SECURITY SUMMARY & SPECIAL HANDLING REQUIREMENTS

The title of this application is : AN/APQ-170(V)2 RADAR

The overall classification of this application is : **UNCLASSIFIED**

Refer to your Security Manual for further guidance.

The Application Level Special Handling is : A

Approved for public release; distribution is unlimited (DoD Directive 5230.24)

DOWNGRADING INSTRUCTIONS

Special Handling Instruction : A

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Selected Frequencies
(U) 9180.0 MHz - (U) 9540.0 MHz (U) 16440 MHz - (U) 16560 MHz

System Name (Nomenclature) : (U) AN/APQ-170(V)2 Radar
Coord.ID/JF12 Num. : (U)/(U) J/F 12/9861
Stage : (U) 3 - Developmental
Agency : (U) AF - Department of the Air Force
NTIA Certified : (U) No
Overall Security : Unclassified

Date/Time Last Mod. : 8/4/2010 3:23:29 PM (GMT)
System Description : (U) The AN/APQ-170 radar is a multimode, redundant, dual-band, and forward looking radar that integrates terrain following and terrain-avoidance features, as well as ground mapping, weather detection, and avoidance, and beacon Interrogation modes of operation. Specifically designed for use on the Air Force MC-130H Combat Talon II airplane.

Target Date(s)
System Approval : (U) 9/1/2010
System Activation : (U) 10/1/2010
System Termination : (U) 1/1/2040

NSEP Use : (U) No
ITU Waiver : (U) No

Control Numbers
SPS- 17546/1

References
Type : Related J12
Ref. To Cert.: No
Ref. Is Class: No
Ref. J12 # : 5956/2

Source Documents
• (U) SPS - 17546/1 AN/APQ-170(V)2 Radar Certification Application 8/4/2010

Geographic Areas for Stage 3
City, State/Country : (U) Eglin Air Force Base, (U) FL
Location Type : (U) Polygon of 201 points

City, State/Country : (U) Edwards Air Force Base, (U) CA
Location Type : (U) Polygon of 38 points

City, State/Country : (U) Albuquerque, (U) New Mexico
Location Type : (U) Single Point
Lat/Lon : (U) 350702N1063731W

Geographic Areas for Stage 4
City, State/Country : (U) US&P
Location Type : (U) Polygon of 12868 points

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Number Of Units : (U) 2
Estimated Initial Cost of the System : (U) $1000000
Information Transfer Requirement
(U) None - Radar

System Essentiality
(U) Ground mapping, Weather detection, and avoidance.

Replacement Information
(U) AN/APQ-170(V)1 Radar

Stations
Station Name : (U) MC-130H, Combat Talon II Radar
Transmitters
(U) APQ-170(V)2, X-Band TF,TA,TF/TA
(U) APQ-170(V)2, X-Band PGM Mode
(U) APQ-170(V)2, X-Band WTHR Mode
(U) APQ-170(V)2, X-Band Beacon
(U) APQ-170(V)2, Ku-Band TF, TA Mode
(U) APQ-170(V)2, Ku-Band PGM, GM, WTHR
(U) APQ-170(V)2, Ku-Band Beacon Mode

Receivers
(U) APQ-170(V)2, X-Band Receiver
(U) APQ-170(V)2, Ku-Band Receiver

Antennas
(U) AS-3755, APQ-170(V), X-Band Antenna
(U) AS-3756, APQ-170(V) Ku-Band Antenna

Station Name : (U) Ground Targets - Generic

Links - Selected Modes

Link
Transmitting Station | **Receiving Station**
(U) MC-130H, Combat Talon II Radar | (U) Ground Targets

Radio Service : Radiodetermination
Station Class : MR
Equipment Combination
Transmitter : (U) APQ-170(V)2, X-Band Beacon
Tx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Selected Modes

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Frequency	Em. Des	Power	Notes
(U) 9375.0 MHz	(U) 2M50P0N	Peak (U) 1000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band TF, TA Mode
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 69M0M9N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band TF, TA Mode
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, Ku-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 69M0M9N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band PGM, GM, WTHR
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 69M0M9N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band PGM, GM, WTHR
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, Ku-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 69M0M9N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band Beacon Mode
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 2M50P0N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, Ku-Band Beacon Mode
Tx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna
Receiver : (U) APQ-170(V)2, Ku-Band Receiver
Rx Antenna : (U) AS-3756, APQ-170(V) Ku-Band Antenna

