

TABLE OF CONTENTS

	page
WELCOME	2
Who can use the TCB program?	2
Certification services offered	2
Can TCBs approve all devices?	2
GETTING STARTED	3
Confidentiality	3
TCB Application Form	4
TCB CERTIFICATION PROCESS	5
Quotation/Contract Review	5
Applications submittals	5
Certification review	7
Certification	7
Surveillance	7
Withdrawal of Certification	8
COMPLAINTS, APPEALS AND DISPUTES PROCEDURE	8
Complaints to Certification Body	8
Appeals and Disputes to Certification Body	8
Complaints to Applicants	8
PRICE SCHEME	9
ANNEX A - RF DEVICE CERTIFICATION EXHIBITS	10
ANNEX B - PRODUCT LABEL FORMATS	12
ANNEX C - USER INFORMATION FOR RF DEVICES.....	13

WELCOME

Intertek Testing Services is a global testing and certification organization. We are pleased to offer our services for bringing your products to market quickly and economically. Intertek Hong Kong has been accredited for testing services according to ISO/IEC 17025 and for product certification according to ISO/IEC 17065.

Intertek Hong Kong was designated as a Telecommunication Certification Body (TCB) under the Asia-Pacific Economic Cooperation Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment (APEC Telecom MRA) between the Government of Hong Kong, China and the Government of the United States of America (USA) under authorization of the Federal Communications Commission (FCC). Please visit our web site at: <http://www.intertek.com.hk/electronics/tcb/>.

TCB's were first created on June 2, 2000, and were allowed to issue Grants of Equipment Authorization. Prior to June 2, 2000 only the FCC could certify radio equipment, and register terminal equipment. Over the years the lead-time at the FCC has varied from 4 to 10 weeks for radio equipment.

Who can use the TCB program?

Our services are available to manufacturers of equipment, and/or independent test laboratories who require certification or registration of their products prior to marketing them in the USA. These products may be ITE or RF devices.

TCB's cannot:

- unnecessarily repeat tests;
- grant a waiver of the rules;
- grant a certification for which the FCC rules do not exist or are unclear;
- take enforcement actions;
- grant a certification for a product already certified, except as a permissive change;
- authorize a transfer of control of a grantee.

Certification services offered

For RF devices, including FCC Parts 11, 15 and 18:

- **Grantee Code** application (47 CFR 2.925)
- **Original Certification** (47 CFR 2.907, 2.1033)
- **Class II Permissive Change** (47 CFR 2.1043)
- **Change in identification of equipment** (47 CFR 2.933)

Can TCBs approve all devices?

In establishing the requirements for Telecommunications Certification Bodies (TCBs), the Commission stated that while it intended to allow TCBs to certify a broad range of equipment, certain functions should continue to be performed by the Commission. At the present time, the TCB is allowed to certify all equipment subject to certification in the FCC rules, but in cases where the FCC has not provided specific guidance or the applicant intends to use alternatives to published procedures or guidelines to demonstrate compliance, such applications are subject to approval using the Pre-Approval Guidance procedures. An up-to-date Pre-Approval Guidance procedures is available from the FCC Knowledge DataBase (KDB) site at <https://apps.fcc.gov/oetcf/kdb/forms/FTSsearchResultPage.cfm?switch=P&id=28319>.

GETTING STARTED

If you have never received an FCC Grant of Authorization before, you will need to obtain one or more identification codes. You need to do this only once, for all future filings.

- For ITE and RF devices: an FCC Registration Number (**FRN**), for accounting purposes. Visit the CORES website at: <https://fjallfoss.fcc.gov/coresWeb/publicHome.do> to obtain; it is free.
- For ITE and RF devices: a **Grantee Code**, identifying the party responsible for compliance of the device. To obtain, visit: <https://apps.fcc.gov/eas/RegisterGrantee.do>. There is fee be prepared to pay on-line with a credit card. The Grantee Code becomes part of the FCC ID you must display on your approved product.

