REA VERIFIER

QUALITY CONTROL DEVICES
FOR MATRIX- AND BARCODES

REA VeriCube

Crypto Code Verification for Russia

Crypto Code

The Russian legislation demands beginning with 2020 machine readable codification of pharmaceutical products. The law initially is targeting pharmaceutical products. The scope of the law incorporates also other products / product groups like tires, perfume, cameras, clothing, shoes and tobacco. This seems to be added step by step within the following years.

Base for this legislation is the Russian law No. 1556 (Dec. 14th, 2018). In addition the law changes No. 1118 (August 30th, 2019) and No. 311 (March 20th 2020) do apply.

Data carrier and data structure type

As optical readable data carrier the law defines to use the Data Matrix Code with the ECC200 error correction version (Standard GOST R ISO/IEC 16022:2008). Further the data structure identification character FNC1 is to be used at the first position within the code. This means that the GS1 data structure using application identifiers is mandatory.

Data elements

The law defines four specific data elements to be used:

- Item number
- Serial number
- Crypto key
- Crypto code

The Item number is a GTIN (Global Trade Item Number) defined by the system of the service organization GS1. It can be a GTIN within the numbering area of GS1 Russia. If another numbering area is used then these GTIN needs to be communicated to the Russian authorities and GS1 Russia. The application identifier (AI) is 01.

The serial number within the GS1 System can be 1 up to 20 characters long. The Russian law demands a fixed length of 13 characters. The AI is 21.

The Crypto key which is identified by AI 91 shall have a fixed length of 4 characters. GS1 would allow 1 to 90 characters.

The Crypto Code identified by AI 92 shall have a fixed length of 44 characters while GS1 would allow 1 to 90 characters.

Additional Application identifiers are disallowed. Before publication of the law change No. 1118 in addition lot number and expiry date was allowed.

The code print quality shall be Grade C (satisfying) according to GOST R ISO/IEC 15415:2012 or better.

Example (with dummy data)

GTIN (01):	04607143599994
СЕРИЯ (10):	111111
ГОДЕН ДО (17):	23.10.2025
СЕР.N. (21):	9377699108361

(human readable text differs from code content)

A speciality is that the order of data within the code must be maintained as defined by law. This is different to the GS1 Specification which allows a random order.

Behind data fields with a variable length a separator is mandatory to allow software to detect the true end of a data field. The Russian legislation mentions for this since March 20th 2020 the ASCII character GS (ASCII value 29) and the Data Matrix character FNC1. Before only GS was allowed.

The code size (module size) is not defined by law. Some Russian sources define the range from 0.25 up to 0.615 mm for that. Also the measuring conditions according ISO/IEC 15415 are not defined by law. The standard demands that this must be reported in a quality result. For this reason the GS1 Specifications define 660 nm red light, four sides and 80 % synthetic aperture is to be used.

REA VeriCube
Matrix- and barcode verification device

The REA VeriCube is a state-of-the-art matrix and barcode verification device which can be used across all industry sectors. Whether lying, standing or from top to bottom, virtually any test sample can be measured contact-free in the optimum measuring position.

The measurement of optical codes in compliance with defined angles, distances and lighting allows accurate and reproducible measurement results and quality evaluations.

The measuring system is based on a high-precision optical module with a CMOS camera chip. The system is designed to avoid ambient light influences during the measurement process.

The REA VeriCube incorporates since December 2019 a full verification of the Russian crypto code with all features as described. This is symbology, data field order, data field length, correct separator character, no additional data field and desired module size range. As character set the REA VERIFIER solution allows the character set 82 as defined by the GS1 General Specifications.

Verification of crypto codes on product packaging

REA VeriCube for crypto-, matrix- and barcodes

Features

- Contact-free measurements by a CMOS camera
- Easy exchangeable camera modules to adapt to different code sizes
- Selectable illumination (optional red or white light, diffused red light, UV light, IR light)
- Capable of measuring DPM codes (direct part marking)
- Designed to operate in 3 positions to meet different measuring requirements: sidewise, in upright position and upside down
- Darkened measuring chamber to avoid ambient light influences
- Verification according to ISO/IEC 15415 for printed matrix codes
- Verification according to ISO/IEC TR 29158 (formerly AIM DPM guideline 2006) for direct part marking matrix codes (optional)
- Verification according to ISO/IEC 15416 or ANSI X3.182 for barcodes
- Verification in compliance with GS1 specifications
- Verification of GS1 data structures
- Verification of optional parameters for optimizing the print process
- Multilingual user interface and reports
- For ease of use, settings can be stored in customized profiles for fast evaluation setting selection
- ISO/IEC 15418 / ANS MH10.8.2 data structure analysis
- Specific code selection to meet pharmaceutical and other industry demands
- Power supply via network cable (Power over Ethernet)
- Easy removable and exchangeable transparent cover plate
- Network-compatible PC evaluation software Trans-Win32 for Windows

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V.05/2020 – Subject to change