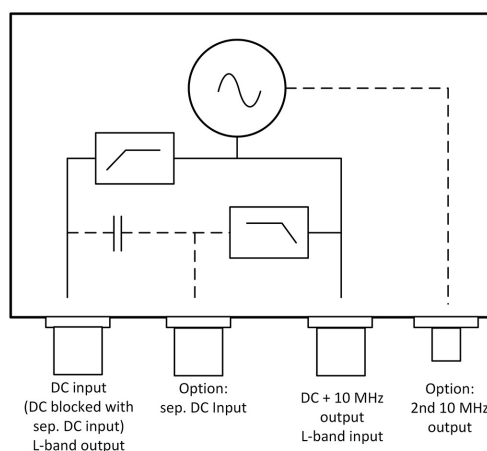


## 10 MHz Reference Oscillator with Diplexer

10 MHz Reference oscillator with very Low Phase Noise

The 10 MHz Reference Oscillator is used for control of the local oscillator in LNBs or BUCs when a very high LO stability and very low phase noise is needed. The SMW 10 MHz Ref. oscillator gives a LO stability of  $\pm 20$  ppb =  $\pm 20 \times 10^{-9}$  (ppb=parts per billion).

Very Low power consumption OCXO.



### TECHNICAL SPECIFICATIONS

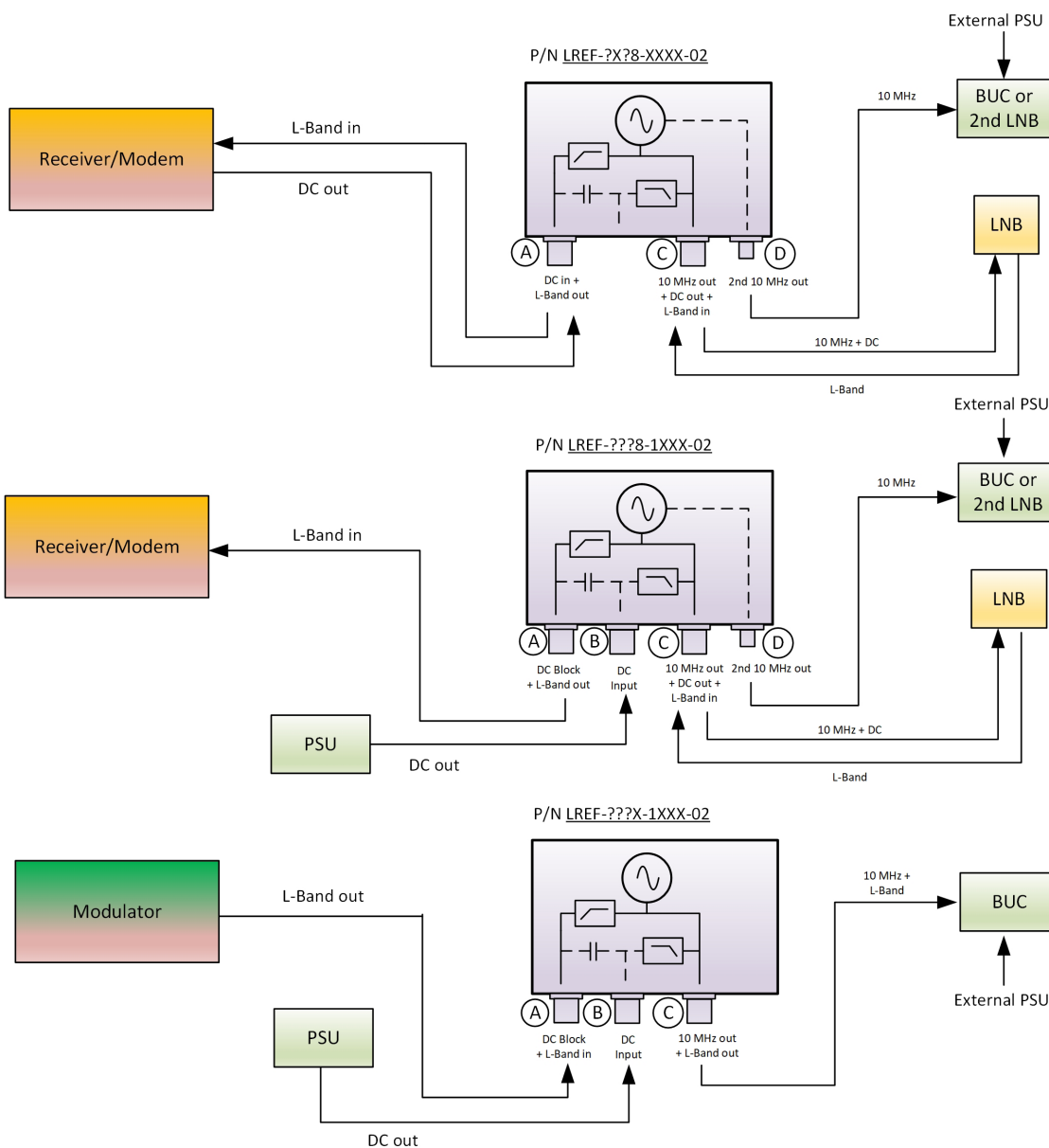
| MODEL:                            | LREF - 10 MHz Reference Oscillator   |
|-----------------------------------|--|
| L-Band Frequency Range            | 950 - 2150 MHz   |
| DC Input                          | +10 to +28 V   |
| Maximum Load                      | 800 mA @ DC output   |
| IF Insertion Loss                 | 1 dB @ 950-2150 MHz max.   |
| Return Loss 10 MHz Input          | > 20 dB  |
| Return Loss 10 MHz Output         | > 20 dB  |
| Return Loss L-band Input / Output | N- and SMA-connector: min. 10 dB, typ. 15 dB, with F-connector min. 8 dB, typ. 13 dB   |
| 10 MHz Harmonic Suppression       | > 70 dBc (L-Band output), > 40 dBc (separate 10 MHz output)  |
| Temperature Range                 | -40 to +80°C   |
| Ingress Protection Code           | IP 67  |
| Connectors                        | F-type 75Ω / N-type 50Ω / SMA-type 50Ω   |
| 22 kHz Bypass (standard)          | Through receiver or external source, n/a with DC Block IN or OUT   |
| Output Frequency                  | 10 MHz, Sinewave   |
| Output Level                      | +7 dBm $\pm 1$ dB  |
| Frequency Stability               | $\pm 20$ ppb @ 0 to +50°C, $\pm 50$ ppb @ -40 to +85°C   |
| Calibration Tolerance             | $\pm 10$ ppb @ 25°C  |
| Aging                             | $\pm 500$ ppb max. @ 10 years  |
| Phase Noise                       | -90 dBc @ 1 Hz, -120 dBc @ 10 Hz, -142 dBc @ 100 Hz, -155 dBc @ 1 kHz, -163 dBc @ 10 kHz (max. values)   |
| Current Consumption               | 100 mA warm up 1 min., 35 mA steady state typ.   |
| Dimensions                        | 96 x 28 x 89 mm ( N connectors ) ( for drawing, see <a href="http://www.smw.se">www.smw.se</a> )   |
| Weight                            | 208 g (F- & SMA-connectors), 250 g (N-connectors)  |
| Options                           | 2nd 10 MHz output SMA-connector ( +6 dBm output level / output ), Separate DC input with connector or pigtail (DC cable) and DC disabled on Receiver port, Factory calibration |