Confidentiality

All documents provided to Intertek Hong Kong for the purpose of TCB certification are handled within our organization with the utmost confidentiality. Please be aware that ALL EXHIBITS PROVIDED FOR CERTIFICATION (except for certain scanning receiver exhibits) WILL BE AVAILABLE TO THE PUBLIC ON THE FCC WEB SITE, unless you designate the eligible exhibits as "confidential." There is an additional TCB fee for handling confidential exhibits. Likewise, all correspondence with Intertek is available to the FCC and the public. The FCC is a federal agency and as such has duties to the public to disclose information made known to it (see 47 CFR 0). In addition, the equipment information may be disclosed to Hong Kong Accreditation Service (HKAS) for the purpose of accreditation only.

There are two types of confidentiality available to the applicant:

- **short-term confidentiality**, exhibits that will be hidden from public view in the FCC database for a period of up to 180 days from the Grant of Authorization or the date of first marketing or sale, whichever comes first; after which, they will become and remain visible. The applicant may specify the length of the short-term confidentiality period prior to its expiry, by letter request to the TCB.
- **permanent confidentiality**, exhibits that will never appear to public view in the FCC database - but are accessible to the FCC.

A request for confidentiality, indicating which type and for which exhibits, must be indicated in items "Long-Term Confidentiality" and "Short-Term Confidentiality" of the TCB Application Form 731 and a letter making specific request for confidentiality must accompany the application as a separate exhibit. This letter must state exactly which portions of the application are to be held in confidence and for what specific reason. Please contact us to obtain a pro forma sample letter.

Only certain exhibits may be routinely held in permanent or short-term confidence, with justification. Please consult the table on the following page for the available choices.

Users manuals will only be held in confidence under certain conditions, such as when the manual will only be available to licensed or specially trained personnel. Internal photographs will only be held in confidence if the device is sealed using specialty fasteners that cannot be opened using common hand tools or if the PCB's are completely potted.

Owing to the possibility that a scanning receiver could illegally be modified to receive cellular communications, some of the exhibits submitted for the certification of a scanning receiver are **required** by the FCC to be held in permanent confidence; these exhibits do not require the support of a letter requesting confidentiality. Such exhibits are indicated below with an "R".

Exhibits in the table below that are **not** marked with an "R" or an "X" may not be held confidential.

X - Exhibits that may be held confidential

R - scanning receiver exhibits that are always held permanently confidential

REQUIRED EXHIBIT		Short-term Confidentiality	Permanent Confidentiality
Cover letter(s)			
Attestation letter(s)			
Block diagrams		X	R, X
External Photos		X	
FCC ID label and location			
Internal Photos		X	R; X (only with additional justification)
Operational Description	NOTE 1	X	R, X
Parts List, if applicable	NOTE 1, 3	X	R, X
Schematics	NOTE 1, 3	X	R, X
Test set-up photos		X	
Test Report	NOTE 4		
Tune Up procedure, if applicable	NOTE 1, 3	X	R, X
Users Manual		X	X (only with additional justification)
RF Exposure Information, if applicable	NOTE 1		

NOTE 1: Item NOT needed for computer or peripheral.

NOTE 2: Should describe purpose(s) of letter(s). For example:

- Request for confidentiality.
- Description of changes [for a permissive change application].
- Prior correspondence or interpretations from FCC on this application.

NOTE 3: Part List and Tune up procedure are not required for Part 11, 15 or 18 applications.

However, a parts list should be provided if component values are not visible on the schematic diagram.

NOTE 4: Test report shall have accreditation symbol under ISO/IEC 17025. Otherwise, supporting document showing the accreditation scope at the time of the issuance of test report is required,

TCB Application Form

Before we undertake any certification work, we must have a signed Intertek TCB Application Form and Certification Agreement (if applicable) from the applicant.

