| | | WLAN PCMCIA Station | | |
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| | | Type | Answer | Reference/ Explanation |
| **1 INTRODUCTION** | | | | |
| 1.5 | The subject of this specification is a WLAN Station. | I | | |
| 1.9 | The device shall be on piec of device, ie. The packaging can contain - beside the device - only the necessary communication and power supply cabling, but not other electrical element. | M | | |
| **2 GENERAL REQUIREMENTS** | | | | |
| **2.1 Documentations, software** | | | | |
| 2.1.1 | Detailed technical descriptions shall be attached for offered device and by Bidder. | M | | |
| 2.1.2 | Detailed hardware installation manual shall be attached for all offered device by Bidder. | M | | |
| 2.1.3 | Detailed software configuration manual shall be attached for all offered device by Bidder. | M | | |
| 2.1.4 | The Bidder shall provide the appropriate driver and utility to use the device with PCs running Windows 2000 and Windows XP. All these OSs shall be supported. | M | | |
| 2.1.5 | The Bidder shall provide the appropriate driver and utility to use the device with PCs running Windows 98SE, Windows NT 4.0, Windows Me. All these OSs shall be supported. | R | | |
| 2.2 Other | | | | |
| 2.2.1 | The Bidder shall provide three (3) pieces of the device offered if invited by the Purchasing Directorate to test its devices. | M | | |
| 2.2.2 | If the Bidder changes any software (firmware, driver or utility) or documentation part, the Bidder provide the changes on CD/DVD free of charge to Magyar Telekom Ltd. PKI-FI. | M | | |
| 2.2.3 | The Bidder shall specify the driver version of the device offered for the evaluation and for testing. | M | | |
| **4 WLAN + LAN** | | | | |
| **4.1 Introduction** | | | | |
| 4.1.1 | The WLAN system has two main components, the Access Point and the Stations. | I | | |
| 4.1.3 | The Station is located in or connected to a mobile device, such as notebook, PDA, Internet Camera, etc. The Station provides the other (client) end of the radio connection. | I | | |
| **4.2 Wireless system of the device** | | | | |
| **4.2.1 General requirements of the device** | | | | |

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| 4.2.1.1 | Wi-Fi Certification assures tested and proven interoperability among wireless computer equipment; this certification gives consumers and business buyers confidence that wireless LAN products bearing the Wi-Fi logo have passed rigorous interoperability certification requirements. Such Wi-Fi products include PCMCIA Cards for notebooks, PCI Cards for desktops, USB modules, embedded Stations in different electronic equipment and wireless base stations like access points and gateways. Wi-Fi CERTIFIED products support a maximum data rate of either 11 Mb/s (802.11b), 54 Mb/s (802.11a) or 54 Mb/s (802.11g). | I |
| 4.2.1.2 | The device shall have Wi-Fi certification and the Bidder shall submit a copy of the certification. | M |
| **4.2.3 Performance** | | |
| 4.2.3.1 | The device shall support the infrastructure mode of operation. | M |
| 4.2.3.2 | The device shall support the ad-hoc mode of operation. | R |
| 4.2.3.3 | The device shall provide ability to get the channel to operate from the Access Point in case of infrastructure mode of operation. | M |
| 4.2.3.6 | The device's radio module’s operating frequency range and number of operating channels shall conform to IEEE 802.11b standard with regard to the ETSI regulatory domain specific requirements. | M |
| 4.2.3.7 | The device's radio module’s operating frequency range and number of operating channels shall conform to IEEE 802.11g standard with regard to the ETSI regulatory domain specific requirements. | M |
| 4.2.3.14 | The Bidder shall specify the receiver sensitivity for each data rate of the device tested by 3rd party organisation. | Q |
| 4.2.3.15 | The Bidder shall specify the maximum output power of the device tested by 3rd party organization. | Q |
| 4.2.3.16 | The maximum effective isotrop radiated power (EIRP) of the radio system of the device (including antenna cable, and antenna if included) shall comply with ETS 300-328, | M |
| 4.2.3.17 | The Bidder shall provide a the receiver sensitivity for the corresponding BER value for each data rate. | Q |
| **4.2.4 Network interfaces** | | |
| 4.2.4.1 | The physical layer (layer 1) parameters shall conform to IEEE 802.11 (Local and Metropolitan Area Network Standard, 802.11 Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications, ANSI/IEEE Standard, 1999) standard. | M |
| 4.2.4.2 | The physical layer (layer 1) parameters shall conform to IEEE 802.11b (Local and Metropolitan Area Network Standard, Higher speed Physical Layer (PHY) extension in the 2.4 GHz band, ANSI/IEEE Standard, 1999) standard. | M |