Selected Modes

Frequency	Em. Des	Power	Notes
(U) 16440 MHz - (U) 16560 MHz	(U) 2M50P0N	Peak (U) 2000 W	PRI

Equipment Combination

Transmitter : (U) APQ-170(V)2, X-Band TF,TA,TF/TA

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Tx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Selected Modes

Frequency	Em. Des	Power	Notes
(U) 9180.0 MHz - (U) 9540.0 MHz	(U) 68M0M9N	Peak (U) 1000 W	PRI

Equipment Combination
Transmitter : (U) APQ-170(V)2, X-Band PGM Mode
Tx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Selected Modes

Frequency	Em. Des	Power	Notes
(U) 9180.0 MHz - (U) 9540.0 MHz	(U) 68M0M9N	Peak (U) 1000 W	PRI

Equipment Combination
Transmitter : (U) APQ-170(V)2, X-Band WTHR Mode
Tx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Receiver : (U) APQ-170(V)2, X-Band Receiver
Rx Antenna : (U) AS-3755, APQ-170(V), X-Band Antenna
Selected Modes

Frequency	Em. Des	Power	Notes
(U) 9180.0 MHz - (U) 9540.0 MHz	(U) 68M0M9N	Peak (U) 1000 W	PRI

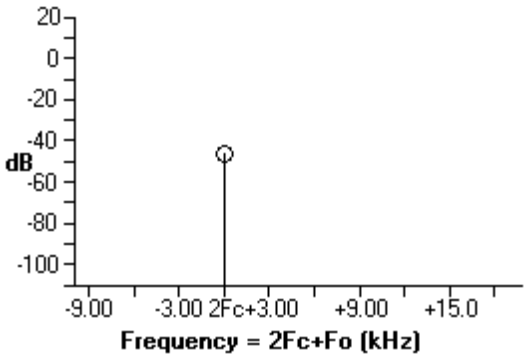
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

TRANSMITTER APQ-170(V)2, Ku-Band Beacon Mode

Nomenclature	:	(U) APQ-170(V)2, Ku-Band Beacon Mode
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1488, PN: 889410
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 6:55:10 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 1 - 2nd Harmonic Curve (U)

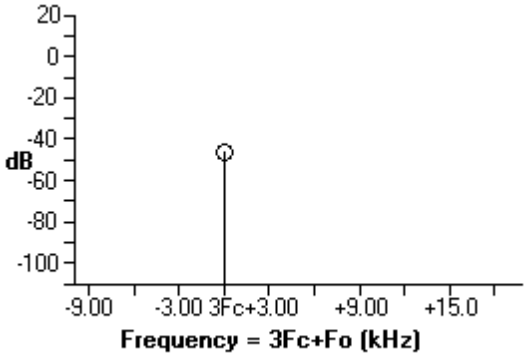
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 2 - 3rd Harmonic Curve (U)

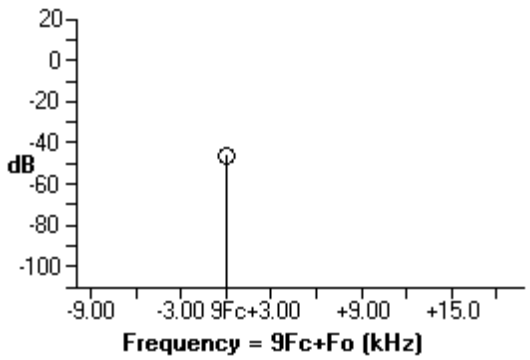
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 3 - Other Harmonic Curve (U)

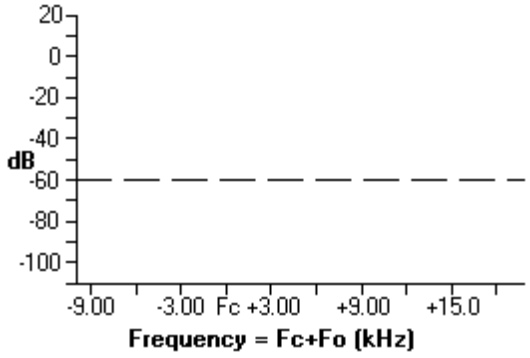
Atten. -46.0 dB **Offset (Fo)** 0.00000 kHz