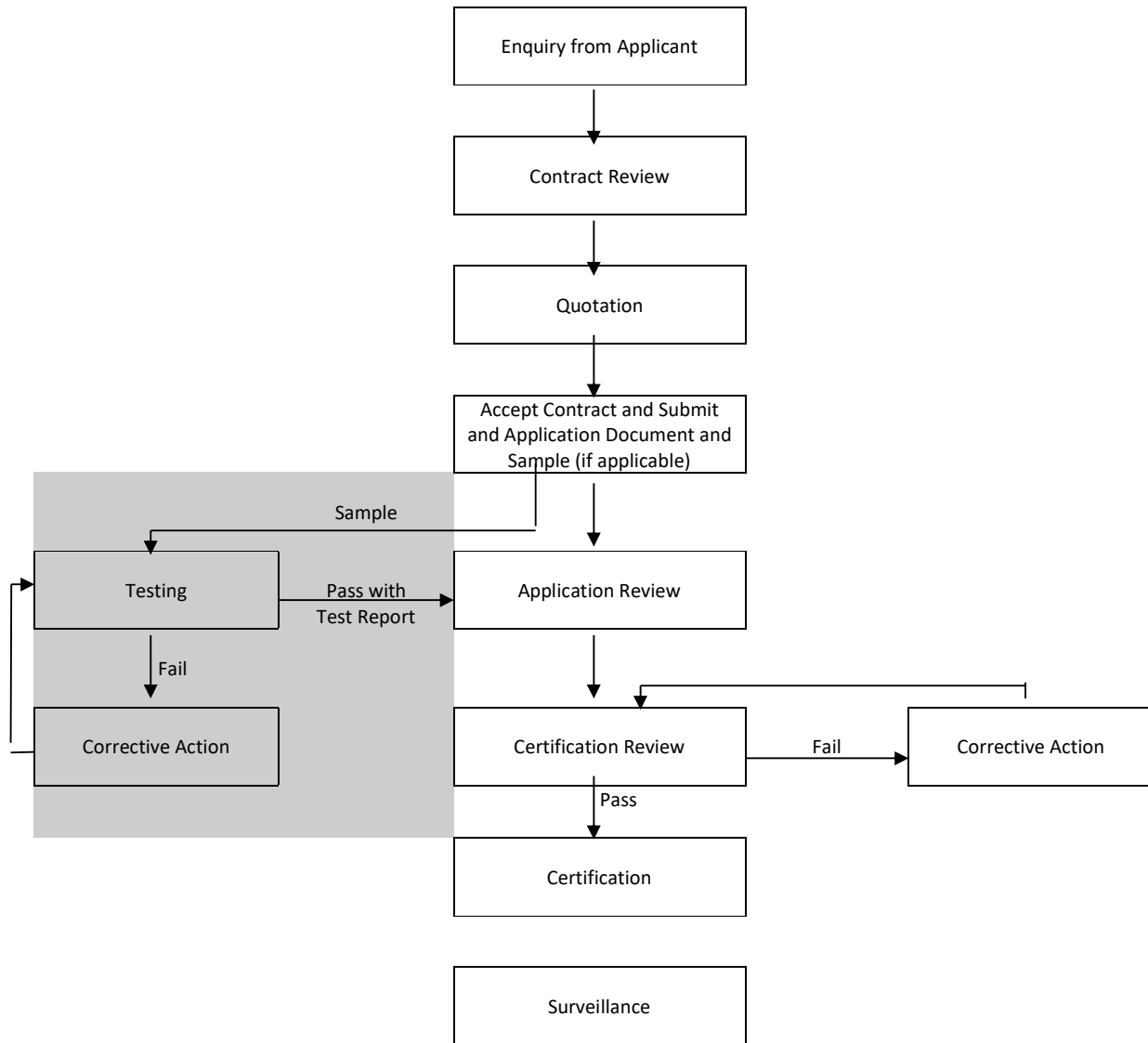
For new applicant, you should submit a copy of business license to Intertek Hong Kong TCB. Electronic copy is also acceptable.

Intertek Testing Services Hong Kong Ltd.

2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong SAR, China.

Phone: (852)21738888 Fax: (852)27855487 E-mail: certhk.admin@intertek.com

TCB CERTIFICATION PROCESS



Quotation/Contract Review

To request for quotation, please send us the technical specification and user/service manual of the equipment subject to certification.

Applications submittals

To confirm the acceptance of the contract/quotation, please sign back the quotation and pay application fee.

Also, we accept applications for certification in electronic format.

We require that all applications be submitted in DOC, PDF, TXT, XLS or JPEG electronic formats. Maximum file size is 6 megabytes for PDF and JPG formats. These are limits imposed by the FCC's database. In practice, the files should be smaller than the 6 megabytes maximum allowed. File sizes smaller than 2 megabytes are preferred. We will convert to PDF all files not received in either PDF or JPG formats.