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| 4.2.4.3 | The physical layer (layer 1) parameters shall conform to IEEE 802.11g radio module is offered the module's operating frequency range and number of operating channels shall conform to IEEE 802.11g (Local and Metropolitan Area Network Standard, 802.11 Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Amendment 4: Further Higher Data Rate Extension in the 2.4 GHz Band, IEEE Standard, 2003) standard. | M |
| 4.2.4.4 | The data link layer (layer 2) parameters shall conform to IEEE 802.2 (IEEE 802.2. Local Area Networks Standard, 802.2 Logical Link Control. ANSI/IEEE Standard, October 1985) and IEEE 802.3 (Local Area Networks Standard, 802.3 Carrier Sense Multiple Access with Collision Detection. ANSI/IEEE Standard, October 1985) standards. | M |
| **4.2.5 Wireless security** | | |
| 4.2.5.1 | The device shall provide capability to modify its SSID. | M |
| 4.2.5.5 | The device shall have the ability to use static 64 bit (40 bit) WEP key. | M |
| 4.2.5.6 | The device shall have the ability to use static 128 bit (104 bit) WEP key. | M |
| 4.2.5.7 | The device shall have the capability to set 4 different WEP key for 64 bit (40 bit long key to submit) and 128 bit (104 bit long key to submit) settings. | R |
| 4.2.5.9 | The Bidder shall specify all the supported security features of the offered device not required in this specification. | Q |
| **4.3 The Wired system of the device** | | |
| **4.3.2 Connectors** | | |
| 4.3.2.3 | The device shall have PCMCIA Type II physically connectable interface. | M |
| 4.3.2.5 | The device shall support accepting power supply via the physically connected interface. | M |
| 4.6.3 | The device shall have RIPv2 dynamic routing capabilities. | - |
| **5 MANAGEMENT** | | |
| 5.11 | The usage of the device in different places may require different radio settings to manage. | I |
| 5.12 | The device shall provide method to add, remove, store, save or load different radio settings without restarting the device and the operating system the device is working with.. | M |
| **7 ENVIRONMENTAL REQUIREMENTS** | | |
| **7.1 Environmental Features** | | |
| 7.1.1 | The classification of the groups and their strictness of environmental features shall be EN 60721-3, where their domesticated versions are the Standard serials MSZ EN 60721-3. | I |
| **7.2 Storage** | | |

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| 7.2.1 | The storage is envisaged in weather protected location, however, neither temperature nor humidity control will be provided.<br>The equipment shall comply with the Standard MSZ EN 300 019-1-1 Class 1.2. (Weather-protected, not temperature-controlled storage location). This specification is a combination of classes 1K4/1Z2/1Z3/1Z5/1B2/1C2/1S3/1M2 of the Standard MSZ EN 60721-3-1.<br>Temperature range: -25....+55 °C<br>Relative humidity: 10...100 % | R |
| **7.3 Transportation** | | |
| 7.3.1 | The transportation is considered to be normal public transportation, where no special precautions have been taken.<br>The equipment shall comply with the Standard MSZ EN 300 019-1-2 Class 2.3. (Public transportation)<br>This specification is a combination of classes 2K4/2B2/2C2/2S2/2M2(2M3) of the Standard MSZ EN 60721-3-2.<br>Temperature range: -40...+70 °C<br>Relative humidity: 10...100 % (combined with rapid changes in the temperature) | R |
| **7.4 Operation** | | |
| **7.4.1 Operation of equipment** | | |
| 7.4.1.1 | The equipment is supposed to be indoor equipment that is placed at the subscribers. There is no risk of biological attacks and the equipment is exposed to normal urban air pollution and insignificant vibration and shock.<br>The indoor equipment shall comply with the Standard MSZ EN 300 019-1-3 Class 3.2. (Partly temperature-controlled location) which is a combination of classes 3K5/3Z2/3Z4/3B2/3C2(3C1)/3S3/3M2 of the Standard MSZ EN 60721-3-3.<br>Specified temperature limits: -5....+45 °C<br>Relative humidity: 5....95 % | R |
| **7.4.2 Test conditions** | | |
| 7.4.2.1 | The environmental resistance tests shall be carried out in accordance with the relevant parts of Standard MSZ EN 300 019-2. | R |
| **8 ENVIRONMENTAL PROTECTION REQUIREMENTS** | | |
| 8.1 | The offered equipment shall not contain components, materials and fittings that cause negative environmental impact during transportation, storage or operation. | M |
| 8.2 | The equipment shall be provided in accordance with the Directive 2002/95/EC of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment. | M |
| 8.3 | The Bidder shall give a list of names, types and mass or mass percent of materials of enclosure, components, etc. | M |

