

N9913A-06

Modification Recommended Service Note

Supersedes:
NONE

N9913A – 4 GHz FieldFox RF analyzer

Serial Numbers: See **Serial Numbers** below.

The Problem – The internal Main Memory (SD) card can fail. Refer to www.keysight.com and the **Contact Keysight** link.

Equipment and Parts Required:

See tables 1 and 2 below.

IMPORTANT! This modification **MUST** be done at a Keysight Service Center.

ADMINISTRATIVE INFORMATION

ACTION	STANDARDS
CATEGORY: AGREEABLE TIME	LABOR: 1.0 Hours

LOCATION	SERVICE:
CATEGORY: SERVICE CENTER	INVENTORY: SCRAP

AVAILABILITY: PRODUCT'S SUPPORT LIFE	NO CHARGE AVAILABLE UNTIL: 31july2020
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Calibration Required

PRODUCT LINE: PLWN
AUTHOR: CR/KS

ADDITIONAL INFORMATION:

Affects: N9913A/14A/15A/16A/17A/18A, N9925A/26A/28A, and N9935A/36A/37A/38A

Situation:

The internal Main Memory (SD) card can fail. Refer to www.keysight.com and the **Contact Keysight** link.

IMPORTANT! The following Table 1 list of parts is provided for reference only! This modification **MUST** be done at a Keysight Service Center.

Table 1 Equipment Required

Description	Qty	Part Number
Exacto knife	1	--
SD card (32 GB's) or less Formatted to FAT32 (used for partitioning and loading the new SD card in the FieldFox)	1	--
T-8 Torx driver; set to 6 in-lb	1	--
T-10 Torx driver; set to 9 in-lb	1	--
T-6 Torx driver; set to 3 in-lb (A 1.5 mm allen wrench works fine.)	1	--
Dow Corning 3145 RTV	1	0470-0450

Table 2 Parts Required

Description	Qty	Part Number
Repair and Re-assembly kit (Refer to Table 2)	1	N9927-60130
Delkin SD Card	1	1819-1343

Solution/Action:

IMPORTANT! This modification **MUST** be performed at a Keysight Service Center. Contact Keysight Technologies to arrange repair (www.keysight.com).

Before Starting the Service Note Process:

1. Ensure the unit will boot to the FW.
2. Verify the unit to see that it is running FW version A.10.17 or above. If an older version of the FW is present then upgrade the FW to the latest version. This will be needed to back up the User Data and Factory Data.
 - a. To verify the FW version, follow these steps:
 - i. Press the System Button (7)
 - ii. Press the Soft Key **Service Diagnostics**
 - iii. Press the Soft Key **System Information**
 - iv. Find the Firmware Release and verify the version number.
 - b. If the FW is less than A.10.17 upgrade the FW to the latest version from the FW download page <https://www.keysight.com/main/editorial.jsp?cc=US&lc=eng&ckey=2639018&nid=-32495.1150124.02&id=2639018>
3. Backup the User Data and Factory Data on the unit:
 - a. The process will require a SD Card or USB Flash Drive formatted in FAT32 and less than 32 GB's in size.

