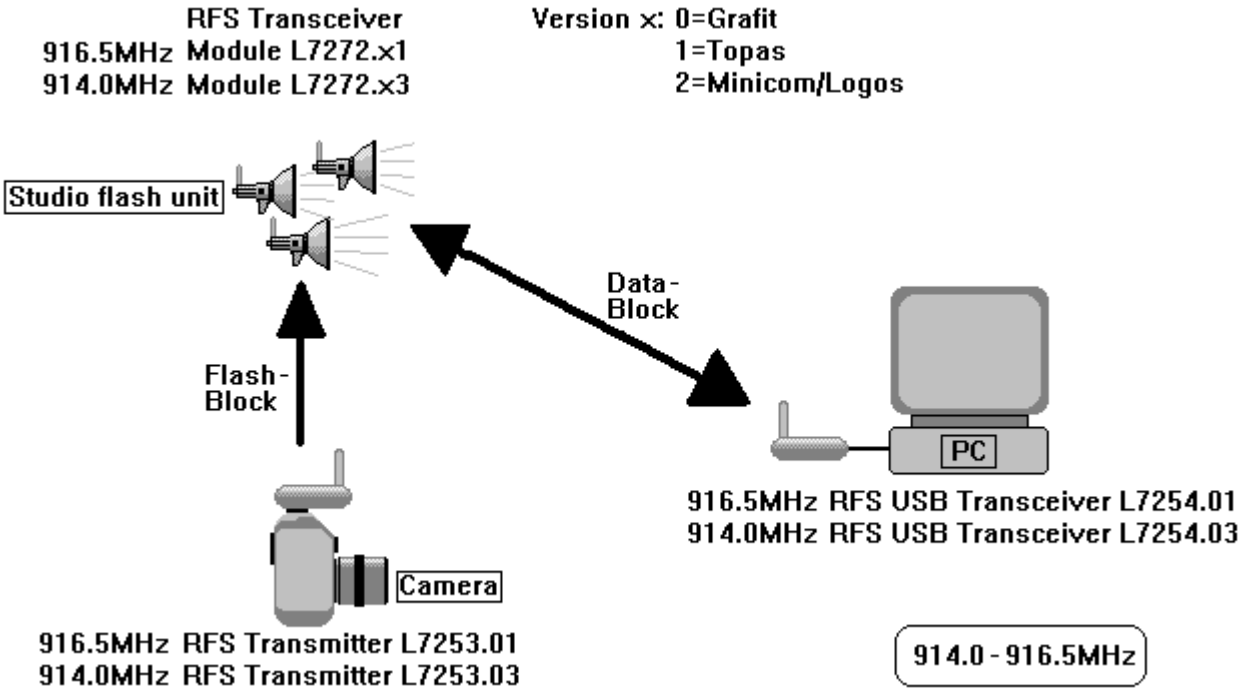
Technical Description

Radio System for Studio Flash Equipment

914.0MHz: RFS Transceiver Module L7272.03/ L7272.13/ L7272.23
916.5MHz: RFS Transceiver Module L7272.01/ L7272.11/ L7272.21

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.



---------- Studio flash unit ----------

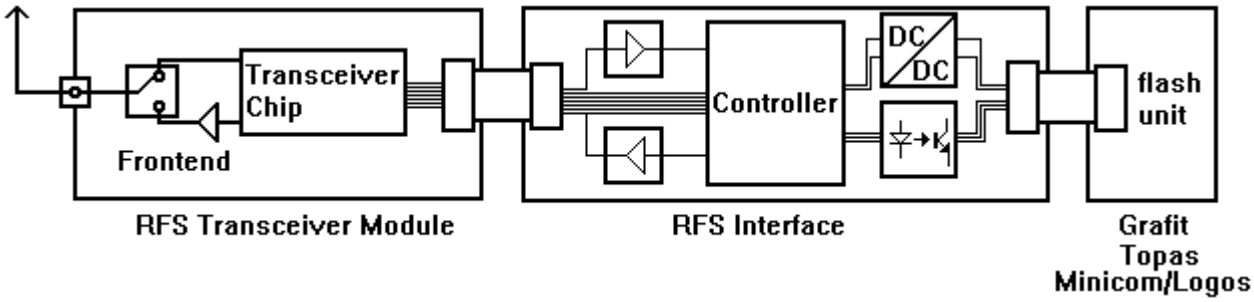
The radio equipment in the studio flash unit consists of a RFS transceiver module (three versions) and a unit specific RFS interface

