



Date: February 19, 2019

Attention: Application Examiner and Reviewing Engineer

Re: Request for confidentiality of internal photos

Applicant: Earth Science Systems, LLC
FCC Grantee Code is: 2AP78
IC Company Code is: 24708

FCC ID: 2AP78-CS1

IC: 24708-CS1

To whom it may concern:

Earth Science Systems, LLC (ESS) requests that certain portions of the application for equipment certification for the referenced FCC identifiers are permanently withheld from public disclosure. Specifically, with reference to FCC Rules Sections 0.457(d) and 0.459 for requesting confidentiality, the following sections of the application are requested to be kept confidential.

Exhibit Type	File Name
Schematics	ESS Concrete Scanner - Schematics.pdf
Block Diagrams	ESS Concrete Scanner - Block Diagrams.pdf
Operational and Functional Description	ESS Concrete Scanner - Operational Description.pdf
Internal Photos	ESS Concrete Scanner - Internal Photos.pdf

The rationale for request for confidentiality is that the information listed above is Trade Secret and is not normally released to anyone outside the company. ESS has invested considerable time and materials in research and development to produce the referenced product. Disclosure of the confidential portions of this application to competitors would not only give them significant competitive advantages in developing similar products, but would also disclose successful implementation of unpublished leading-edge technology developed by ESS.

With regard to the internal photos, the Commission usually denies confidentiality of internal photograph on the grounds that the information in the photos can be obtained by competitors who purchase and disassemble the device. However, ESS requests that the internal photos are held confidential for the following reasons.

1. The device is sealed and its internal appearance is not accessible to purchasers of the device. Disassembly of the product by individuals outside our organization would almost certainly result in irreparable damage to the unit and render it nonoperational. The product's enclosure is permanently sealed with industrial strength adhesive, and opening the enclosure would require cutting into the unit.

Additionally, the screws holding the housing together have been glued in place and opening the housing would require drilling out the screws, which poses a substantial risk of permanent damage.

2. Disassembly of the product by individuals outside our organization will likely result in permanent damage to the antennas and shield assembly because the antenna elements, radar absorbing foam, pre-amplifiers, and pulsers are glued and soldered together. Disassembly would result in damage to the foam and possibly the circuit boards. Persons outside our organization would not be able to determine the type of foam needed for repair.
3. The product does not contain user serviceable components. Notices are placed on the instrument warning that there are not user serviceable components inside the unit and that disassembly voids any warranties. ESS has never released disassembly instructions and does not answer questions regarding disassembly. The design of internal components are Trade Secret.
4. If the photos were made public, it would give competitors access to critical components of the product's design, in which ESS has invested a considerable amount of time and expense. A knowledgeable person would be able to identify and reverse engineer critical components of the system, and possibly produce a schematic diagram. A knowledgeable person would be able to estimate the manufacturing costs and man-hours needed for assembly.

The Commission has previously granted confidentiality under similar conditions to the following applications: FCC ID QLA250MHZ, FCC ID QLAMID, FCC ID QLA500MHZ, FCC ID QLA800MHZ, FCC ID OPLQ5C, FCC ID OPLQM1020, FCC ID OPLQ4-300, FCC ID OPLQ5C, FCC ID QF7PALXMT, FCC ID QF750350US, FCC ID QF742600, FCC ID QF7MINIXT, and FCC ID QF7350HS. Furthermore, the legal basis of our request can be found in the following references:

- McDonnell Douglas Corp. v. NASA, 180 F.3d 303, 304-05 (D.C. Cir. 1999), quoting Critical Mass Energy Project v. NRC, 975 F.2d 871, 879 (D.C. Cir. 1992)(en banc). See also National Parks & Conservation Ass'n v. Morton, 498 F.2d 765, 770 (D.C. Cir. 1974)
- Worthington Compressors, Inc., v. Costle, 662 F.2d 45 51 (D.C. Cir. 1981), citing National Parks & Conservation Ass'n v. Morton, 498 F.2d 765, 770 (D.C. Cir. 1974)

In summary, we respectfully ask that the documents listed above be kept confidential. If there are questions or further information is needed, please contact me at the number below. Thank you for your consideration of this matter.

Sincerely,



Charles Oden
President and CTO