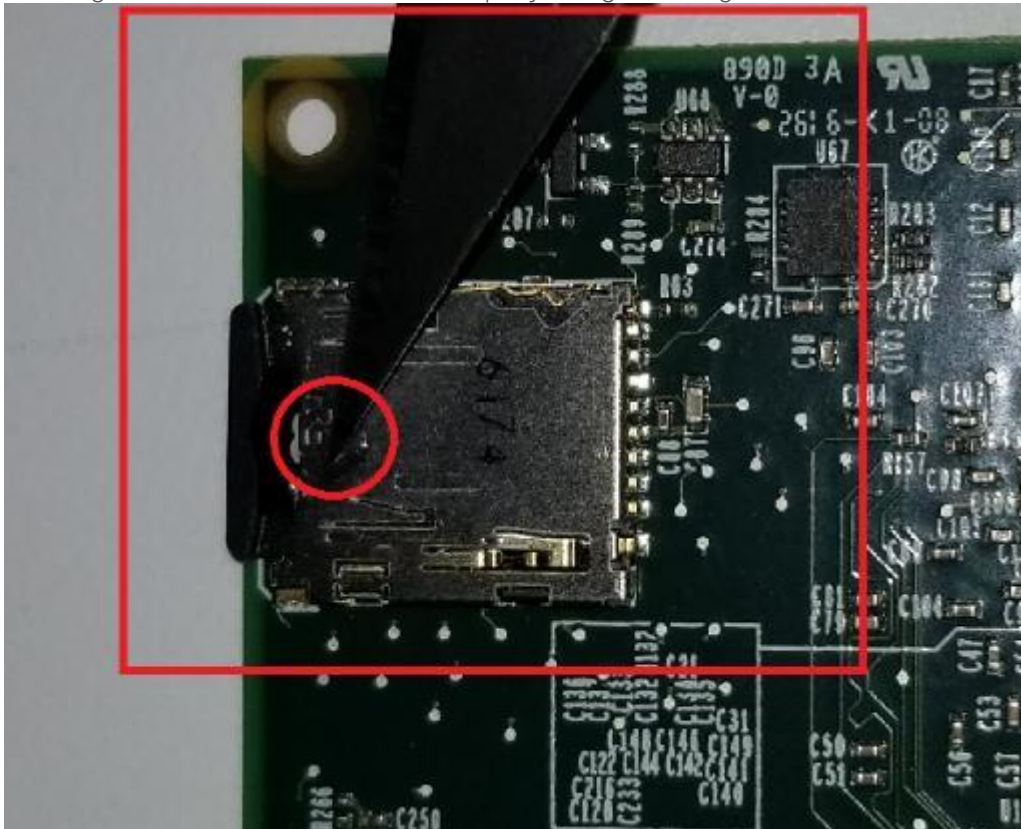
- b. FW version will need to A.10.17 or above, if an earlier version of the FW is loaded use the process above to upgrade the FW.
- c. Use the following steps to start the backup process:
 - i. Press the System Button (7)
 - ii. Press the Soft Key **System Configuration**
 - iii. Press the Soft Key **More**
 - iv. Press the Soft Key **Firmware Update**
 - v. Press the Soft Key **Start Installer**
 - vi. Press the Soft Key **Utility**
 - vii. Press the Soft Key **Backup Data**
 - viii. When prompted to include user data press the Soft Key **Yes**
 - ix. When prompted to include factory data press the Soft Key **Yes**
 - x. When prompted to select the backup file location press the Soft Key **(SD Card)** for SD cards and **(USB)** for USB Flash Drives.
 - xi. When the process is complete press the Soft Key **Close**
4. Save the SD card or USB flash drive in a safe location (i.e., you will need it to restore the data after re-assembling the unit).
5. Download the file FFoxbuild.exe from <http://69.12.214.222/fieldfox/FieldFoxServiceNote/>.
6. Use your laptop or PC to build the FFoxBuild bootable SD card:
 - a. Download the FFoxBuild.exe file.
 - b. Insert a SD card of 32 GB's or less Formatted in FAT32 into your PC or Laptop.
 - c. Run the FFoxBuild.exe file on your PC or Laptop.
 - d. Follow the onscreen prompts (you will need to run this as an Administrator on your PC or Laptop.
 - e. Once the SD card build process is complete, set the card aside it will be used later. Be careful to only use this SD card when instructed to, it will format and delete all data on the FieldFox including Factory Calibration information.
7. All of the preliminary processes are now completed. You can now move on to the SD card replacement.

SD Card Replacement Process:

1. Power down the FieldFox and remove the battery
2. Refer to the "Replacing the A6 SOM Board" section in the Keysight FieldFox Handheld Analyzers Service Guide (N9927-90003) located here <https://literature.cdn.keysight.com/litweb/pdf/N9927-90003.pdf>.
 - a. Be sure NOT to remove the System board. Only remove the screws on the system board shield to access the CPU board. Leave the system board attached to the RF Assembly.
3. Once you have removed the 4 screws holding down the CPU board use the following instructions to remove the SD card:
 - a. Place the CPU board on an ESD safe mat or work area.
 - b. Turn the CPU board so the SD Card Socket is facing up.