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| 8.4 | The Bidder shall give a list for wrapping materials. Only recycling materials shall be used for wrapping. | R |
| 8.5 | In case if the Bidder (manufacturer) of the equipment has a certificate of MSZ EN ISO 14001 or other environmental management system, a copy of the certificate shall be attached to the Bid. | R |

## 9 SAFETY REQUIREMENTS

### 9.1 General safety requirements

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| 9.1.1 | The equipment, its sub-systems and accessories shall comply with the general life- and material safety requirements. The Bidder shall guarantee that precautions will be taken in order to prevent any injuries or damages due to the following hazards (MSZ EN 60950 and MSZ EN 41003):<br>- electric shock,<br>- energy hazards,<br>- fire,<br>- mechanical or heat hazards,<br>- radiation hazards,<br>- laser hazards,<br>- chemical hazards. | M |
| 9.1.2 | Only equipment shall be allowed for installation that comply with the relevant requirements in safety Standards (compliance evaluation procedure: IKIM 79/97.(XII.31.) Ministerial Decree or LVD 73/23/EEC). The safety test report of the equipment and of its local power supply (if exists) shall be attached to the Bid according to EN 60950. | M |
| 9.1.3 | Markings and/or identity labels shall be placed on the equipment and on their subsystems. The labels have to be placed on a visible place and have to contain durably the following information:<br>- type,<br>- manufacturer's name,<br>- power supply voltage,<br>- fabrication number and year of production,<br>- classes of equipment - protection against electric shock (at class II. equipment the symbol, too),<br>- CE marking. | R |
| 9.1.4 | Bidders should provide a list containing all other safety Standards and documentation used, if any. | Q |

### 9.2 Electrical Safety Requirements

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| 9.2.1 | With respect to electrical safety, the equipment and its power supply (if exists) SHALL comply with specifications in Standards MSZ EN 60950-1 and MSZ EN 41003. | M |
| 9.2.2 | The system of protection against electric shock, requirements for earthing and equipotential bonding shall be established according to specifications in Standard MSZ ETS 300 253 and MSZ 2364 series of standards. | R |
| 9.2.3 | The degree of protection of the equipment (refer to Standard MSZ EN 60529) shall be in accordance with the place of application. (The equipment are supposed to be indoor equipment which are placed at telecommunication buildings.) | R |
| 9.2.4 | Bidders shall indicate the protection method against electric shock applied for the components of equipment and the system as a whole, and safety requirements to be followed during the installation. | R |
| 9.2.5 | Plugs and socket-outlets shall comply with the specifications in Standards MSZ EN 60320-1 and MSZ 9871-2. | R |
| 9.2.6 | Appropriate safety signs according to Standard MSZ 453 shall be used on equipment parts and housings where dangerous voltages may appear. | R |
| **10 STRUCTURAL AND FIRE PROOFING REQUIREMENTS** | | |
| 10.1 | Bid shall be made for such individually covered table/wall mounted model or models, by which the required services, tailored to the needs of the place of use, can be implemented. | R |
| 10.2 | The Bidder shall give the largest outer and installation dimensions of the offered units (and basic accessories, such as for e.g. network adapter, etc.), the features of the equipment and their weight referring to the complete assembly. | Q |
| 10.3 | The Bidder shall give in details all the information to know regarding the installation and operation, the specific knowledge of the place of use, including eventual limitations.<br>The installation /operation documentation shipped with the offered equipment shall contain all the necessary important information required for the appropriate and safety operation. | Q |
| 10.4 | The outer cover of the units or equipment, offered in the bid, shall be resisting to mechanical damaging impacts that may occur during implementation/installation and operation. | R |
| 10.5 | The structural design (construction) of the offered equipment and the materials chosen shall not cause injury to persons, or damage, or deterioration to objects, if properly used.<br>The technical characteristics of the basic components used shall comply with the requirements undertaken in or deriving from the technical specifications of the product. | R |
| 10.6 | The equipment offered in the bid shall have natural cooling. | R |

