

# Fujitsu FOMA 706i Water Proof Phone Evaluaton

Aug 19, 2008

Mark Wiltse

## Fujitsu 706i Evaluation



Fujitsu's F705i is an ultrathin waterproof 3G phone that can withstand immersion for up to a minute.

Fujitsu's F706i is an ultrathin waterproof 3G phone that claims IPX5 protocal





### **Summary of Findings**

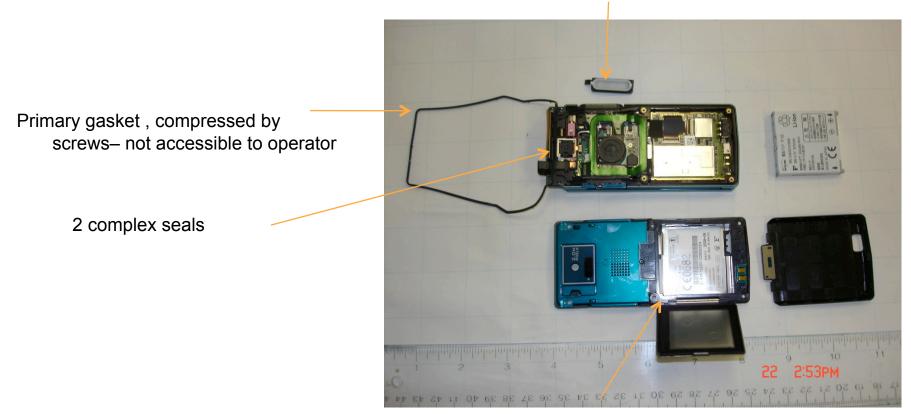
- The Fujitsu waterproofing technology is a gasket seal method, not a hydrophobic coating approach
- The gasket seal technology has some complexity to it, with compound seals, dynamic seals, and very tight tolerances
- The phone is quite heavy and large some of this probably due to the water sealing method
- Care and handling still required per instructions
- Dynamic seals will fail after repeated movement