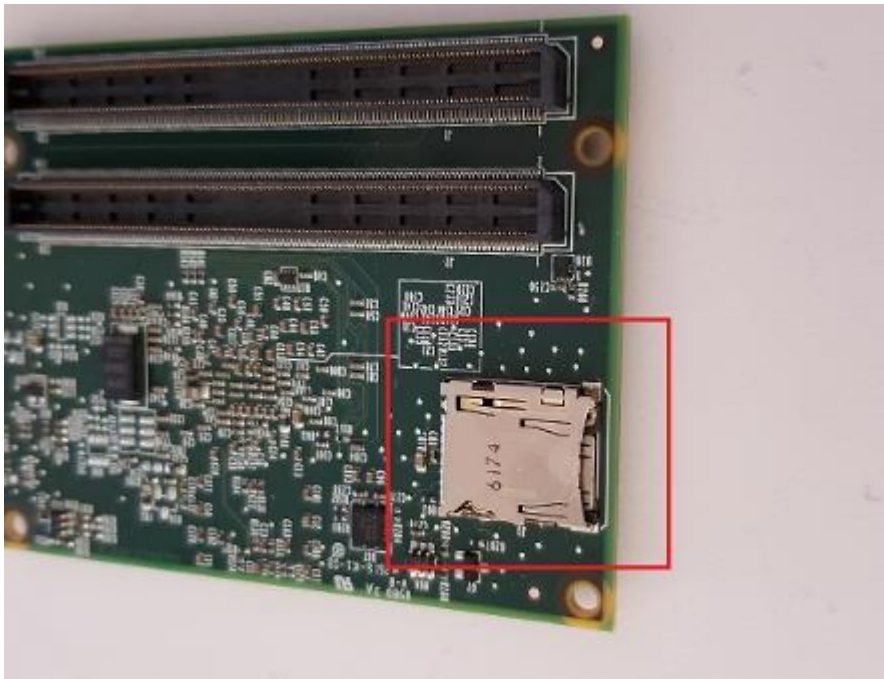


c. Using an Exacto Knife remove the Epoxy bridge holding the SD Card into the SD card socket.

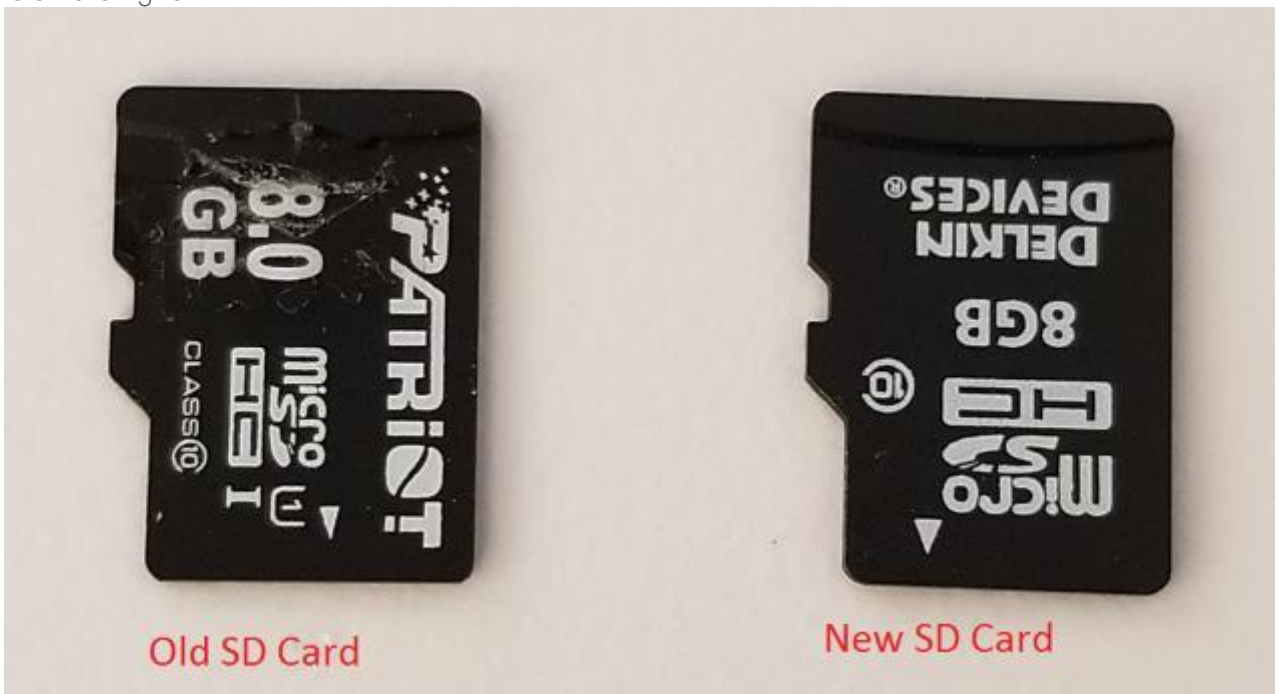


d. Use caution to not damage the socket or other parts of the CPU board.

