typical 4% for 2Mbps @18dBm output power Typical 4% for 5.5Mbps @18dBm output power Typical 4% for 11Mbps @18dBm output power

3.2 IEEE802.11g Mode

Radio Technology	Orthogonal Frequency Division Multiplexing (OFDM)
Operating Frequency	2412 ~ 2472MHz ISM band
Modulation Schemes	BPSK, QPSK, 16QAM, 64QAM
Channel Numbers	11 channels for United States 13 channels for Europe Countries
Data Rate	6 Mbps, 9, 12, 18, 24, 36, 48, and 54Mbps
Media Access Protocol (MAC)	CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance)
Transmitter Output Power	14.0 dBm+/-1.5dBm for all data rate.
Frequency Accuracy	+/-15ppm
Minimum Receiver	Typical -91dBm for 6Mbps @ 10% PER

Sensitivity Level	Typical -87dBm for 18Mbps @ 10% PER Typical -75dBm for 54Mbps @ 10% PER
EVM	Typical -31dB for 6Mbps @15dBm output power Typical -31dB for 54Mbps @15dBm output power

3.3 IEEE802.11n (HT20) Mode

Radio Technology	Orthogonal Frequency Division Multiplexing (OFDM)
Operating Frequency	2412 ~ 2472MHz ISM band
Modulation Schemes	BPSK, QPSK, 16QAM, 64QAM
Channel Numbers	11 channels for United States 13 channels for Europe Countries
Data Rate	800ns GI: 6.5Mbps, 13, 19.5, 26, 39, 52, 58.5 and 65Mbps 400ns GI: 7.2Mbps, 14.4, 21.7, 28.9, 43.3, 57.8, 65.0 and 72.2Mbps
Media Access Protocol (MAC)	CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance)
Transmitter Output Power	13.0 dBm+/-1.5dBm for all data rate
Frequency Accuracy	+/-15ppm
Minimum Receiver Sensitivity Level	Typical -91dBm for 6.5Mbps @ 10% PER Typical -83dBm for 26Mbps @ 10% PER Typical -72dBm for 65Mbps @ 10% PER
EVM	Typical -32dB for MCS0 @15dBm output power Typical -32dB for MCS7 @15dBm output power

3.4 IEEE802.11n (HT40) Mode

Radio Technology	Orthogonal Frequency Division Multiplexing (OFDM)
Operating Frequency	2422 ~ 2462MHz ISM band
Modulation Schemes	BPSK, QPSK, 16QAM, 64QAM
Channel Numbers	9 channels for all countries
Data Rate	800ns GI: 13.5 Mbps, 27, 40.5, 54, 81, 108, 121.5 and 135Mbps 400ns GI: 15Mbps, 30, 45, 60, 90, 120, 135 and 150Mbps
Media Access Protocol (MAC)	CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance)
Transmitter Output Power	12.0 dBm+/-1.5dBm for all data rate

Frequency Accuracy	+/-15ppm
Minimum Receiver Sensitivity Level	Typical -88dBm for 13.5Mbps @ 10% PER Typical -79dBm for 54Mbps @ 10% PER Typical -69dBm for 135Mbps @ 10% PER
EVM (Test condition: Enable full packet channel estimate)	Typical -31dB for MCS0 @15dBm output power Typical -31dB for MCS7 @15dBm output power

Remark: The minimum sensitivity level is measured in FOXCONN RD Lab in shielding room. We will back off about 3dB as manufacture test due to bad background noise and interference in our production line.

