

Block diagram and operational description / Avalanche -Beacon transmitter-receiver system in accordance to EN300718

General Information

The Pieps DSP is a radio location system used for searching and / or finding victims, for the purpose of direct rescue (SAR). Such devices either continuously transmit or receive, at the control of the user, a puls radio signal. It is a new developed Avalanche Beacon with optical search aids and new digital technology (digital signal processor).

Transmitter

The high frequency transmitter signal „457000Hz“ is generated by a 3,656 MHz crystal oszillator (1) and a prescaler f8 (2), the divider is coupled to a power amplifier(3), to provide the transmit power. On/off signal time are generated by the MSP processor, this processor also controls the display (4) and the necessary operating elements.

Receiver

A antenna array includes 3 orthogonal ferrit antennas (5), in order to provide a clear signal for the DSP processer, we need a special amplifier group. Accordingly, receiving ferrit antennas (5) is sequentially coupled to preamplifier (6) band pass filter (7) amplifier (8) mixer (9) IF amplifier (10) and A/D converter (11). The IF mixer frequency 440670kHz is generated by the DSP prozessor. Signal processor (12) includes a special filter, signal detection, gain control software, it make measurements for orientation and distance. All measurement results from the DSP processor are sends to the MSP Prozessor (13). The MSP Prozessor concentrat and displays all necessary digital information.