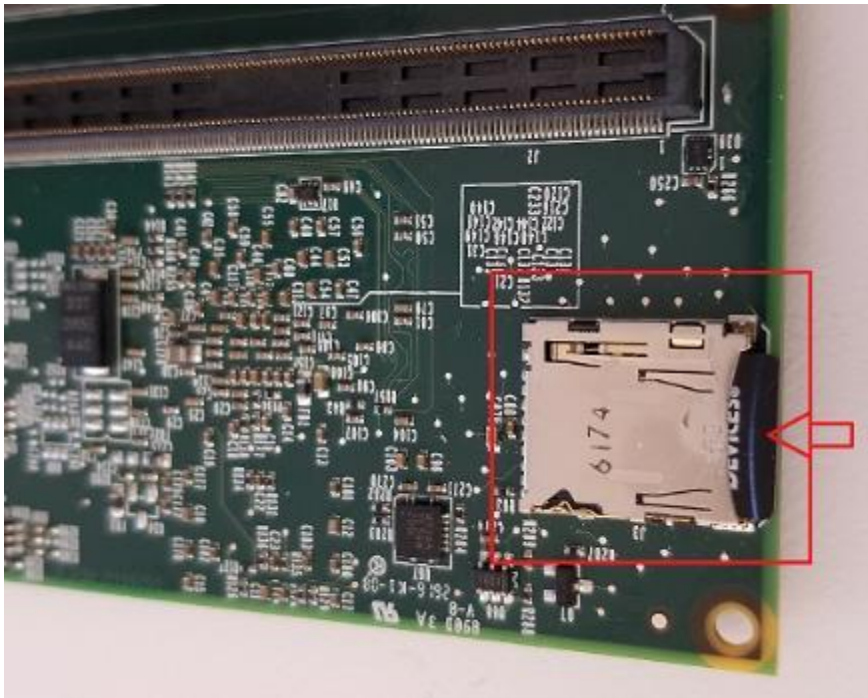
e. To remove the SD card, press the SD card slightly in towards the socket, it will click and then release to remove the SD card. Remove any extra epoxy that may be left.



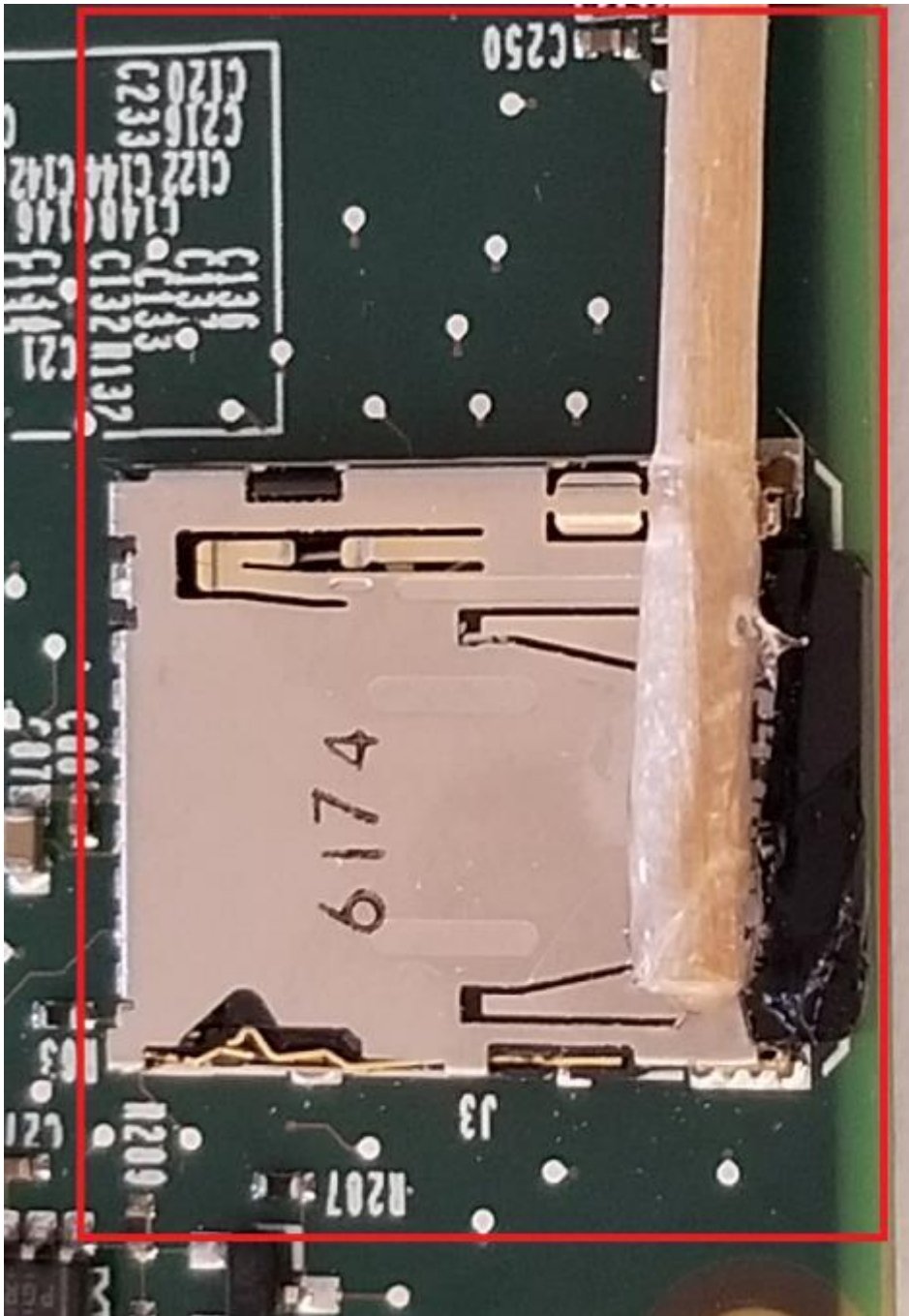
f. Here are the Old and New SD cards. The old SD card (Patriot) is on the left. The New (Delkin) is on the right.