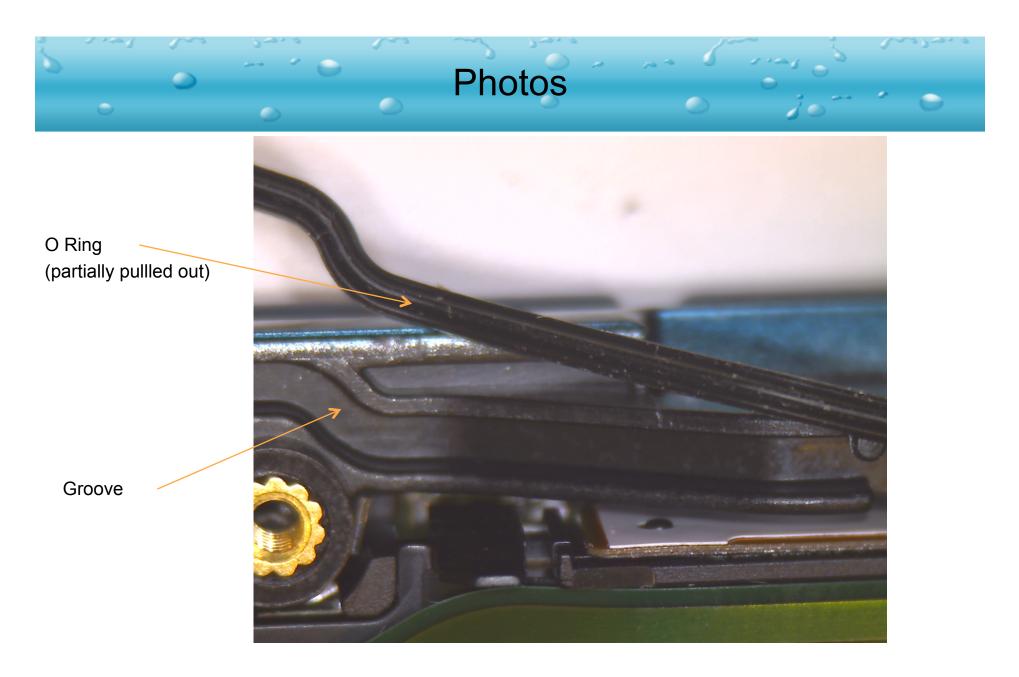
Power cable gasket, no compression



Battery hinged gasket with latch compression–accessible to operator



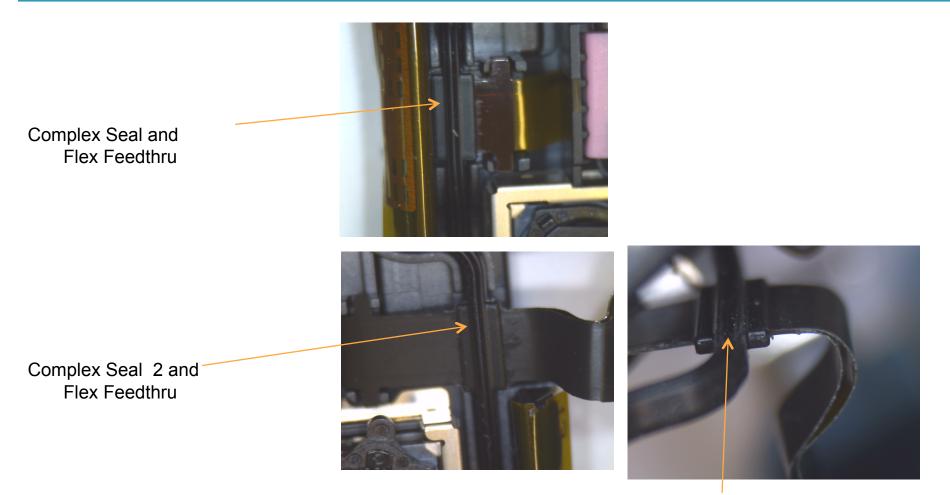












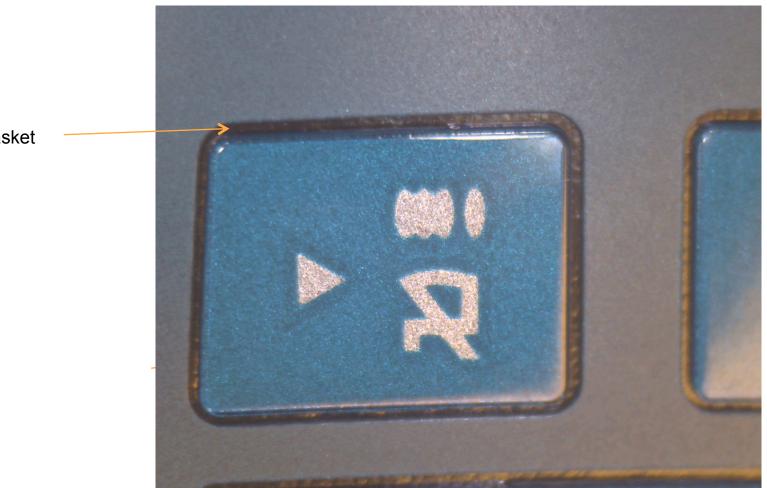
Complex Seal 2 and Flex Feedthru





**Confidential Information** 





Gasket



Confidential Information





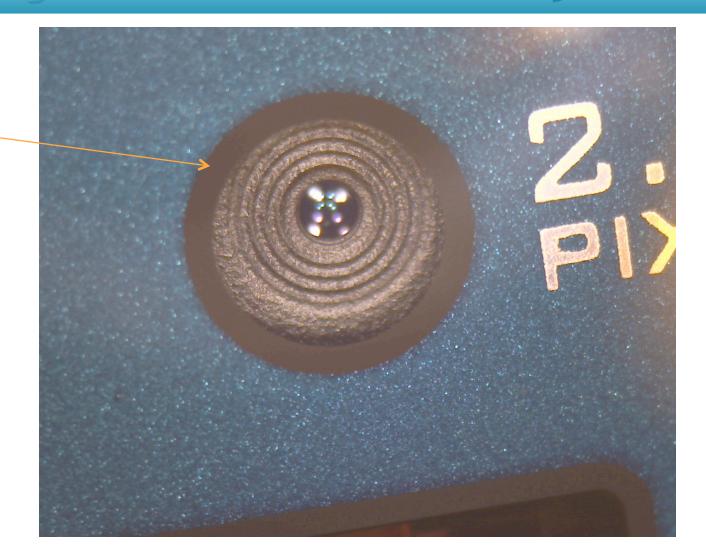


Gasket





## Camera Seal



Gasket



**Confidential Information** 



## Corner Seal Adhesive Peeling

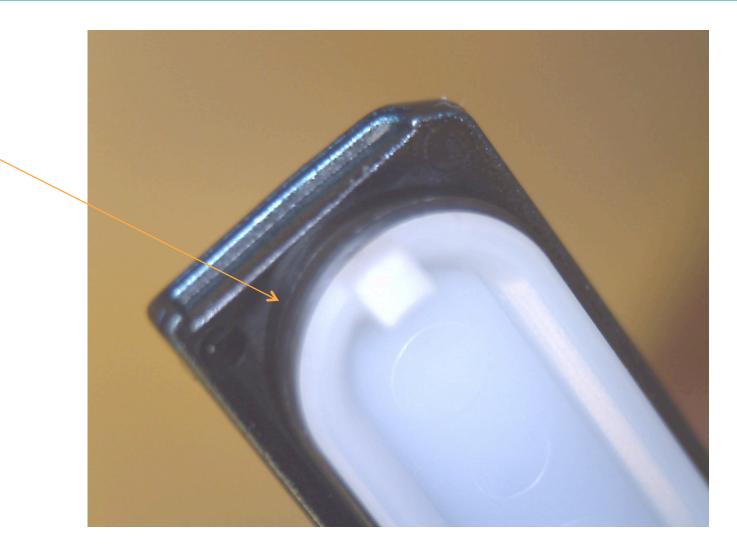




**Confidential Information** 



## Recharge Port Cover



Gasket