(UNCLASSIFIED)

Figure 4 - Spurious Emission Curve (U)

Maximum Spurious Emission
Atten.
-60.0 dB



(UNCLASSIFIED)

Frequencies

Tuned Frequency : (U) 16440 MHz - 16560 MHz
Tuning Increment : (U) 1.0000 kHz
 # Freq Req. : (U) 1
Min. Separation : (U) 0.0010000 MHz
Em. Designator : (U) 2M50P0N
Neccessary BW : (U) 2500.0 kHz

Modulation - 2M50P0N

Occupied Bandwidth : (U) 3000.0 kHz
Measured/Calculated : (U) Calculated
Radar/Communications : (U) Radar
Radar Type : (U) FM Pulse Radar
Pulse Repetition Rate : (U) 1800 pps
Pulse Rise Time : (U) 0.000100 ms
Pulse Fall Time : (U) 0.000100 ms
Pulse Width : (U) 0.00235 ms

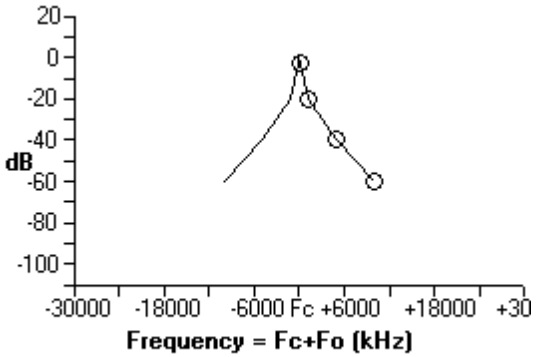
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Pulse Duty Cycle : (U) 0.4230 %
Pulse Comp. Ratio : (U) 1.00
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 1
Spread Spectrum : No
Pulse Width : (U) 0.00235

Figure 5 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	250.00 kHz
-20.0 dB	1250.0 kHz
-40.0 dB	5000.0 kHz
-60.0 dB	10000 kHz



(UNCLASSIFIED)

Powers

Power Type : Peak Envelope
Upper Limit : (U) 2000 W

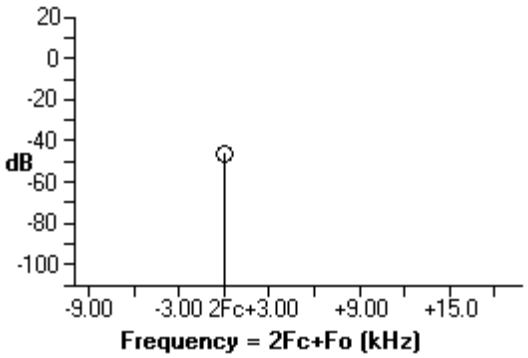
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

TRANSMITTER APQ-170(V)2, Ku-Band PGM, GM, WTHR

Nomenclature	:	(U) APQ-170(V)2, Ku-Band PGM, GM, WTHR
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1488, PN: 889410
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 6:56:16 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 6 - 2nd Harmonic Curve (U)

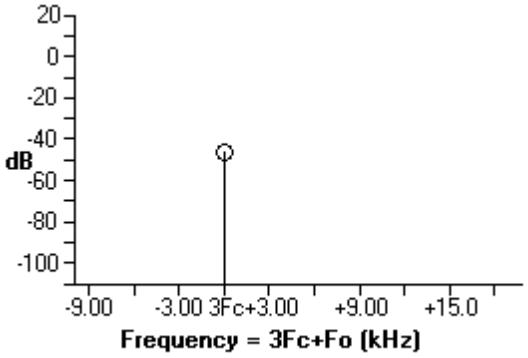
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 7 - 3rd Harmonic Curve (U)