916.5MHz

Flash unit „Grafit“: **RFS Transceiver Module L7272.01** and RFS Interface L 7273.00
Flash unit „Topas“: **RFS Transceiver Module L7272.11** and RFS Interface L 7275.00
Flash unit „Minicom/Logos“: **RFS Transceiver Module L7272.21** and RFS Interface L 7274.00

914.0MHz

Flash unit „Grafit“: **RFS Transceiver Module L7272.03** and RFS Interface L 7273.00
Flash unit „Topas“: **RFS Transceiver Module L7272.13** and RFS Interface L 7275.00
Flash unit „Minicom/Logos“: **RFS Transceiver Module L7272.23** and RFS Interface L 7274.00



RFS Transceiver Module specifications (typical):

- Output power: 12dBm
- Frequency: 914.0 – 916.5MHz
- Modulation: ASK
- RF input impedance 50 ohms
- 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: 35mm x 52mm x 12mm
- Operating voltage: 3V
- Operating current: 2mA receive mode
  10µA power down mode

Interface connector:

Pin	Description
1	3V_PA: power amplifier
2	RXDATA: 76.8kBit Manchester (baud rate= 38.4kBaud)
3	Ground
4	TXMOD: 76.8kBit Manchester (baud rate= 38.4kBaud)
5	PA_IO: power amplifier control, 0=receive, 1=transmit
6	**CNTRL1:**
7	**CNTRL0:**
8	3V: power input

CNTRL1:	CNTRL0:	control
0	0	power down mode
0	1	OOK transmit mode
1	0	ASK transmit mode
1	1	receive mode

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:

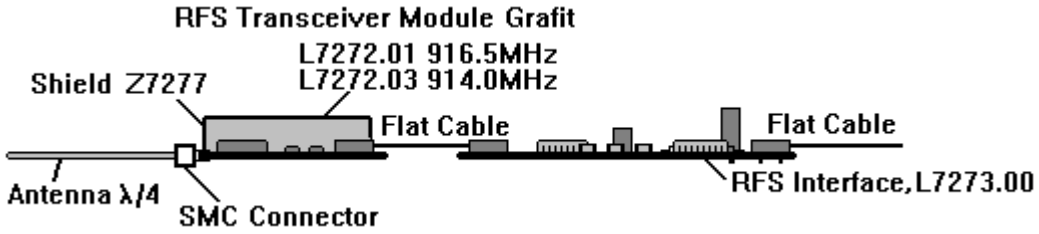
- **Preamble:** **11100110 01100110** optimisation of DC-balance
- **Start symbol „Data“:** **01110001 11011001** Manchester modified
- **Block number:** **...** each new block receives a new block number, but not a repetition.
- **Byte count:** **...**
- **Start info:** **01011010 01011001**
- **Studio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

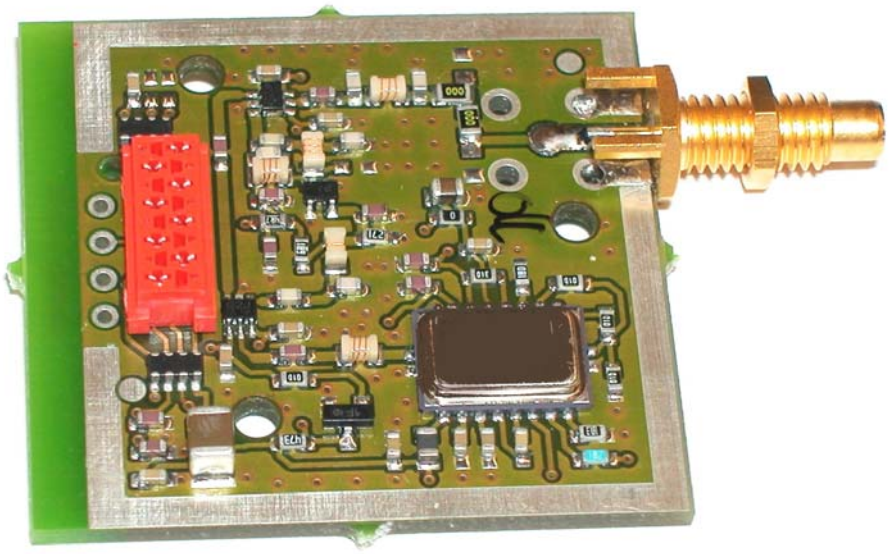
A dual directional data transmission only takes place when the setting on the flash units or the operator console (MAC/PC) is adjusted. This reduces the probability of a collision with a flash-block. A correctly transmitted data-block is confirmed with an ACK. An unconfirmed data-block is repeated.

