

Table 3: Criteria for the Performance of Passive Electronic Seals

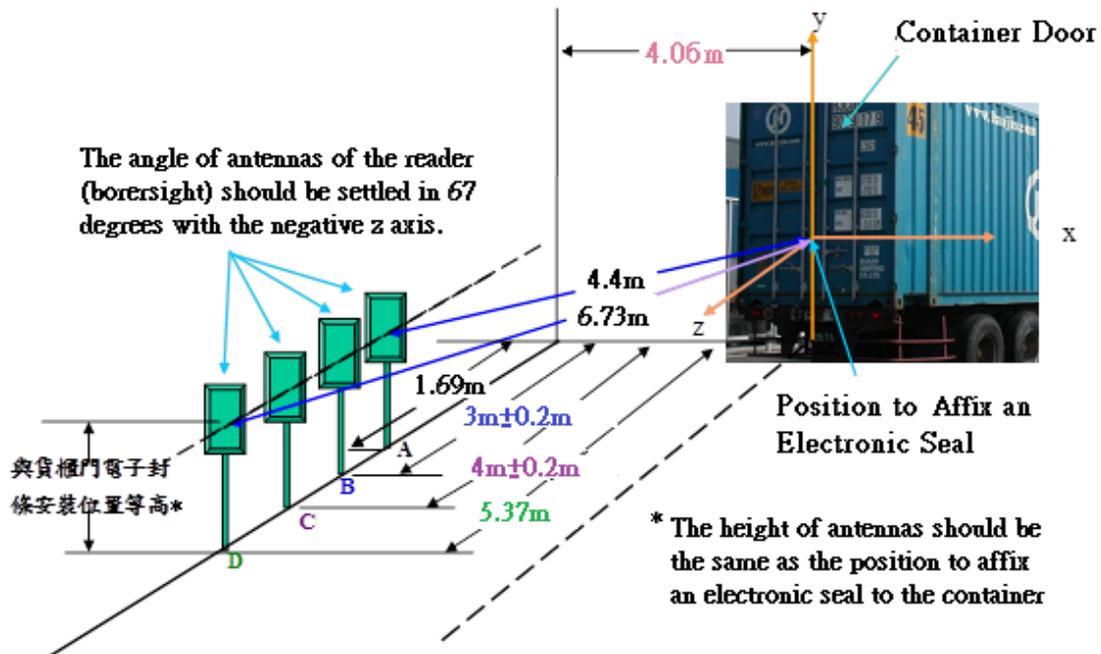
<p>Specifications of International Standards</p>	<ol style="list-style-type: none"> 1. Passive electronic seals should be compliant with the protocol of unique code and the standards of Electronic Product Code Class 1 Generation 2/ISO 18000-6C. 2. Where passive electronic seals are affixed to designated places of the container or of other means of transportation by the Customs and the said transportations are passing the Customs clearance sites which has been equipped with static or handheld RFID readers, the affixed seals should be automatically read by electronic seal monitoring system implemented by the Customs to conduct border enforcement. The aforementioned reader should also be compliant with the standards of EPC C1G2 and has been certified by National Communications Commission to approve that reader is in accordance with the regulations of low power radio-frequency devices.
<p>Specifications of Hardware</p>	<ol style="list-style-type: none"> 1. The forms of passive electronic seals which are dedicated to be affixed to sea containers are limited to bolt seals and cable seals. The mechanical security of these passive electronic seals should be compliant with CNS 17712 standards for high-security seal. A legible method should be adopted for users to distinguish high-security seal, for example, the pattern of “H” should be marked or printed in the main body of seal. 2. The names or marks of the firm and the serial numbers should be printed on the distinct location of the main body of a passive electronic seal. The characters and patterns of the printing should be legible and easy to distinguish. The passive electronic seal must be designed to be affixed to the hasp for sealing or the assigned hasp of the door of a container or a bonded truck. If this passive electronic seal is a bolt seal, its length must be no more than 21 cm after sealing and a

