

Technical Description

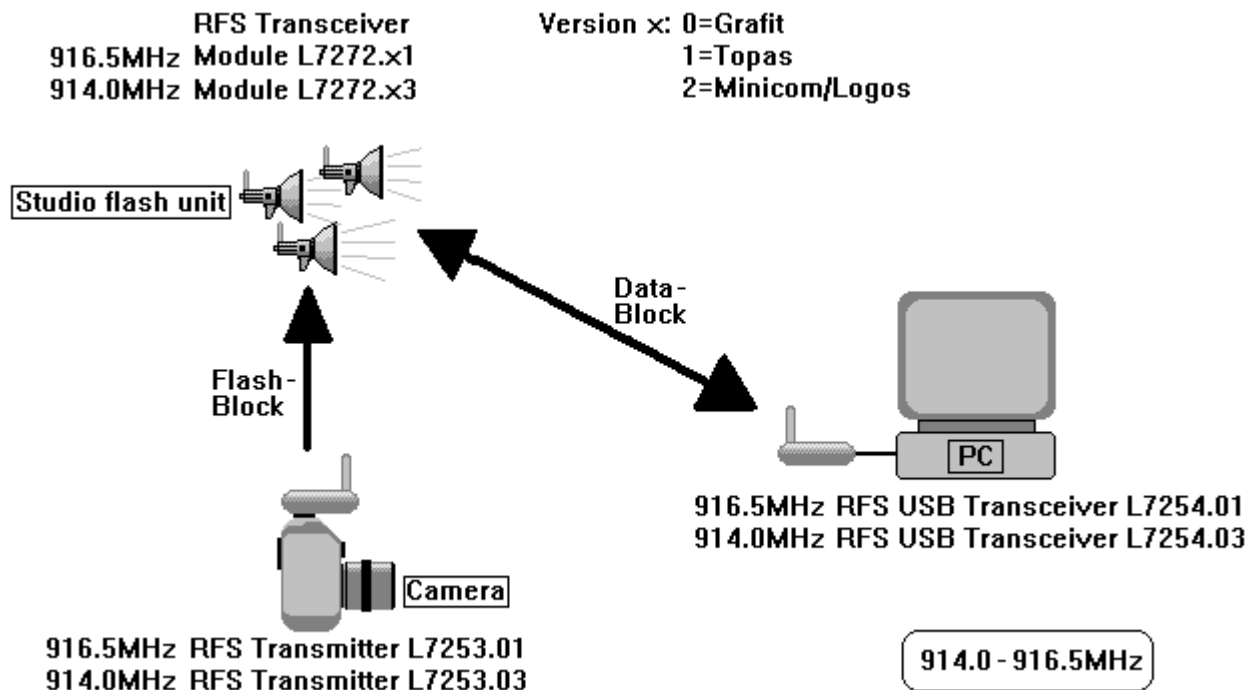
Radio System for Studio Flash Equipment

916.5MHz: RFS USB Transceiver L7254.01

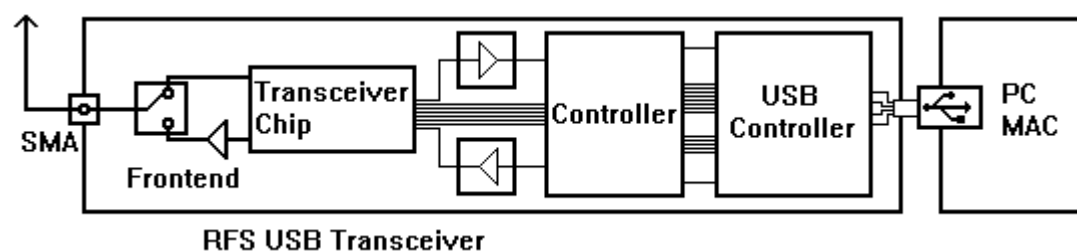
914.0MHz: RFS USB Transceiver L7254.03

Bron Elektronik AG, 4123 Allschwil, Switzerland

The application concerns the data transmission from an operator console (MAC/PC) to the flash units of a Photo Studio, in both directions, as well as the transmission of a flash trigger signal from the camera to all of the flash units.