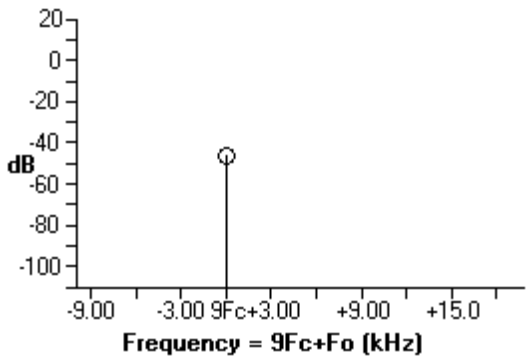
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 8 - Other Harmonic Curve (U)

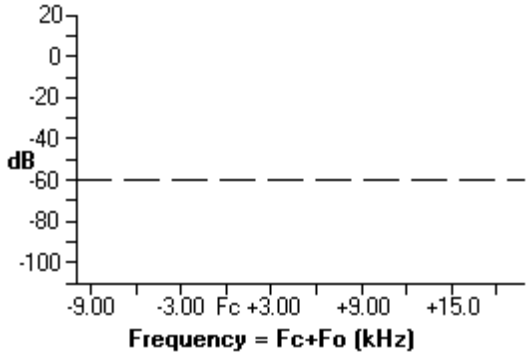
Atten. -46.0 dB **Offset (Fo)** 0.00000 kHz



(UNCLASSIFIED)

Figure 9 - Spurious Emission Curve (U)

Maximum Spurious Emission
Atten.
-60.0 dB



(UNCLASSIFIED)

Frequencies

Tuned Frequency : (U) 16440 MHz - 16560 MHz
Tuning Increment : (U) 1.0000 kHz
 # Freq Req. : (U) 1
Min. Separation : (U) 0.0010000 MHz
Em. Designator : (U) 69M0M9N
Neccessary BW : (U) 69000 kHz

Modulation - 69M0M9N

Occupied Bandwidth : (U) 69000 kHz
Measured/Calculated : (U) Calculated
Radar/Communications : (U) Radar
Radar Type : (U) FM Pulse Radar
Pulse Repetition Rate : (U) 1800 pps
Pulse Rise Time : (U) 0.000100 ms
Pulse Fall Time : (U) 0.000100 ms
Pulse Width : (U) 0.00788 ms

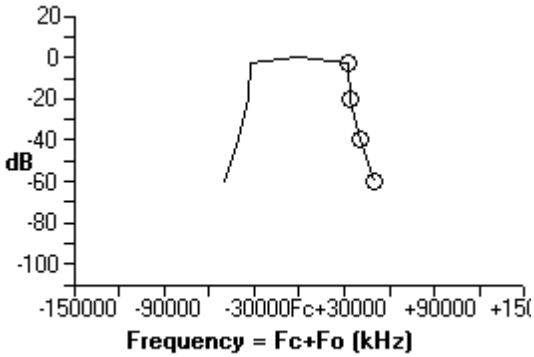
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Pulse Duty Cycle : (U) 1.418 %
Pulse Comp. Ratio : (U) 38.0
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 2
Spread Spectrum : No
Pulse Width : (U) 0.00788

Figure 10 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	32500 kHz
-20.0 dB	34500 kHz
-40.0 dB	40000 kHz
-60.0 dB	50000 kHz



(UNCLASSIFIED)

Powers

Power Type : Peak Envelope
Upper Limit : (U) 2000 W

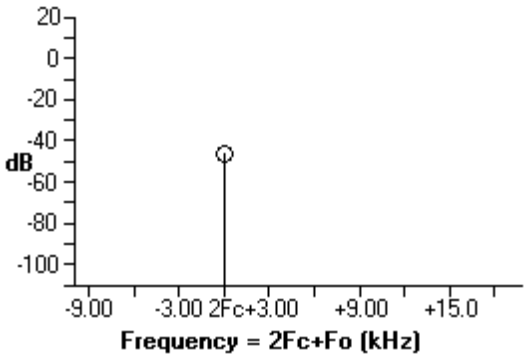
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

TRANSMITTER APQ-170(V)2, Ku-Band TF, TA Mode

Nomenclature	:	(U) APQ-170(V)2, Ku-Band TF, TA Mode
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1488, PN: 889410
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 6:57:25 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 11 - 2nd Harmonic Curve (U)