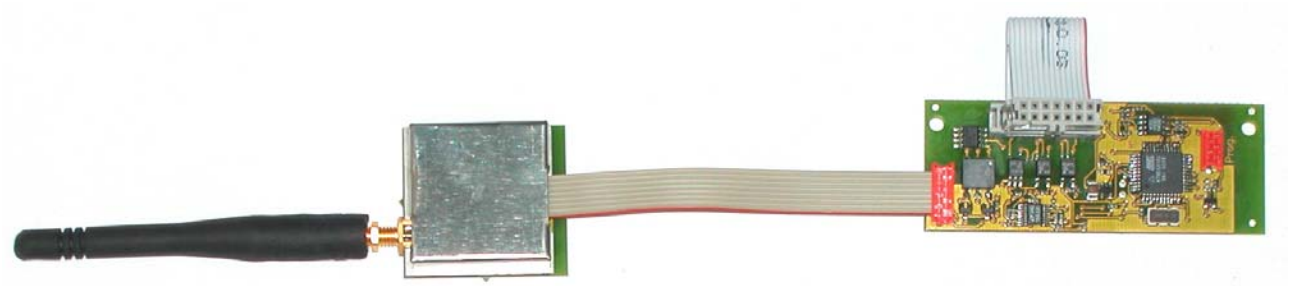
A flash-block is not repeated.

Flash unit Grafit: RFS Transceiver Module L7272.01/ L7272.03 and RFS Interface L7273.00

The RFS transceiver module and the RFS interface are connected by a flat cable. A straight SMC connector is soldered, on the front end, onto the transceiver module and a ¼-wave antenna is mounted. The RFS transceiver module has a soldered-on shield.