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| 10.7 | The surface temperature of the parts that can be touched of the offered operating equipment shall not exceed the value stipulated in Table 16 of Section 5.1 of Standard MSZ EN 60950:1995. | R |
| 10.8 | The outer cover of the offered equipment shall meet the relevant requirements of Flammability Class V-1 according to Standard MSZ EN 60950. | R |
| **11 RELIABILITY** | | |
| 11.1 | The Bidder shall give the reliability (MTBF) data guaranteed by him for the equipment. | M |
| **12 TECHNICAL CONFORMANCE TESTS** | | |
| 12.1 | All offered equipment of the Supplier shall comply with the technical specifications stipulated in the tender. This compliance will be checked in the frame of the Technical Conformance Tests. | I |
| 12.2 | The evaluation of the submitted bids – carried out on the basis of the bid and the available documents – will be also the pre-qualification procedure within the Technical Conformance Tests. Contract will be concluded only with Bidder(s) who has/have been qualified as "acceptable" in the pre-qualification. | I |
| 12.3 | In the frame of the Technical Conformance Tests the laboratory tests will be carried out only for the equipment of the selected Bidder and after the conclusion of the contract with him. | I |
| 12.4 | The Technical Conformance Tests will be carried out by PKI Telecommunications Development Institute. The equipment exposed to the applied testing stresses and loads shall comply with all requirements marked with {M} and all those requirements that have been agreed in the contract. | I |
| 12.5 | A negative (unsatisfactory) conclusion of the Technical Conformance Tests may lead to or result in the termination of the Contract. | I |
| **13 CONFORMANCE TESTS OF THE MODIFIED (HARDWARE AND/OR SOFTWARE) VERSIONS OF THE CONTRACTED EQUIPMENT** | | |
| 13.1 | During the lifetime of the contract the Supplier shall inform the Magyar Telekom in advance if any modifications would be carried out on the equipment to be supplied under the contract. | I |
| 13.2 | The modified equipment is considered as „new version of equipment" that shall be tested for technical conformance. | I |
| 13.3 | The Technical Conformance Tests of the new version of equipment will be carried out by PKI Telecommunications Development Institute. | I |
| 13.4 | The new version of equipment may be supplied, put into operation and can be used for service after having approval from the PKI Telecommunications Development Institute. | I |
| **14 POWER SUPPLY REQUIREMENTS** | | |
| **14.1 General requirements** | | |

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| 14.1.1.1 | The power supply of the equipment can be with the following voltages:<br>230 V AC | - |
| **14.2 Power supply requirements of equipment supplied with AC** | | |
| **14.2.1 Voltage applied** | | |
| 14.2.1.1 | The equipment must operate from 230V nominal voltage, 50 Hz nominal frequency, one phase AC mains. | - |
| **14.2.2 Normal service voltage and frequency range** | | |
| 14.2.2.1 | The equipment must operate according to the normal specification if the power supply voltage (measured between the zero and the phase in RMS) is in the following range: 207 ... 253 V<br>The frequency in the normal operation voltage range must be between 48 | - |
| **14.2.3 Abnormal service voltage under steady voltage conditions** | | |
| 14.2.3.1 | The equipment should not suffer any physical or electrical damage if the voltage of the power supply (in RMS value) is within the following range: 0 ... 207 V<br>In this case the frequency must be between 45 and 55 Hz. | - |
| **14.2.4 Returning to the normal service voltage range** | | |
| 14.2.4.1 | Following the abnormal voltage power supply according to the above point or mains failure the equipment must again operate according to its specification without requiring for this any action (restart). | - |
| **14.2.5 Short time voltage interruption** | | |
| 14.2.5.1 | The equipment must operate according to its specification even in that case if the continuity of AC power supply breaks for not longer time than 20 ms. | - |
| **14.2.6 Input over current protection** | | |
| 14.2.6.1 | The equipment must have built-in over current protection feature (fuse, circuit breaker). | - |
| **14.2.7 Inrush current** | | |
| 14.2.7.1 | The inrush current of the equipment must not exceed the value stipulated in the Standard MSZ ETS 300 132-1 (ETS 300 132-1) | - |
| **14.2.8 Power consumption** | | |
| 14.2.8.1 | The Bidder must provide the power consumption of the equipment according to the standard EN 62018. | - |
| **15 EMC REQUIREMENT** | | |
| **15.1** | **General EMC requirements** | |
| 15.1.1 | From Electro Magnetic Compatibility (EMC) point of view the equipment shall comply with the European Union's Directive 89/336/EEC, or with the equivalent Hungarian regulation, i.e. the 31/1999 (VI.11.) GM-KHVM and the modifying 61/2004 (IV.24.) GKM-KHVM joint decree, as well as with the European Union's Directive 5/1999/EC applicable to R&TTE equipment. | M |
| **15.2 EMC Test Report** | | |

15.2.1 The Bidder shall attach the EMC Test Report to prove that all the equipment meet the above M requirements.

**16.1 Preliminary settings**

16.1.1

No preliminary settings can be done.