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Above parameters are generic product family values. For part number specific min./max. values, please consult us.

Specifications are subject to change without notice. Products from Swedish Microwave AB are made for commercial use.

# 10 MHz ref. oscillator examples



**Part number designation for the 10 MHz reference oscillator**

| Model | Connector A | Sep. DC input B | Connector C | 2nd 10 MHz out                    | DC Block A | DC Block C  | Future use | Future use | Version |
|-------|-------------|-----------------|-------------|-----------------------------------|------------|-------------|------------|------------|---------|
| LREF  | ?           | ?               | ?           | ?                                 | ?          | ?           | X          | X          | 02      |
| 0     | F           | X No            | 0 F         | X No 2nd 10 MHz out. +7 dBm on C  | X          | No DC block |            |            |         |
| 5     | N           | 0 F             | 5 N         |                                   |            |             |            |            |         |
| 8     | SMA         | 5 N             | 8 SMA       | 8 2nd 10 MHz out. +6 dBm on C & D |            |             |            |            |         |
|       |             | 8 SMA           |             |                                   |            |             |            |            |         |
|       |             | 9 Pigtail       |             |                                   |            |             |            |            |         |
|       |             |                 |             |                                   | 1          | DC Block    |            |            |         |

**Example:** L-Band out + DC block (N), L-Band in + DC & 10 MHz out (N), Separate DC input (N), 2<sup>nd</sup> 10 MHz out = LREF-5558-1XXX-02

Rev. G

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