**Confidential Information** 



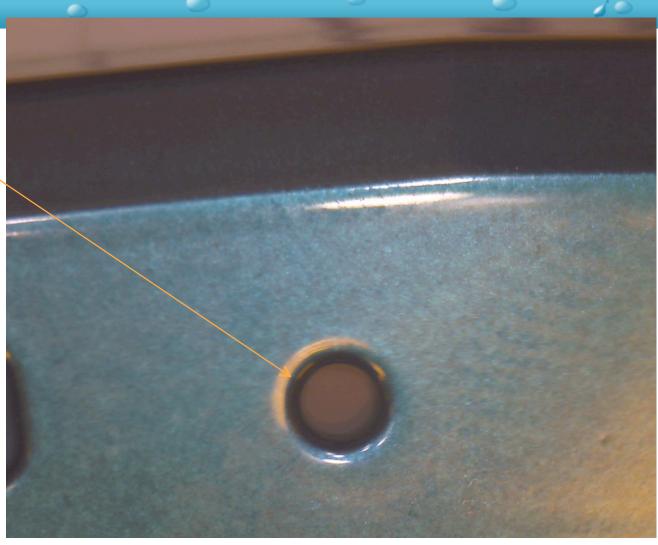
## **Power Adaptor Port**



Sealing Surface Lateral seal



## Microphone

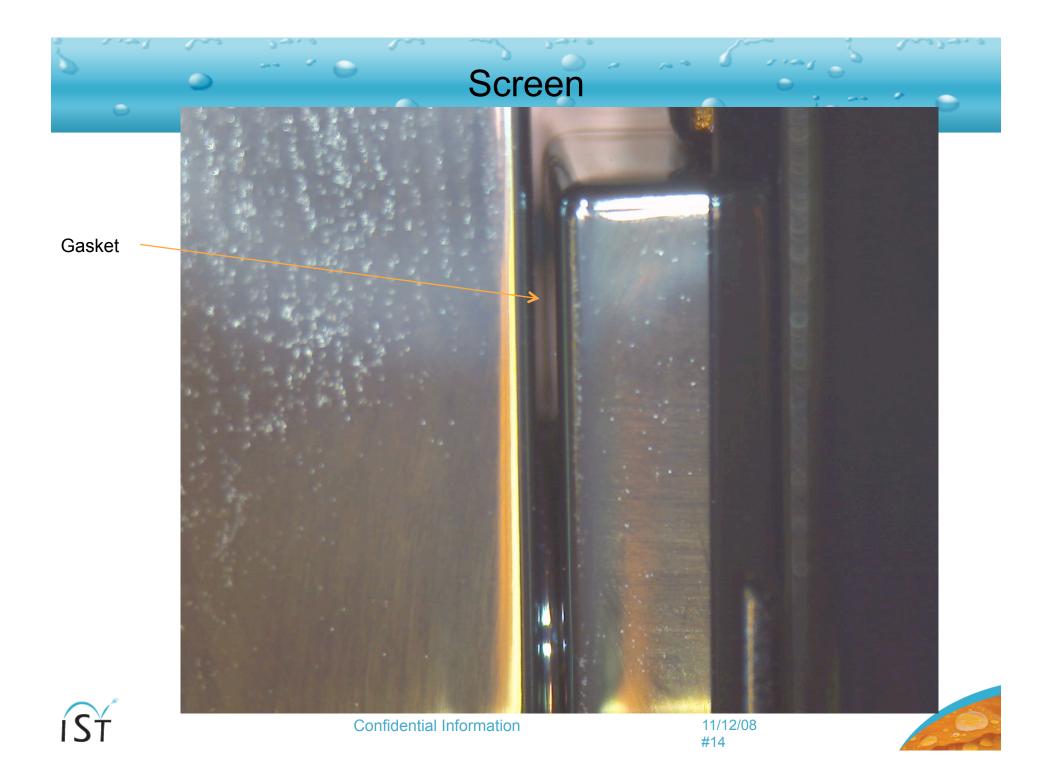


Gasket



**Confidential Information** 





## **Battery Cover**



Gasket

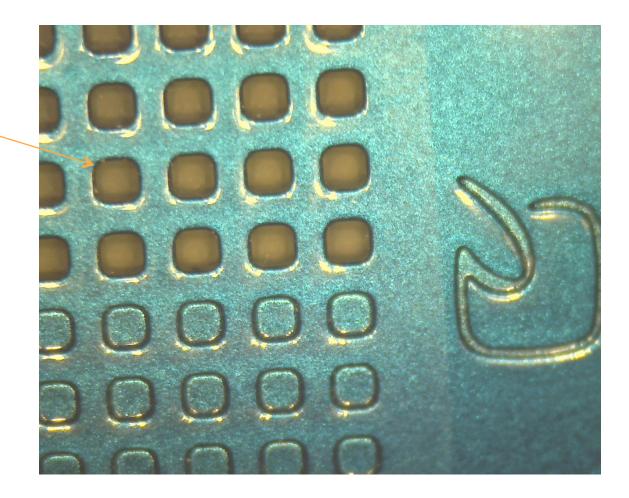


**Confidential Information** 











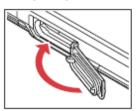
**Confidential Information** 



### Instructions – Limited Claim

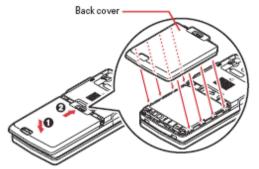
### Important precautions

- To keep the waterproof performance, be sure to observe the points below.
- · Securely close the external connection jack cap and back cover.
- · Make sure that the cap and back cover are completely closed without floating.
- · Before using, make sure that the back cover lever is at the LOCK position.
- Closing external connection jack cap

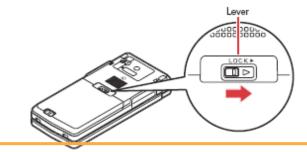


#### Installing back cover

① Align 8 tabs of the back cover with concaves of FOMA terminal. While pressing the back cover in the direction of ① so that there is no gap between FOMA terminal and back cover, slide the back cover in the direction of ② to install.