The RFS USB transceiver is plugged in the PC/MAC. The power supply is supplied from USB Hup.



RFS USB Transceiver specifications (typical):

- Output power: 12dBm
- Frequency: 914.0-916.5MHz
- Modulation: ASK
- Data rate / Data format: 38.4 kBaud → 76.8kBit in Manchester
- Transmission time flash triggering: 0.625ms – 0.833ms
- Transmission time data-block: 1.9ms – 10.4ms
- Size: 80mm x 55mm x 30mm
- Operating voltage / current: RF 3V / 2mA
- Operating voltage / current: USB: 5V / 25mA
- Operating current USB Suspend: 100µA
- RF input impedance 50 ohms
- Antenna: Helical SMA
- USB specification: USB 2.0
- LED: Communication indicator
- Switches: „test“ transmit flash block
„+“ and „-“ transmit data block
- Sync connector: transmit flash block

Transmission format

Data format: MSB first

Flash-block:

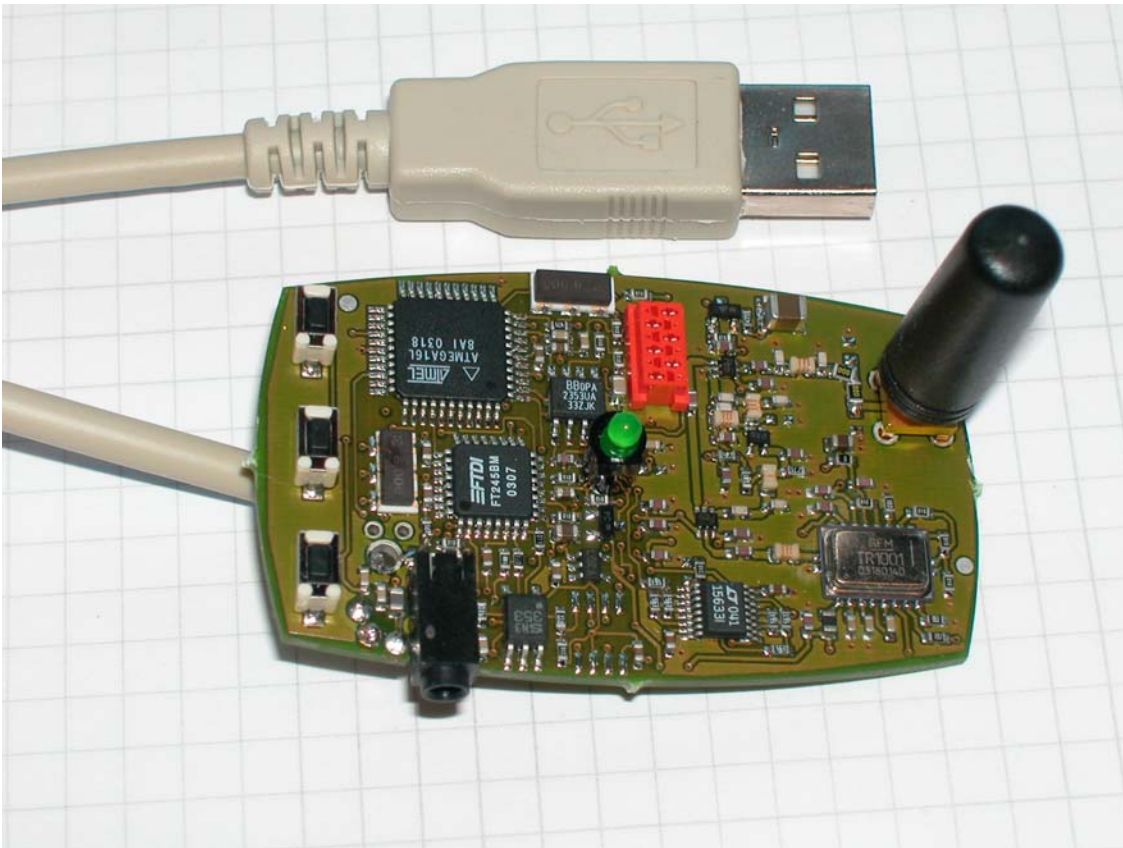
- **Preamble** 11100110 01100110 optimisation of DC-balance
- **Start symbol „Flash“:** 01110001 11010110 Manchester modified
- **ID (Studio no.)** 01010101 01010110 → ID=1 (Manchester)