	<p>necessary part for cutting should also be prepared.</p> <p>3. Passive electronic seals must be used outdoors for all day. (Waterproof, high temperature resistance and shockproof are required while being affixed to container trucks or bonded trucks on road.)</p> <p>4. Passive electronic seal with embedded battery should be able to be read and recognized by static or handheld readers implemented by the Customs.</p> <p>5. The bolt seal should be compliant with the following requirements that once the pin has been inserted into the bush, the shaft of a pin and the base section of a bush should not be able to be whirled or twisted over one circle (360°) in opposite direction without using tools, and if the bolt seal is forcibly whirled or twisted by tools which resulted in any difference of circumstances of whirling after damage, the malicious tampering will leave significant evidences or marks for visual inspection.</p>
<p>Specifications of Embedded IC of Electronic Seal</p>	<p>1. The identification code of the embedded chip (so- called secret codes) of the passive electronic seal should be read by readers operated at the frequency from 922MHz to 928MHz.</p> <p>2. The length of the tag identification bank of the embedded chip of the passive electronic seal which has been transmitted to the reader must be no less than 112 bits and include an unique identification code of the chip (so-called secret code), which length must be no less than 32 bits and cannot be either modified or rewritten. The identification code must be unique and consistent with ordinary codes.</p>
<p>Specifications of Appearance</p>	<p>1. The main body of self-prepared passive electronic seals should be in any color other than white.</p> <p>2. The visible serial number (ordinary code) of each self-prepared passive electronic seal should be printed or etched on the</p>

	<p>surface of the seal. The first two numbers of the serial number should be alphabets, and the code of these alphabets of each firm is controlled by Customs Administration. The last eight numbers of the serial number are Arabic numerals. (The type and the length of the code could be changed as required.)</p>
<p>Specifications of On-site Static Test</p>	<ol style="list-style-type: none">1. The identification code (including secret code) of the embedded chip of each self-prepared passive electronic seal should be read. The ordinary code decrypted by the reader must be consistent with the visible serial number printed or etched on the surface of the seal.2. If a passive electronic seal is not affixed firmly, this seal should not be read by RFID readers implemented by the Customs. Meanwhile, if a passive electronic seal is broken (e.g. cut) after being affixed, a mechanism for users to distinguish the difference between the conditions before and after destruction should be enforced.3. The length for readers to receive the signal depends on on-site circumstances after the self-prepared passive electronic seal has been affixed to the hasp of the container door. However, while using readers implemented by the Customs, this length should be no more than 7m.4. An on-site static test should be conducted for self-prepared passive electronic seals. The steps of this test are illustrated in the Appendix of this Table.

Appendix of Table 3

Instructions of On-site Static Test of Passive Electronic Seals



Performance Test

1. The instruments and container should be settled following the above figure (Axis X is parallel and axis Y is vertical to the hasp of the right container door. The two axis cross in the hasp.) to meet the requirements of EPC Class 1 Generation 2 and National Communications Commission. The operating frequency of the reader for passive electronic seals is from 922MHz to 928MHz, and the EIRP (Effective Isotropic Radiated Power) of the linear antenna must be 4W. First, the staff of the agency will affix the electronic seal to the hasp of the right container door in any direction, and then he/she will read the seal by a handheld RFID reader to confirm that the seal has been affixed well. Second, turn on the static RFID reader and confirm the four antennas settled in position A, B, C and D can effectively receive and emit the secret code of the seal affixed to the hasp. The staff of the agency shall confirm the secret code is consistent with the ordinary code of the seal. (The agency may use an apparatus of container door structure which height is the same as a container loaded in a container truck to substitute a real container.)
2. The agency shall confirm that the length of the tag identification bank of the embedded chip of the passive electronic seal which has been transmitted to the reader must be no less than 112 bits and include an unique identification code of the chip (so-called secret code), which length must be no less than

32 bits and cannot be either modified or rewritten.

3. If a passive electronic seal is not affixed firmly, this seal should not be read by the RFID reader. Meanwhile, if a passive electronic seal is broken (e.g. cut) after being affixed, a mechanism for users to distinguish the difference between the conditions before and after destruction should be enforced.
4. The amount of the samples for each test is 20 pieces of electronic seals. Every electronic seal should be tested following step 1 to 3 prescribed above. If more than one electronic seal cannot meet any requirement of the above steps during the test, **this test should be terminated and the electronic seal would be failed to pass the on-site static test.**