② Lock the back cover by sliding its lever in the direction of the arrow.



- Do not use FOMA terminal underwater (including opening/closing and keypad operations).
- Do not let FOMA terminal wet with liquids other than water of room temperature.

#### <Example>





Scap/Detergent/Bath powder Ocean water

Swimming pool





22 Easy Search/Contents/Precautions



11/12/08 #17



### Instructions / Limitations

IF.

To maintain the waterproof performance, replacement of parts is required every 2 years regardless of whether FOMA terminal is normal or abnormal. DOCOMO replaces the parts as a chargeable service. Bring FOMA terminal to sales outlet such as DOCOMO Shop.

#### Precautions

- Securely lock the back cover and firmly close the external connection jack cap.
   Even a fine obstacle (one hair, one grain of sand, tiny fiber, etc.) put between contact surfaces may cause water to enter inside.
- If FOMA terminal gets wet with water or other liquids with the external connection jack cap or back cover open, the liquid may enter inside the terminal causing electric shocks or troubles. Stop using FOMA terminal, turn the power OFF, remove the battery pack and contact a DOCOMO-specified repair office.
- The external connection jack cap and the rubber packing of the inner lid plays an important role for maintaining waterproofness. Do not remove or scratch it. Also, prevent dust from adhering to it.
- Do not leave water on FOMA terminal. In a cold region, water may freeze causing troubles.
- Do not apply water flow stronger than the limit (e.g., such water flow that gives you pain when applied to your skin directly from a faucet or shower). It may cause troubles though F706i provides waterproof performance of IPX5.
- Do not wash FOMA terminal with a washing machine etc.
- Accessories and optional devices are not waterproof. When performing 1Seg watching etc. with FOMA terminal installed in desktop holder, do not use it in the bath room, shower room, kitchen or lavatory even if it is not connected to AC adapter.
- Do not put FOMA terminal in hot water, use it in a sauna or apply hot airflow (of a dryer etc.) to it.
- Never try to charge the battery pack when FOMA terminal is wet.
- Do not pick the microphone, earpiece or speaker with a swab or sharp object. It
  may damage the waterproof performance.
- · Do not leave FOMA terminal wet. It may cause the power jacks to short-circuit.
- FOMA terminal does not float on water.

- Do not let FOMA terminal fall. It may give scratches causing the waterproof performance to degrade.
- If the back cover is damaged, replace it. Water may enter inside from a damaged section causing troubles such as electric shocks or corrosion of the battery.
- Do not leave water on the microphone, earpiece or speaker. Such water may disturb talking.

DOCOMO does not guarantee actual operations under all states. Malfunctions deemed to be caused by inappropriate operations of the customer are not covered by the warranty.

### Draining water when FOMA terminal gets wet

When FOMA terminal is wet, water may flow out after wiping it off; drain the water in the steps below.

① Wipe FOMA terminal surface with dry, clean cloth etc.



Gasket sensitive to dust

#### Easy Search/Contents/Precautions 23

ה





### Shake Water Off

② Shake FOMA terminal approximately 20 times, firmly holding its hinge section, until there are no water scattering.

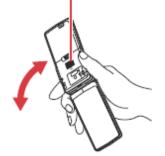
To drain water off the microphone, shake FOMA terminal with the microphone upward



To drain water off the earpiece, shake FOMA terminal with the earpiece upward



To drain water off the speaker, shake FOMA terminal with the speaker upward



- \* When draining water from periphery of the back cover, shake the FOMA terminal keeping its back cover side upward.
- ③ Softly press dry, clean cloth etc., against FOMA terminal to wipe off water remaining in the microphone, earpiece, speaker, keys, hinge section or the ditch for retracting 1Seg antenna.