Please send files as attachments, to our e-mail address certhk.admin@intertek.com. The format is unstructured, so that you should select filenames that are simple and self-describing. In addition to, or instead of, uploading the files you may send your application(s) on a CD ROM. For speed of processing we recommend that you name your files in the following manner, identifying all files by model number ABC and exhibit type:

Example: ABC block diagram.doc
 ABC schematic.pdf
 ABC parts list.xls

All applications from which a TCB issues a certification must be submitted to the FCC electronically and must be done by the TCB within 5 days of issuing the Grant. Applications must contain all of the exhibits as required by the FCC. Additionally, the total number of files should not exceed 15. Each exhibit type below should be sent as an individual file. For example, Test Setup Photos should be separate from the Test Report and Internal Photos should be separate from External Photos. For a detailed description of these exhibits, see Annex A, and Annex B for label details. The Intertek TCB Application Form and certification agreement (if applicable) must accompany each application. In general, the application must include:

REQUIRED EXHIBIT	FILENAME TO USE
TCB Application Form filled out	(Model) Application form
Cover letter(s)	(Model) NOTE 2
Attestation letter	(Model) Attestation
FCC ID label sample	(Model) Label
FCC ID label location information	(Model) Label location
External Photos, preferably in PDF format as one file, page 1 & 2 etc.	(Model) External photos
Internal Photos, preferably in PDF format, as above	(Model) Internal photos
Test set-up photos	(Model) Test setup photos
Operational Description (Theory of Operation) NOTE 1	(Model) Operational description
Block diagrams	(Model) Block diagram
Schematics NOTE 1, 3	(Model) Schematic
Test Report NOTE 4	(Model) Test report
Users Manual	(Model) User manual
Tune Up procedure, if applicable NOTE 1, 3	(Model) Tuning procedure
Parts List, if applicable NOTE 1, 3	(Model) Parts list
RF Exposure Information, if applicable NOTE 1	(Model) RF exposure info

NOTE 1: Item NOT needed for computer or peripheral.

NOTE 2: Should describe purpose(s) of letter(s). For example:

- Request for confidentiality.
- Description of changes [for a permissive change application].
- Prior correspondence or interpretations from FCC on this application.

NOTE 3: Part List and Tune Up procedure are not required for Part 11, 15 or 18 applications. However, a parts list should be provided if component values are not visible on the schematic diagram.

NOTE 4: All testing for certification shall be performed by a FCC-recognized accredited testing laboratory. The test report shall have accreditation symbol under ISO/IEC 17025. Otherwise, supporting document showing the accreditation scope at the time of the issuance of test report is required,

Testing

TCB's are required to accept test reports and applications from any credible source. We are obliged by our accreditation to assure that the data in test reports is reasonable, and we can do that by knowing your accreditations. All testing for certification shall be performed by a FCC-recognized accredited testing laboratory. Notwithstanding a test laboratory fulfilling the requirements above, Intertek Hong Kong reserves the right to reject the test report which contains serious technical or quality system discrepancies.

Alternatively, Intertek Hong Kong may, within our capacity, perform the necessary tests on the sample against the certification requirement.

Consultancy service (EMC modification service) would not be available for projects involving TCB certification.

Certification review

Certification review includes a review of the product against all applicable requirements from FCC, internal consistency of data, and presence of all required supporting documentation/exhibits.

In case of any incomplete test report, or supporting documentation/required exhibits, we will notify the applicant to provide supplemental information before performing the certification.

When the certification review outcome is negative, any non-conformity(ies) will be provided to you. Presence of all required corrective supporting documentation/exhibits will be required. If all nonconformities cannot be resolved in 90 calendar days, the application shall be dismissed without prejudice. The applicant may re-apply for certification at any time.

Certification

When the certification review is completed with positive result i.e. the product concerned complies with the FCC requirements, Original Grant of Authorization will be issued and will be e-mailed to the applicant in PDF format. Copies of the Grant for all devices can be obtained by visiting the FCC's electronic filing Site at: <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>. Select "Generic Search", type your FCC ID (Grantee Code and Equipment Product Code) and start the search. You will be given the option to view the Grant and may print it from there as well.

Surveillance

As an accredited certification body, we are required to assure that products we certify remain compliant. We do this in accordance with FCC guidelines, by testing production samples of the products we certify, on an ongoing basis. You are expected to have samples available for at least one year after the last production date and responds to a request from the TCB or the FCC at any time. These samples are an unmodified, untested for FCC compliance 'production' samples and should be randomly selected from a warehouse or production line. The samples must be representative of what is actually being marketed and must also include the instruction manuals and all related accessories.