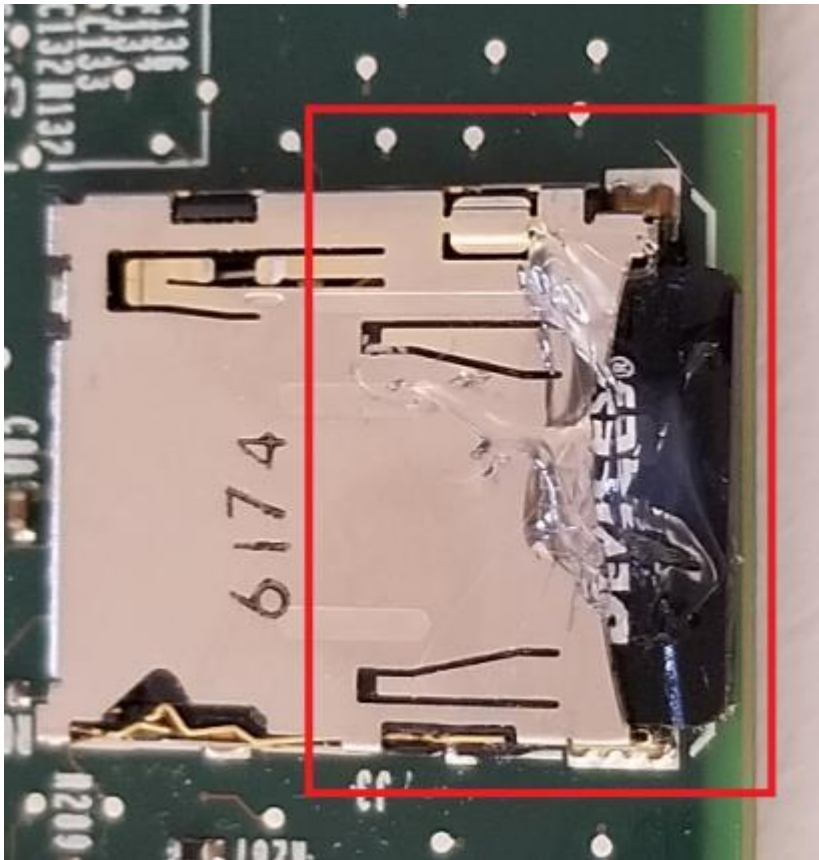


g. Insert the NEW SD card into the SD card socket and press it in until you hear a click, then release. The SD card is now locked in the socket.



h. It is now necessary to add a small amount of RTV (part number 0470-0450) to bridge the SD card to the SD card socket. Using a wooden Q-Tip place a small amount of RTV on both the SD card and the socket.