Data-block:

- **Preamble:** 11100110 01100110 optimisation of DC-balance
- **Start symbol „Data“:** 01110001 11011001 Manchester modified
- **Block number:** ... each new block receives a new block number, but not a repetition.
- **Byte count:** ...
- **Start info:** 01011010 01011001
- **Studio ID:** 01010101 01010110 → ID=1 (Manchester)
- **Unit ID:** ...
- **n data** max. 50 Byte
- **Check sum:** ...
- **End Symbol „Data“:** 01110110 00100110 Manchester modified

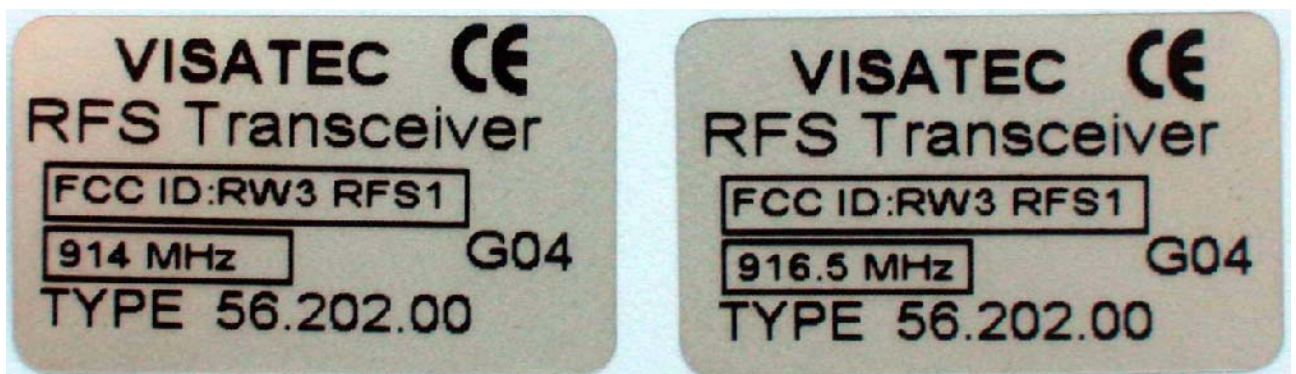
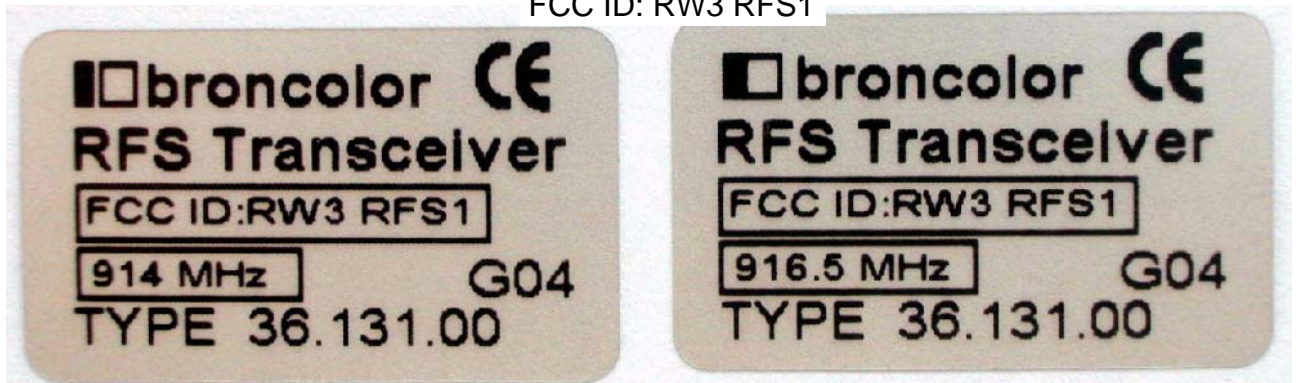
A dual directional data transmission only takes place when the setting on the flash units or the operator console (MAC/PC) is adjusted. This reduces the probability of a collision with a flash-block. A correctly transmitted data-block is confirmed with an ACK. An unconfirmed data-block is repeated.