11/12/08 #19



### Shake Water Off

### Warranty and After-Sales Service

### \* Warranty

- FOMA terminal is provided with a written warranty. Make sure that you receive
  it. Check the written contents and items such as "shop name/date of purchase"
  and keep it in a safe place. If it does not contain the necessary information,
  contact the shop where you bought it. The warranty is valid for a period of one
  year from the date of purchase.
- This product and all accessories are subject to change, in part or whole, for the sake of improvement without prior notice.
- Since troubles, repair or other handling of FOMA terminal may cause contents in phonebook etc. to be modified or deleted. DOCOMO recommends making a copy of the phonebook data etc., in case. And, in repairing etc. of FOMA terminal, information downloaded through i-mode or i-αppli is not transferred to repaired FOMA terminal with some exceptions according to the copyright law.
  - \* The data such as phonebook, i-motion or data used by i-αppli in FOMA terminal can be saved in microSD card.
  - \* This FOMA terminal allows you to save phonebook and other data in Data Center by using Data Security Service (a charged service requiring subscription).
  - \* If a PC is available, you can use DOCOMO keitai datalink (→P388) and FOMA USB Cable with Charge Function 01/02 (optional) or FOMA USB Cable (optional) to transfer stored contents in phonebook etc. to the PC and store.

### \* After-Sales Service

#### When problems occur

Before requesting service, read the section of "Troubleshooting"(→P436). If the problem still persists, contact "Repairs" on the back of this manual.

- If the result of inquiries indicates that a repair is required Take your FOMA terminal to DOCOMO-specified repair office. Be sure to check the opening hours of the office before you go. Note that you must bring the warranty.
- In the warranty period
- FOMA terminal is repaired at no charge subject to the conditions of the warranty.
- The warranty must be presented to receive warranty service. The subscriber is charged for the repair of items not covered in the warranty or repairs of defects resulting from misuse, accident, neglect, etc. even during the warranty period.
- The subscriber is charged even during the warranty period for the repair of failures caused by the use of devices or consumable items that are not DOCOMO-specified.
- The subscriber is charged for the repair of the color LCD or connector if broken after purchase.
- Please be forewarned that repair may not be possible in the cases below.
- When judged at the repair office as malfunction due to moisture (e.g. when detected in a moisture seal reaction).
- When corrosion due to moisture, condensation, perspiration, etc. is detected by the inspection, or when internal boards are damaged or deformed (also when external connection jack (earphone/microphone jack), LCD are damaged or the terminal is rifted, repair may not be possible).
- \* Repair, if at all possible, is not covered by the warranty and is charged.
- After expiration of the warranty
- · All repairs that are requested are charged.
- Replacement parts
- Replacement parts (parts required to maintain the product functions) are basically kept in stock for at least 6 years after termination of production. However, repair may not be possible due to lack of repair parts etc. Depending on the nature of the required repair, it may still be possible to repair your phone even after this period. Call the contacts listed on the back of this manual, "Repairs".



11/12/08 #20



### Shake Water Off

### Notes

- Do not modify FOMA terminal or its accessories.
  - May cause fire, injury or damage.
  - Modified FOMA terminals etc. are repaired only after the customer accepts that the modified
    parts are to be restored to the condition at the time of purchase. However, repair may be
    refused depending on the nature of modification.
- · The cases below may be regarded as modifications.
  - A sticker etc. is put on the LCD or keypad part
  - FOMA terminal is embellished with adhesive material etc.
- Exteriors are replaced with other than DOCOMO's genuine parts
- Repair of failures or damage caused by modification is charged even during the warranty period.
- Do not remove any inscription stickers attached to the FOMA. The inscription stickers certify that FOMA terminal satisfies specific technical standards. Note that, if stickers are removed intentionally or reattached in such a way that confirmation of the sticker's contents is impossible, repair or servicing may be refused because confirmation of whether the phone conforms to relevant technical standards cannot be made.
- Function settings and information such as total calls may be cleared (reset) by malfunctions, repair or other handling of FOMA terminal. Should that happen, set up the functions again.
- Magnetic components are used in the earpiece, speaker, etc. of FOMA terminal. Do not allow cash cards or other devices that are vulnerable to magnetism to come into contact with the phone.
- If FOMA terminal becomes wet or moist, turn the power off and remove the battery pack immediately and bring the terminal to the repair office as soon as possible. However, repair may not be possible depending on the condition of FOMA terminal.