Stating that a device is no longer manufactured is not a sufficient excuse for not providing a sample. Also, stating that the device will not be marketed in the United States does not absolve you of the requirement to provide post grant production samples upon request by the TCB or the FCC. Failure to provide a post-grant production sample(s) may result in blocking of the Grantee Code for use in future equipment authorization applications, or other FCC action.

The FCC-mandated sampling levels are 1% for devices involving SAR and 5% for all other categories. Products selected in a surveillance audit are examined for compliance with labeling, user information and technical requirements. There is no additional charge to you if your product is audited.

If a product is found to fail the applicable requirements during a surveillance audit, we will promptly notify the applicant. We are also required to notify the FCC, which is responsible for any resulting enforcement action.

Withdrawal of Certification

Applicant may withdraw the certification application before the grant of equipment authorization. After the grant of equipment authorization, applicant may request TCB or FCC to withdraw the equipment authorization. However, the withdrawal of equipment authorization is subject to FCC's decision.

COMPLAINTS, APPEALS AND DISPUTES PROCEDURE

Complaints to Certification Body

Applicant or other parties may file a complaint against Intertek Hong Kong TCB and details of complaint shall be submitted in writing by fax or by email.

Following the receipt of complaint, the complainant will be acknowledged forthwith the receipt of the complaint. Internal investigation will be carried out.

Within two weeks upon receipt of the complaint, follow-up action will be determined and will be implemented within a suitable time scale. The complainant will be provided with a written response to the complaint (if necessary).

Appeals and Disputes to Certification Body

After a complaint has been recorded and investigated and a decision or conclusion has been reached, an effected party may choose to appeal Intertek Hong Kong TCB's decision.

The investigation will be carried out by Appeals Panel. During investigation, a review of applicant's documented dispute, related reports, and consultation with the applicant may be included.

After investigation, Intertek Hong Kong TCB will provide the appellant with report showing the findings and reasons for the decision reached.

In the event that discussions within the representatives within Intertek do not resolve the dispute/appeal, FCC should be consulted for resolution.

Complaints to Applicants

You are required to:

- a) keep a record of all complaints together with relevant information/document made known to the applicant relating to a product's compliance with requirements of the certification, and to make these records available to the TCB when requested;
- b) take appropriate action with respect to such complaints and any deficiencies found in products that affect compliance with the requirements for certification. In this context "appropriate action" shall depend upon the nature of the complaint or deficiency, and may range from a notice issued to the applicant to notification of the FCC.

PRICE SCHEME

Services
Type test
Certification Fee

For quotation or any services promotion, please contact:

Ms. Nicole Mak

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Office: +852 2173 8460

Email: nicole.mak@intertek.com

ANNEX A - RF DEVICE CERTIFICATION EXHIBITS

Applications are easier to review if there is only one file per exhibit type. More than one file per exhibit type is acceptable, but the submittal should be limited to a reasonable number of files. Also, Confidential information should be located in the proper exhibit type, but in a separate file. Limiting individual file sizes to less than three megabytes decreases processing time and allows for smoother uploading of the file to the Commission. All applications should be divided into the relevant 13 exhibit types below.

EXHIBIT TYPES

Attestation Statements:	<p>This section should include any attestation statements as to testing and compliance required by the rules. Examples of some attestations include:</p> <ul style="list-style-type: none">■ §15.121 statement of compliance for scanning receivers■ GMDSS references to international requirements■ EPIRB prior approval statements by RTCM, USCG, and COSPAS/SARSAT■ FAA coordination letters. <p>Please note that attestation statements are not required in all cases.</p>
Block Diagram:	<p>This section should include the block diagram of the EUT showing all internal oscillators and clock frequencies. Although a block diagram is not specifically required for some devices, including a block diagram in the application will make processing of it easier.</p>
Cover Letters:	<p>Any cover letter connected with the application should be included here. Some examples of letters that should go here are: a confidentiality request filed pursuant to Sections §0.457 and §0.459; I letters describing the changes made to a device pursuant to Sections §2.933 and §2.1043, indicating exactly what changes were made to it that constitute a permissive change instead of requiring a new application for equipment authorization. Other letters that should be included here are letters from the applicant confirming that any modifications made to the device by the test lab during testing will be implemented into all production units.</p>
External Photos:	<p>This section should include clear, focused pictures of the overall appearance showing all user accessible controls and connectors.</p>
ID Label/Location Info:	<p>This section should include the FCC ID label, its location on the product, and any statements required by the rules that will be on the product. Some examples of statements required that should go in this section are the §15.19 and §15.214(c) statements.</p>
Internal Photos:	<p>This section should include internal photos showing the top and bottom of each printed circuit board sufficient to clearly show component placement and chassis assembly. If some components of a printed circuit board are covered by shielding, photos should show the board with the shielding in place and with the shielding removed.</p>