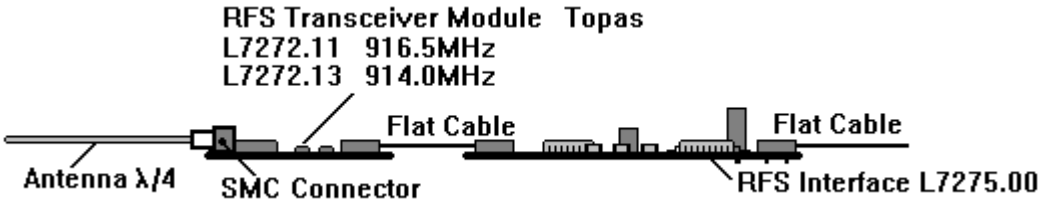
Flash unit Grafit

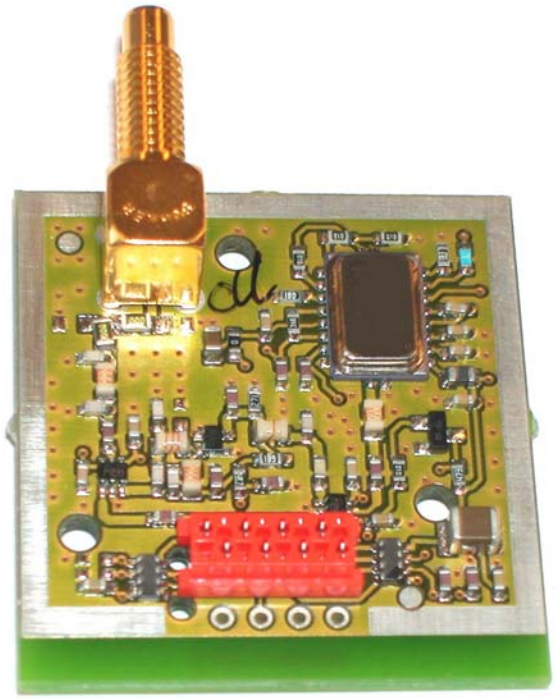

broncolor
Bron Elektronik AG
CH-4123 Allschwil
made in Switzerland
GRAFIT A2 RFS
FCC ID: RW3 RFS2
914 MHz
230V~/50Hz 3500VA
120V~/60Hz 1800VA
TYPE 31.169.10-16
No. G040000
N3528
broncolor
Bron Elektronik AG
CH-4123 Allschwil
made in Switzerland
GRAFIT A2 RFS
FCC ID: RW3 RFS2
916.5 MHz
120V~/60Hz 1800VA
230V~/50Hz 3500VA
TYPE 31.169.03-08
No. G040000
N3528
broncolor
Bron Elektronik AG
CH-4123 Allschwil
made in Switzerland
GRAFIT A4 RFS
FCC ID: RW3 RFS2
914 MHz
230V~/50Hz 3500VA
120V~/60Hz 1800VA
TYPE 31.179.10-16
No. G040000
N3528
broncolor
Bron Elektronik AG
CH-4123 Allschwil
made in Switzerland
GRAFIT A4 RFS
FCC ID: RW3 RFS2
916.5 MHz
230V~/50Hz 3500VA
120V~/60Hz 1800VA
TYPE 31.179.10-16
No. G040000
N3528

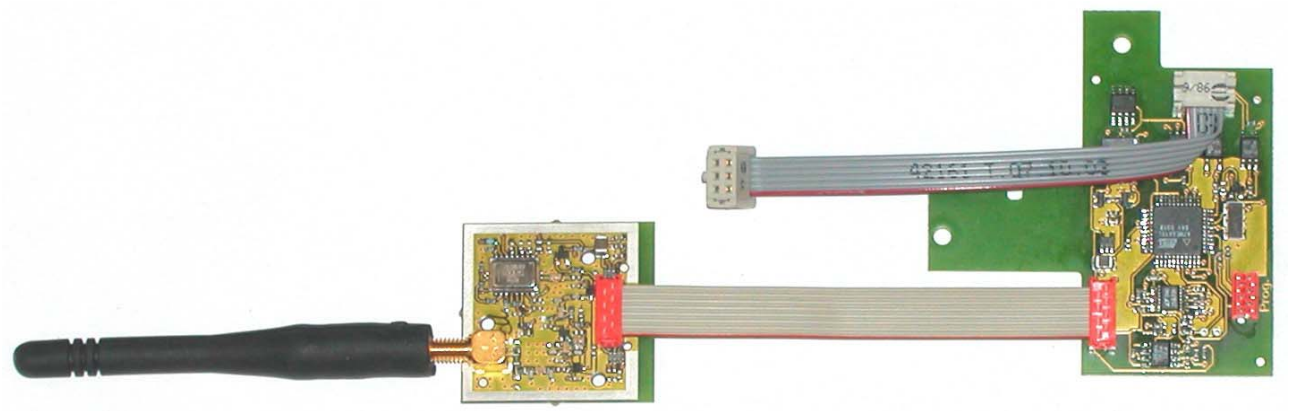

broncolor grafit A4
86
35.4
47.3
48

Flash unit Topas: RFS Transceiver Module L7272.11/ L7272.13 and RFS Interface L7275.00

The RFS transceiver module and the RFS interface are connected by a flat cable. An angle SMC connector is soldered onto the RFS transceiver module and a ¼-wave antenna is mounted.