3.5 Antenna Electrical Specification

Parameter	Typical	Units
Operating frequency range	2400 ~ 2500	MHz
Antenna gain (max)	TBD	TBD

3.6 Antenna Pattern

Main port

Frequency (MHz)	Vertical		Horizon	
	Peak gain (dBi)	Average gain (dBi)	Peak gain (dBi)	Average gain (dBi)
2412	TBD	TBD	TBD	TBD
2442	TBD	TBD	TBD	TBD
2472	TBD	TBD	TBD	TBD

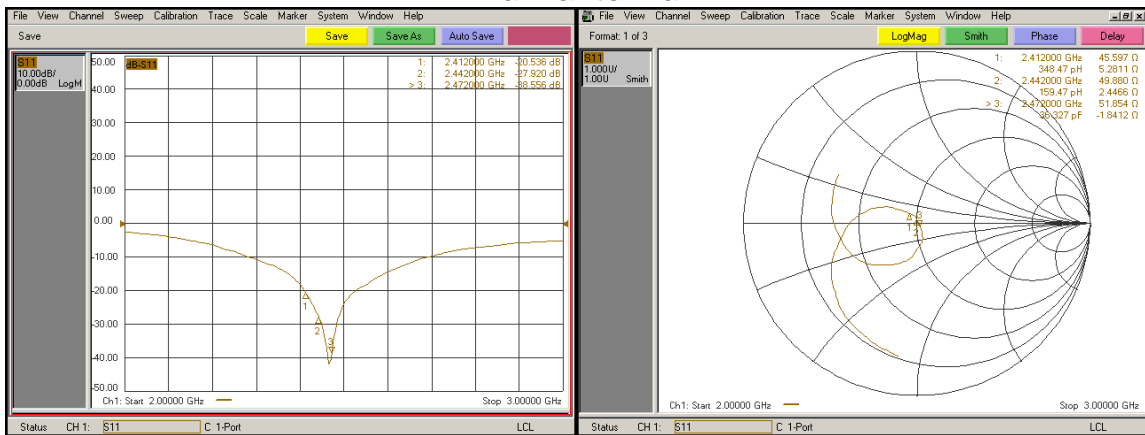
Aux port

Frequency (MHz)	Vertical		Horizon	
	Peak gain (dBi)	Average gain (dBi)	Peak gain (dBi)	Average gain (dBi)
2412	TBD	TBD	TBD	TBD
2442	TBD	TBD	TBD	TBD
2472	TBD	TBD	TBD	TBD

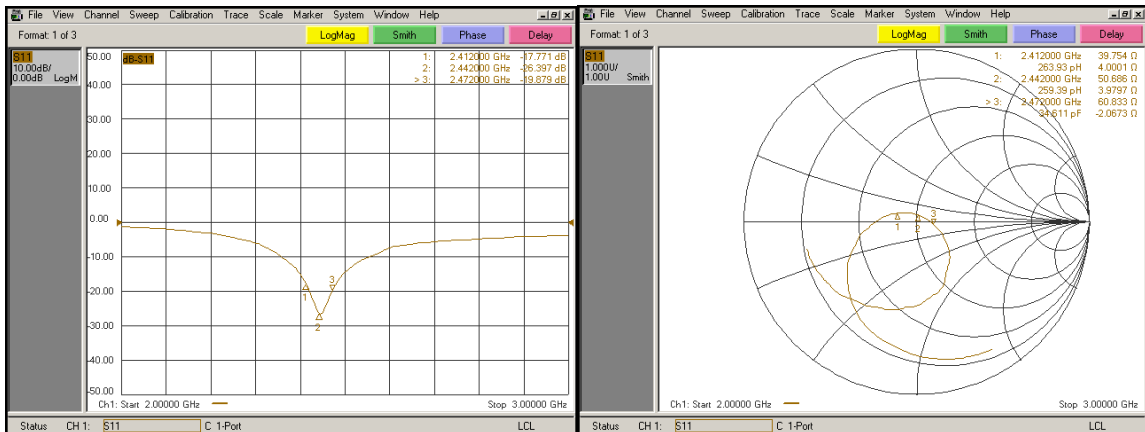
3.7 Return Loss Measurement for S11

Return Loss Measurement for S11	
Main antenna	-20.536dB@2412MHz -27.920dB@2442MHz -38.556dB@2484MHz
Aux antenna	-17.771dB@2412MHz -26.397dB@2442MHz -19.879dB@2484MHz

Main antenna



Aux antenna



Remark: the return loss measurement is base on air without any materials.