- i. Set the CPU aside for about 20 min to allow the RTV to harden. It will not become completely hard and may be a bit tacky to the touch. This is ok and it will completely dry in the unit.
4. Refer to page 145 in the Keysight FieldFox Handheld Analyzers Service Guide (N9927-90003) located [here http://literature.cdn.keysight.com/litweb/pdf/N9927-90003.pdf](http://literature.cdn.keysight.com/litweb/pdf/N9927-90003.pdf) for re-assembly.
5. Once re-assembled, it is time to load the OS and FW on the SD card.
 - a. Located the FFoxBuild SD card you made earlier to load the FW.
 - b. Insert the FFoxBuild SD card into the external SD card slot on the right side of the FieldFox. This is located in the middle door.
 - c. Plug in the Power Supply
 - d. Power up the FieldFox by using the power button in the bottom left corner of the unit.
 - e. Follow the on-screen prompts, this is mostly an automated process.
 - f. This process will take about 15 minutes to complete.
 - g. Once the process is complete and the FW is up and running the process is complete.
6. It is now time to recover the User Data and Factory Data on the unit.
 - a. Use the following steps to start the Recovery process.
 - i. Press the System Button (7)
 - ii. Press the Soft Key **System Configuration**
 - iii. Press the Soft Key **More**
 - iv. Press the Soft Key **Firmware Update**
 - v. Press the Soft Key **Start Installer**
 - vi. Press the Soft Key **Utility**

- vii. Press the Soft Key **Restore Data**
- viii. Use the arrow keys to select the Backup File. The Backup File will have the unit's Model and Serial number in the file name.
- ix. Press the Soft Key **Select** to select the file.
- x. When prompted to Restore USER DATA Press the Soft Key **Yes**.
- xi. When prompted to Restore the FACTORY DATA Press the Soft Key **Yes**.
- xii. When prompted ("ARE YOU SURE") Press the Soft Key **Yes**.
- xiii. Once the Restore process has completed. Press the Soft Key **Close**.
- xiv. Press the Soft Key Exit.
- xv. Reboot the FieldFox to insure the Factory Data has been restored.

7. The Service Note process is complete and the unit can be returned to the normal Service Center Process.

If you have any questions about this process please contact:
 Christopher Rich
Christopher_rich@keysight.com

Revision History:

Date	Service Note Revision	Author	Reason for Change
18 sept 2018	01	C. Rich/K. Stengl	As Published

Serial Numbers:

MY56072819	MY56072967	MY56077181	MY57271069	MY57271144	SG56077168
MY56072841	MY56072968	MY56077187	MY57271070	MY57271164	SG56077171
MY56072843	MY56072973	MY56077226	MY57271071	MY57271170	SG57277008
MY56072844	MY56072976	MY57271005	MY57271079	MY57271171	SG57277023
MY56072846	MY56072987	MY57271006	MY57271080	MY57271176	SG57277028
MY56072854	MY56072996	MY57271007	MY57271081	MY57271177	SG57277029
MY56072861	MY56072997	MY57271048	MY57271082	MY57271178	SG57277038
MY56072874	MY56073004	MY57271049	MY57271083	MY57271187	SG57277039
MY56072879	MY56073008	MY57271050	MY57271084	MY57271188	SG57277040
MY56072882	MY56073009	MY57271051	MY57271101	MY57271206	SG57277041
MY56072903	MY56073010	MY57271052	MY57271105	MY57271209	SG57277044
MY56072933	MY56073011	MY57271053	MY57271106	MY57271210	SG57277045
MY56072935	MY56073020	MY57271056	MY57271107	MY57271220	SG57277047
MY56072936	MY56073021	MY57271057	MY57271108	MY57271233	SG57277050
MY56072950	MY56073022	MY57271058	MY57271115	MY57271235	SG57277051
MY56072951	MY56073034	MY57271059	MY57271116	MY57271237	SG57277058
MY56072952	MY56073065	MY57271060	MY57271117	MY57271271	SG57277075
MY56072953	MY56073081	MY57271065	MY57271119	MY57271331	
MY56072955	MY56073082	MY57271066	MY57271135	MY57271349	
MY56072964	MY56073104	MY57271067	MY57271141	MY57271357	
MY56072965	MY56073105	MY57271068	MY57271143	MY57271562	