

TRANSRECEIVER MODULE (TRM)

1. Nomenclature/ Part No/ GIG Number:

- (a) Nomenclature- Trans Receive Module (TRM)
- (b) Part No- AWACS (MSA)/ 1093U012-005
- (c) GIG- 1342981

2. Year of Procurement/ Source:

- (a) Year of Procurement- 2014-15
- (b) Source- M/s ELTA, Israel

3. Fleet/ Sub System/Wpn System: AWACS

4. Technical Applicability/ Broad Purpose: TRM used in AWACS provides the required amplification to the RF signals received from the system for transmission and provides the required filtering and amplification to the RF signals received from the antenna.

5. Technical Specifications (attach as separate sheets): Attached as annexure-6

6. Publication Details (attach as separate sheets): I-Level Maintenance Manual 12578 (can't be attached as confidential document)

7. Photograph of Equipment:



8. **Brief Description:** TRMused in AWACS provides the required amplification to the RF signals received from the system for transmission and provides the required filtering and amplification to the RF signals received from the antenna.
9. **Classification of Equipment-** LRU/Testers/ Ground Equipment/ Role Equipment (Electrical, Electronics, Mechanical, Software based etc.): LRU
10. **Previous Repair History:** Presently dependent on foreign OEM M/s ELTA, Israel
11. **Criticality (Priority I, II or III):** Priority I
12. **Requirement:**Indigenisation
13. **Quantity Required (One time/ Annual):**25 per year
14. **Sample Availability:** Available
15. **Scale/ Deficiency: Scale**
16. **If deficient - How deficiency is being plugged?** N/A
17. **SPOC details item/ fleet wise:** SPE (ISC) 13 BRD, AF
18. **Draft QTS with major testing requirement (If already designed):** Yet to be prepared
19. **Any Other Relevant Information:** Nil

Annexure-1

TECHNICAL SPECIFICATIONS: TRANSMIT RECEIVE MODULE (TRM) OF AWACS

1. Part No. : 1093U012-005
2. Item Nomenclature : TRANSMIT RECEIVE MODULE (TRM)
3. **Transmit Channel Characteristics**
 - Frequency : 1280 to 1400 MHz
 - Peak power output : 330W MIN
 - Antenna output VSWR after circulator : 1:1.6 MAX -12.8 dB
 - Input VSWR (Tx) : 1:2 MAX - 9.5 dB
 - Pulse width : 10% duty cycle 1-80 μ sec MAX
 - Weighting output power : 4 dB MIN (from 180 Watt)
 - Harmonic Rejection : 2nd & 3rd 27 dBc MIN
 - DC supply voltage : Constant +51V, Variable +18V to +50V
 - Power control : 7 bits TTL
4. **The receive channel characteristics**
 - Frequency : 1280 to 1400 MHz
 - Gain (@ 0° phase shifter) : 11.5 to 16.3 dB
 - Isolation in/out : DCA at 0 attenuation - 35dB MIN
DCA at 31.5 dB attenuation - 58 dB MIN
 - DCA dynamic range : 0 - 31.5 dB typ
 - DCA Resolution : 0.5 dB (refer to chapter 2)
 - DCA Control : 6 bits TTL
 - Phase Shifter range : 0 - 354° typ
 - Phase Shifter resolution (LSB) : 5.6° Typ
 - Input peak power to TRM : 45-46 dBm
 - RX channel power handling : 400 W Peak, 10% duty cycle
 - Power consumption : +5V/470 ma ripple 20 mv p-p MAX
-5V/20 ma ripple 20 mv p-p MAX
+7V/150 ma ripple 20 mv p-p MAX
-30V/20 ma ripple 20 mv p-p MAX
+51V/3.1 A @ 330 Watt ripple 20 mv p-p MAX
5. **Environmental and Physical Characteristics**
 - Weight : 800 grams
 - Length : 190mm
 - Width : 60 mm
 - Height : 60.1 mm
 - Temperature Operating : -15°C to +60°C
 - Full Performance : 0°C to +40°C
 - Non-Operating : -55°C to +71°C