Fw21

Recommendations to cash register software developers for FFD 1.2 adaptation

General

This document's intended audience is POS SW developers using "Pilot" Electronic Cash Register (ECR) equipment.

The document assumes that current POS SW version is adapted to Format of Fiscal Documents (FFD) version 1.05, and works with ECR powered by firmware version 12.74, and interacts with ECR via Fw16.dll (PltFPSO16.dll) module.

To adapt to FFD version 1.2, use ECR powered by firmware version 14.x and ECR interaction via Fw21.dll (PltFPSO21.dll) module is necessary.

ECR powered by 14.x firmware and fw21.dll (PltFPSO21.dll) module only supports FFD 1.2. For the transition period driven by the need for gradual transition from FFD 1.05 to FFD 1.2 with big number of ECR within the same chain store, parallel support of both xxx21.dll and xxx16.dll modules by the same POS SW are recommended. POS SW shall have settings providing "connection" of either one or another module. For gradual ECR fleet update from 12.x to 14.x firmware version.

Changes in FFD 1.2 affecting POS SW functionality:

1. Preliminary (prior to fiscal document generation in ECR) verification of marking codes of some goods in accordance with a corresponded of decrees of the Government of the Russian Federation (shoes, clothes, perfumery and more).
2. Additional limitation on the number of accounting object (receipt's lines) in fiscal documents due to presence of goods with marking codes in it.
3. Change of "Correction sales\return receipt" fiscal document structure
4. New optional accounting object attributes: 'Industry' attributes, 'fractional quantity' attribute.
5. New optional attributes of fiscal document (receipt): 'Industry' attributes, 'operational' attributes

Usage for new attributes is determined by the Federal Tax Agency, and the procedures are not known at this moment.

Preliminary marking code verification

Prior to begin "Sales receipt (correction)" generations, POS SW must verify marking codes if marking goods are sold (returned). Adding marking goods into fiscal document without verification their codes is prohibited.

Marking code verification consists of 3 steps. The first two steps may require dialog between the cashier and the buyer.

1. Marking code verification with Fiscal Storage (FS) device (FS is internal part of ECR hardware);
2. Marking code verification at Marking Information System Operator (MISO);
3. Registering verification results at Fiscal Storage device.

Execution time of steps 1 and 3 is insignificant (no different from other "short" ECR operations). Time of step 2 execution is determined by "external circumstances" and can be significant. Cashier (POS SW) can, without waiting for MISO response, scan the next product including marking one. If marking product is scanned again, then, if previous marking code verification is not complete, MISO verification result is deemed "undefined" and can be approved as such in Fiscal Storage device.

To implement the possibility to "skip waiting for MISO response", POS SW shall call "Verify at MISO" ECR function in processor thread other than thread in which POS SW interacts with cashier (UI thread).

Marking code verification in FS

When product marking code is scanned from label, POS SW must determine code type and, if it matches marking code of specific format (GS1 Datamatrix), call "Start verification" ECR function providing the data:

- Content of Datamatrix code AS IS

ECR will return marking code verification result at FS.

In case of negative verification result, cashier must notify buyer of such result, and request buyer's consent to continue. If there is no consent, Verification is interrupted, the product cannot be included into fiscal document (receipt).

TC verification at MISO

In case of positive marking code verification result at the first step, or if there is buyer's consent to negative verification result, the code is verified at MISO. POS SW calls "Verification at MISO" ECR function providing the data:

- Planned product status (one out of 5 predefined values: out of/returned to circulation, measured/piece, unchanged)
- Marking code processing mode (constant at this moment)
- Goods quantity
- Goods measuring unit (value from predefined list)

ECR will return marking code verification result at MISO including:

- Request date and time
- MISO request processing code
- MISO result
- MISO response on product status
- Marking code type

POS SW uses the returned data to store for further analysis of possible incidents related to marking goods sales. If there is no connection to MISO, absence of returned data is possible, which corresponds to "undefined verification result".

In case of negative verification result (MISO result), or in case of undefined verification result, cashier must notify buyer of such result, and request buyer's consent to continue. If there is no consent, verification is interrupted, the product cannot be included into fiscal document.

Registering verification result at FS

Positive verification result or negative/undefined result (in case of buyer's consent) is registered by calling "Accept verification result" ECR function. If there is no buyer's consent in case of negative/undefined verification result, negative result is registered by calling "Cancel verification result" ECR function.

Limitation of receipt lines count

Additional limitation of accounting objects (receipt lines) count is driven by size of FS buffer storing verification results. One fiscal document (receipt) cannot have more than 128 marking goods. Number of NON-tagged goods is still limited by total FS capacity that shall not exceed 30 Kbytes.

Change of "Correction sales receipt" FD structure

"Correction sales receipt" is now only different from ordinary "sales receipt" by presence of "correction reason" attributes. That is, in relation to previous implementation, "goods part" is added that was not in it before.

New accounting object attributes

Industry attributes

To fill this attributes, POS SW provides the following information:

- Identifier of federal authority (that registered approval reason document). Value from specific list.
- date of reason document (in DD.MM.YYYY format)
- reason document number (up to 32 symbols)
- attribute value (up to 256 symbols)

Fractional quantity

Need to specify fractional quantity appears when piece marking goods are sold (returned) in case when package with several pieces of goods marked with single code. Practical example is sale of cigars provided in boxes several pieces each.

To fill this credential, POS SW provides the following information:

- goods quantity in package (nominator);
- goods quantity being sold from the package (numerator).

New FD attributes

Industry attribute

- See Accounting object industry credential

Operational attribute

To fill this credential, POS SW provides the following information:

- operation identifier;
- operation date;
- operation data (up to 64 symbols).