3.8 Radiated Emission

Remark: we will provide the official regulatory test report from 3rd party lab.

4. Product Requirements

4.1 Hardware Requirements

Form factor	40 mm x40mm module with 8-pin B.T.B connector
Host Interface	USB2.0 interface
PCB	4-layer design
Antenna connector	RF switch connector

4.2 Hardware Architecture

The T77H332.XX IEEE802.11b/g/n module is based on Marvell 88W8782UB0-NAP2C000 solution that is provide the combined functions of DSSS and OFDM baseband modulation, MAC, CPU, OTP (one time programmable) memory, host interfaces, power management unit (PMU) and direct conversion WLAN RF radio. This module is powered from the host (3.3V) and interfaces to the host with USB 2.0 signals and with two printed antennas for diversity and one on-board 40 MHz XTAL.



Industry Canada statement:

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna. As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
- 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne. Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be



installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 2878D-T77H332".

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 2878D- T77H332".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for reevaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: MCLT77H332". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN 60950-1: 2006+A11:2009+A1:2010+A12:2011
Safety of Information Technology Equipment
- EN 62311: 2008
Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz-300 GHz)
(IEC 62311:2007 (Modified))
- EN 300 328 V1.8.1: 2012
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- EN 301 489-1 V1.9.2: 2011
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio

equipment and services; Part 1: Common technical requirements

EN 301 489-17 V2.1.1 2009







Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

National Authorities were informed according to Article 6.4 of Frequency Notification.

Special Requirements are considered. The product is labeled with CE Marking.



 Český [Czech]	<i>[Jméno výrobce]</i> tímto prohlašuje, že tento <i>[typ zařízení]</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 Dansk [Danish]	Undertegnede <i>[fabrikantens navn]</i> erklærer herved, at følgende udstyr <i>[udstyrets typebetegnelse]</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 Deutsch [German]	Hiermit erkläre <i>[Name des Herstellers]</i> , dass sich das Gerät <i>[Gerätetyp]</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 Eesti [Estonian]	Käesolevaga kinnitab <i>[tootja nimi = name of manufacturer]</i> seadme <i>[seadme tüüp = type of equipment]</i> vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
 Español [Spanish]	Por medio de la presente <i>[nombre del fabricante]</i> declara que el <i>[clase de equipo]</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>[name of manufacturer]</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>[type of equipment]</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
 Français [French]	Par la présente <i>[nom du fabricant]</i> déclare que l'appareil <i>[type d'appareil]</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente <i>[nome del costruttore]</i> dichiara che questo <i>[tipo di apparecchio]</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>[name of manufacturer / izgatavotāja nosaukums]</i> deklarē, ka <i>[type of equipment / iekārtas tips]</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>[manufacturer name]</i> deklaruoją, kad šis <i>[equipment type]</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
 Nederlands [Dutch]	Hierbij verklaart <i>[naam van de fabrikant]</i> dat het toestel <i>[type van toestel]</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, <i>[isem tal-manifattur]</i> , jiddikjara li dan <i>[il-mudel tal-prodott]</i> jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm

	fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, [gyártó neve] nyilatkozom, hogy a [... típus] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym [nazwa producenta] oświadczam, że [nazwa wyrobu] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese]	[Nome do fabricante] declara que este [tipo de equipamento] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	[Ime proizvajalca] izjavlja, da je ta [tip opreme] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	[Meno výrobcu] týmto vyhlasuje, že [typ zariadenia] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	[Valmistaja = manufacturer] vakuuttaa täten että [type of equipment = laitteen tyyppimerkintä] tyypinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar [företag] att denna [utrustningstyp] står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.