A flash-block is not repeated.





FCC ID: RW3 RFS1





Full 1/4 models in straight and right angle



Helical stub models with various connectors

Quarterwave antennas provide performance for products with the minimum of size. Full length quarterwave design provide the maximum efficiency, while loaded helical stub antennas provide minimum size.

The full length models use a flexible whip, whereas the helical antenna use a hard radome. Overall performance of quarterwave antennas does depend on the ground plane provided by the radio system or the mounting configuration. Quarterwave antennas are broadband compared to other designs and can effectively be used in most applications. For OEM applications, performance can often be maximized with a one time factory adjustment.

Connector styles available are TNC, SMA, MMCX or a thread ferrule assembly. The thread ferrule provides the most economical solution, but does require a special mechanical configuration for mounting and feeding the RF signal. Special connectors are also available, please consult factory.

Models with "-925 designators also overlap the ISM 902-928 band and are now in lieu of the "-915" models.

For 800 & 900 MHz Applications

- Models for Cellular, CDPD, ISM, GSM, Mobitex and Skytel applications
- Quarterwave styles in flexible whip, helical stubs with hard radome
- Sleek profile, with a variety of connector styles
- Customization available for OEM applications

Model Numbers - Straight Antennas

Model	Frequency	Style	Connector
PSTG0-900MM	824-894MHz	Full 1/4	10-32
PSTG0-900MX	824-894MHz	Helical	4mm x .5
PSTG0-900HS	824-894MHz	Helical	SMA
PSTG0-900SE	824-894MHz	Full 1/4	SMA
PSTG0-900TE	824-894MHz	Full 1/4	TNC
PSTG0-925MM	870-960MHz	Full 1/4	10-32
PSTG0-925MX	870-960MHz	Helical	4mm x .5
PSTG0-925HS	870-960MHz	Helical	SMA
PSTG0-925SE	870-960MHz	Full 1/4	SMA
PSTG0-925TE	870-960MHz	Full 1/4	TNC

Model Numbers - Right Angle Antennas

Model	Frequency	Style	Connector
MDM-900OP	824-894MHz	Full 1/4	MMCX
MDM-925OP	870-960MHz	Full 1/4	MMCX

Frequency Guide

-900 Models	For US Cellular (Analog & Digital), CDPD
-925 Models	For EU Cellular, ISM, Mobitex and Skytel

Special configurations available upon request. Please consult factory for details/availability.

Specifications

Frequency:	See above
Gain:	0dBi max for 1/4 wave
Bandwidth @ 2:1 SWR:	See frequency range above
Impedance:	50 ohm nominal
Maximum Power:	10 watts
Connector:	See above, special connectors also available, please consult factory for details.

Whip Length:

1/4 wave	95mm (3.75") maximum, varies slightly based on frequency.
1/4 wave, helical	32mm (1.25") maximum

Whip Material

1/4 wave	Rubber jacket/flexible cable
1/4 wave, helical	ABS radome, helical radiator