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Operational Description:	<p>This section should include any operational or technical descriptions regarding how the device operates, is modulated, or meets specific requirements. Some examples of operational descriptions include:</p> <ul style="list-style-type: none">■ A description of how the device works.■ Necessary bandwidth calculations.■ Description of emission designator and type of modulation.■ Description of §15.231 timing requirements and how they are met.■ Description of listen before link (§15.233(b)(2)(i)) and other cordless telephone requirements and compliance per §15.214 and §15.233.■ Description of spread spectrum frequency hopping scheme.■ Description of scanning receiver compliance with §15.121 cellular band restrictions.■ Description of frequency hopper receiver compliance■ UPCS UTAM requirements compliance■ Description of circuitry required by §2.1033(b)(4).■ §15.203 antenna requirement compliance.■ §15.245 compliance regarding location of intended use.
Parts List/Tune Up Info:	<p>This section should include a list of active devices, and the tune up procedure as required by §2.1033(c)(9). Pursuant to Section §2.1033(c)(6), provide the tune-up procedure over the power range, or at specific operating power levels.</p>
RF Exposure Info:	<p>This section should include a statement affirming compliance with respect to controlled/uncontrolled exposure limits for MPE/SAR evaluation of mobile/portable devices (technical data upon request) or reasons for categorical exclusion from routine RF evaluation.</p>
Schematics:	<p>This section should include the electrical schematics of the device showing RF generation circuits, input signal path circuitry, and clock lines.</p>
Test Report:	<p>This section should include the test report and data showing compliance with all applicable technical standards. Test report is defined as a "complete package" showing data, graphs, test method description, and a list of test equipment.</p>
Test Setup Photos:	<p>This section should include any required photos of the test setup, showing that the device under test and its support equipment are properly cabled and the setup configuration is in accordance with the requirements. Test set-up photographs or diagrams are required for both radiated and AC line conducted test set-ups by various test procedures referenced in the FCC Rules, such as ANSI C63.4 in Section §15.31 of the Rules. Although not specifically required for some tests, including a photo or diagram of a test set-up in the application will make processing of it easier.</p>
Users Manual:	<p>This section should include instruction, installation, operators, or technical manuals with required "information to the users." The information submitted here should include any information necessary to show compliance of the device. Some examples of the technical information required is any information pertaining to: power output, operating frequency, operating channels, operating modes, data rates, tuning range, intended use, general installation instructions, and antenna connector/gain information. Some examples of Information not required is any information pertaining to: troubleshooting, maintenance, packing/unpacking, shipping, or warranties.</p>

ANNEX B - PRODUCT LABEL FORMATS

Part 15 label for a certified device:

FCC ID: XYZ-ABCDEFGH

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.

NOTES:

- 1) Text beginning "This device complies..." may be removed from label and placed in user manual, if certified device is either too small (smaller than the average palm of a hand), or too irregularly shaped to support a sufficiently large label.
- 2) The FCC ID: is the FCC Identifier, and is unique to each product. It consists of:

XYZ = Grantee Code, assigned to applicant by FCC. The applicant needs only one Grantee Code for all future products.

-ABCDEFGH = Product Identifier, selected by the applicant to uniquely identify the product. The Product Identifier consists of up to 14 alphanumeric characters (0...9, A...Z) and dash, in any combination.

ANNEX C - USER INFORMATION FOR RF DEVICES

FCC RULE PART	REQUIRED USER MANUAL TEXT
Part 15 - all	Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
§15.21	<i>In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.</i>
Part 15 - Class A digital device or peripheral	NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
§15.105(a)	
Part 15 - Class B digital device or peripheral	NOTE: 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 or more of the following measures:
§15.105(b)	<ul style="list-style-type: none"> - 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.