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User Manual

SALCOM 15-85-0450

UHF TRANSCEIVER

Designed for;

ABBEY SYSTEMS LTD.

15-85-0000 PCB Issues 12/13-11/15A
Date of Issue: December, 2015

15-85 Functional Description

The 15-85-0450 is a basic analogue transceiver module designed specifically for Abbey Systems Limited, Wellington, New Zealand. Abbey Systems use this product to integrate with their Data Communication Controller for remote control applications using audio in-band signalling modems operating in the 1200-1800 Hz frequency range. It replaces previous equipment that has become unavailable or obsolete. The generic IPN 15-85-0000 or simply 15-85 is the product identifier. The last four digits in the IPN may indicate the frequency band that the transceiver operates within, ie., 0450 = 450Mhz or an associated product. The radio is capable of being set for 25/12.5 or 6.25Khz bandwidths and a transmitter output power range from 50mW to 5Watts. It is also capable of transmitting and receiving standard CTCSS tones.

15-85-0000 SPECIFICATIONS;

Frequency range; 450-470Mhz in one Hz steps.

Nominal supply volts; 13.0volts +/-0.5volts

Bandwidth; programmable; 12.5Khz/25Khz/6.25Khz

CTCSS; Programmable receiver and transmitter, standard frequencies available. 4 digit entry.

Receiver;

Squelch (programmable), and sinad; typically -116dbm +/- 2db, for >12db sinad @ 1Khz

Distortion: Test conditions 25Khz channel spacing.. Channel deviation = 3Khz, Modulation freq = 1Khz.

AF output level -6dBm +/- 1 db

-110dBm, 4.5%, AF out, +/- 1db

-100dBm, 2.2%, AF out, +/- 1db

-80dBm, 0.7%, AF out, +/- 0.2db

Distortion Test conditions 12.5Khz channel spacing. Input -80dBm. Channel deviation = 1.5Khz. Modulation freq = 1Khz.

(H.P. de-emphasis OFF) = <3%

Transmitter Power output levels (programmable);

Low power range: +/- 25%

50mW, (40mW-60mW)

100mW, (80mW-120mW)

250mW, (200mW-300mW)

500mW, (400mW-600mW)

1Watt, (800mW-1.2W)

High power range +/-10%

2W, (1.8W-2.2W)

4W, (3.6W-4.4W)

5W, (4.5W-5.5W)

Transmitter modulation distortion;

H.P. de-emphasis OFF = <1.5%

H.P. de-emphasis ON = < 0.6%

Spurious emissions; -70dbC

Mechanical construction;

The 15-85-0000 transceiver case is constructed of light weight 1.2mm aluminium. The top lid is detachable and secured with seven M3 screws to the main body. The main body section has a cutout to allow mounting of the BNC r.f. connector and on the underside is an aperture that allows external access to connector P1 for power, ptt, and other functions. The circuit board is of a similar shape to the case and is internally mounted on four standoffs – the mounting screws of which can be seen on the underside photograph where the 10 pin connector is visible.



SALCOM 15-85 UHF Transceiver; ABBEY SYSTEMS LTD

Top view, BNC rf power connector & case style

Overall dimensions 125mm x75mm x 13mm (4.9" x 2.9" x 0.5")



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Underside view, shows 10 pin connector P1 access point for external control.

Compliance

The module is limited to OEM installation in mobile or fixed applications ONLY.

A separate approval is required for all other operating configurations, including portable configuration with respect to FCC 47 CFR 2.1093 and different antenna configurations. It is the responsibility of the OEM to gain type approval for the host product.

The equipment integrator is responsible for ensuring that the end-user has no manual instructions to remove or install the module.

The 15-85-0450 does not require any further shielding and therefore can be fitted into any host product. The end-users of the product must be provided with transmitter/antenna installation requirements and operating conditions to satisfy RF exposure compliance by the integrator. The RF output is via a 50Ω BNC connector.

The labelling of the finished product must include either “Contains Transmitter Module FCC ID: O8715855” or “Contains FCC ID: O8715855”.

FCC RF Exposure Requirements

The external $\frac{1}{4}$ wave dipole antenna used with this module must be installed to provide a separation distance of at least 0.47 m from all persons, and must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi transmitter product procedures