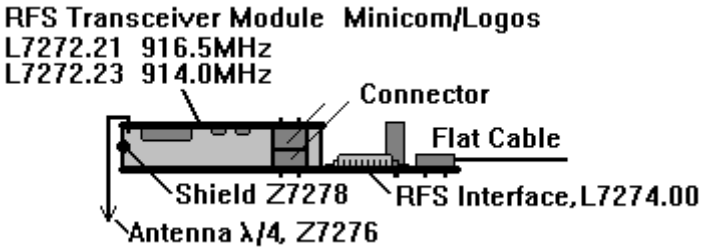


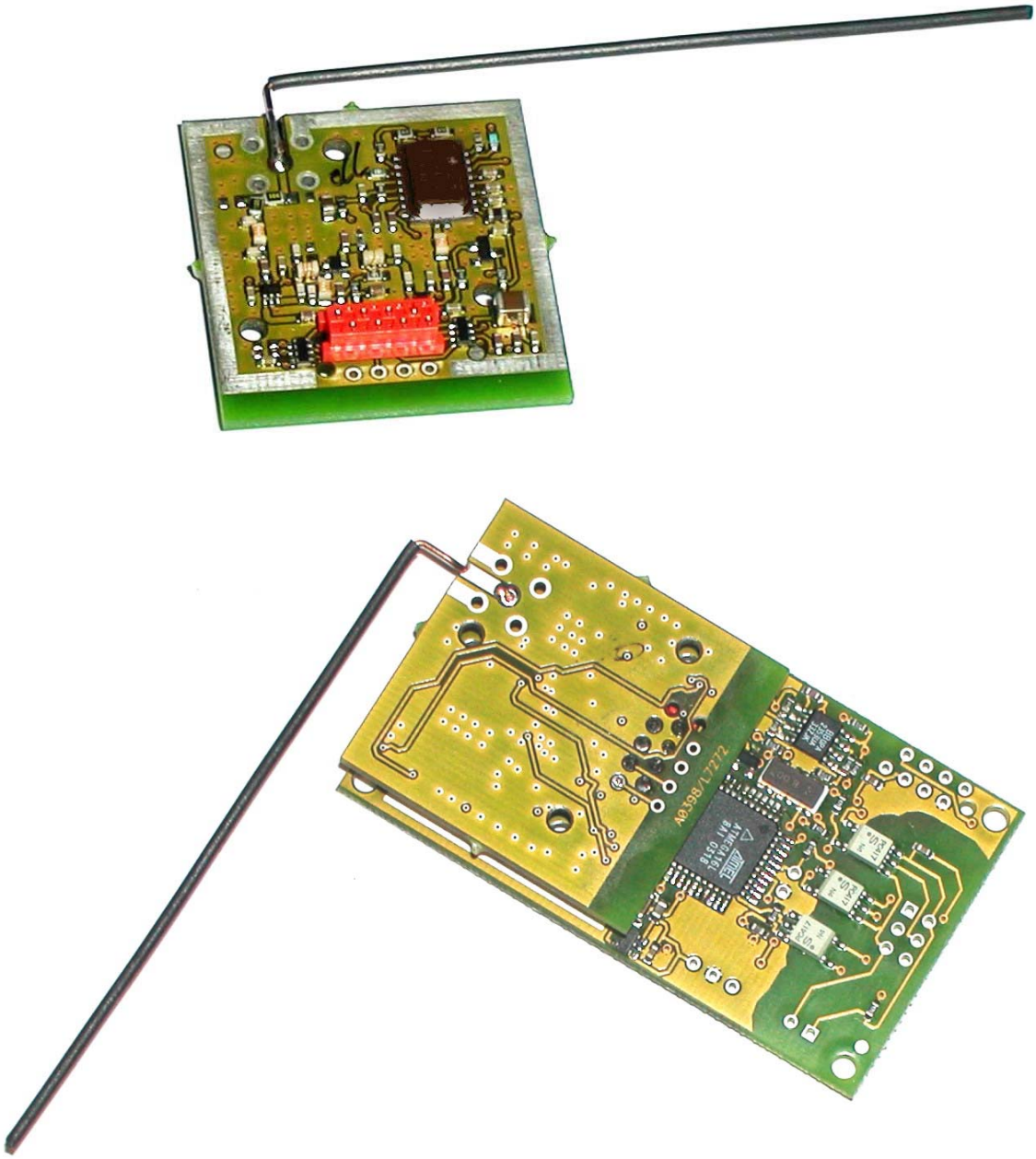
Flash unit Topas

Flash unit Topas

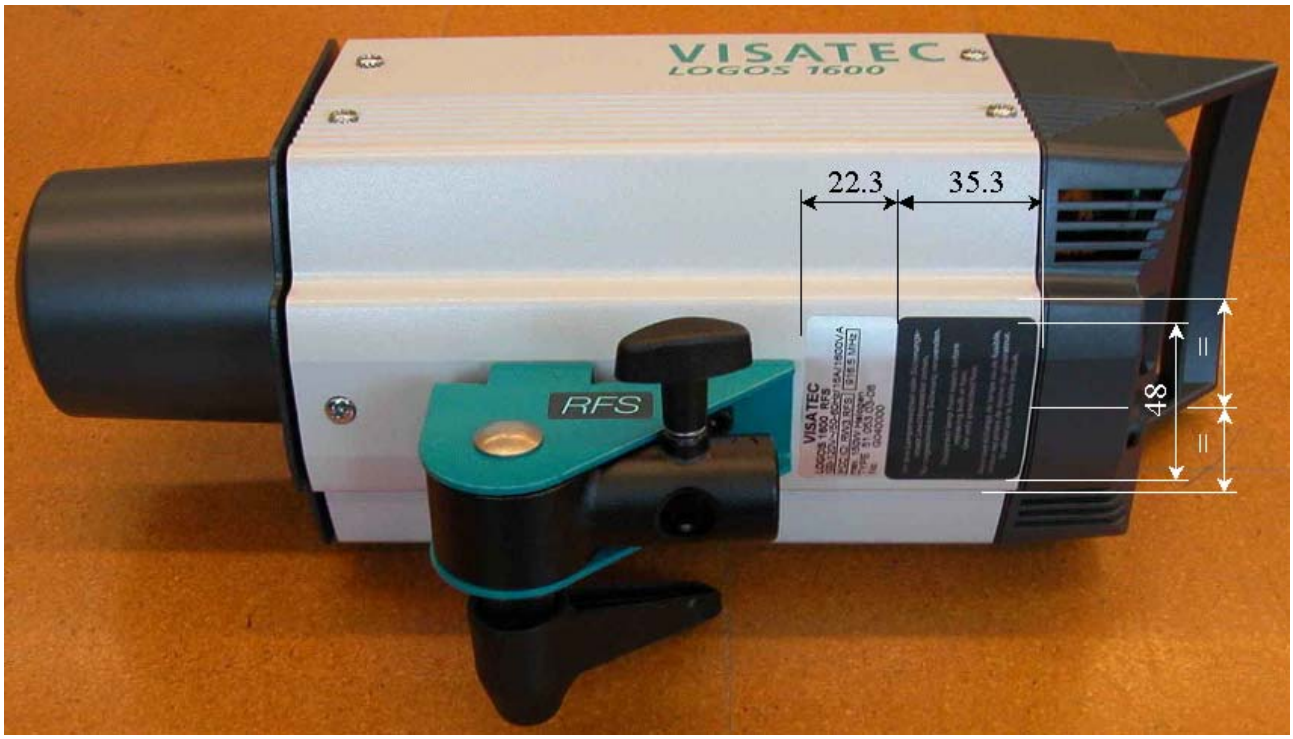
Flash unit Minicom/Logos: RFS Transceiver Module L7272.21/ L7272.21 and RFS Interface L7274.00

The RFS transceiver module is attached directly onto the RFS interface. The rod-type antenna Z7276.00 is soldered into the RFS transceiver module. In the RFS interface, there are no components assembled in the section around the RFS transceiver module. In this section, the Cu-surface, together with a metal frame, serve as a shield.





Flash unit Minicom



Flash unit Logos

SMC-Antenna No. 40462.00

PRODUCT CODE :- SMCUHFF915MHz .

Manufacturer : R.W. Badland Ltd. England
Tuned frequency :-915 Mhz .
Gain [unity] ¼ wave 0 db
Radiator::- flexible plastic coated
Base :- moulded in situ
Length : - 80 mm
Diameter :- Base :- 9.5mm
Centre :- 4.1 mm
Tip :- 7 mm
VWSR :- better than 1.5 : 1
Band width @ 2 : 1 VWSR 5%