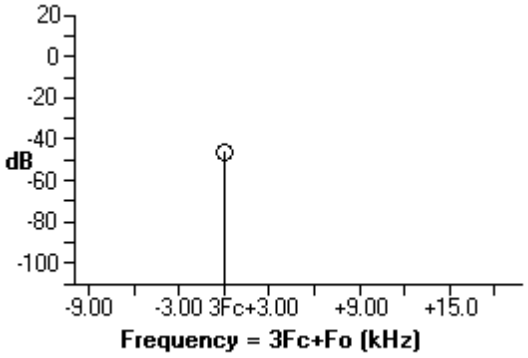
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 12 - 3rd Harmonic Curve (U)

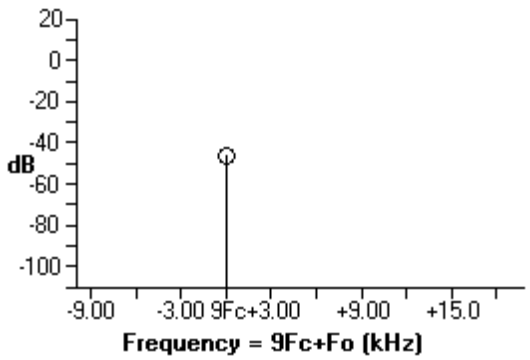
Atten.	Offset (Fo)
-46.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 13 - Other Harmonic Curve (U)

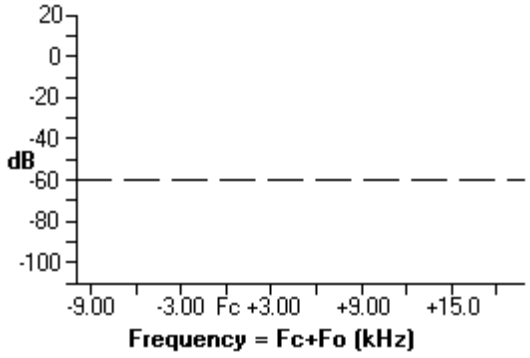
Atten. -46.0 dB **Offset (Fo)** 0.00000 kHz



(UNCLASSIFIED)

Figure 14 - Spurious Emission Curve (U)

Maximum Spurious Emission
Atten.
-60.0 dB



(UNCLASSIFIED)

Frequencies

Tuned Frequency : (U) 16440 MHz - 16560 MHz
Tuning Increment : (U) 1.0000 kHz
 # Freq Req. : (U) 1
Min. Separation : (U) 0.0010000 MHz
Em. Designator : (U) 69M0M9N
Neccessary BW : (U) 69000 kHz

Modulation - 69M0M9N

Occupied Bandwidth : (U) 69000 kHz
Measured/Calculated : (U) Calculated
Radar/Communications : (U) Radar
Radar Type : (U) FM Pulse Radar
Pulse Repetition Rate : (U) 1800 pps
Pulse Rise Time : (U) 0.000100 ms
Pulse Fall Time : (U) 0.000100 ms
Pulse Width : (U) 0.00834 ms

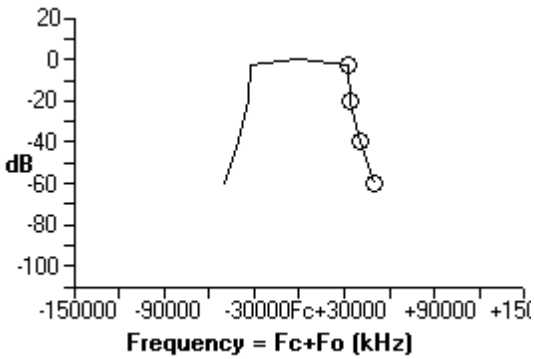
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Pulse Duty Cycle : (U) 1.501 %
Pulse Comp. Ratio : (U) 32.0
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 2
Spread Spectrum : No
Pulse Width : (U) 0.00834

Figure 15 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	32500 kHz
-20.0 dB	34500 kHz
-40.0 dB	40000 kHz
-60.0 dB	50000 kHz



(UNCLASSIFIED)

Powers

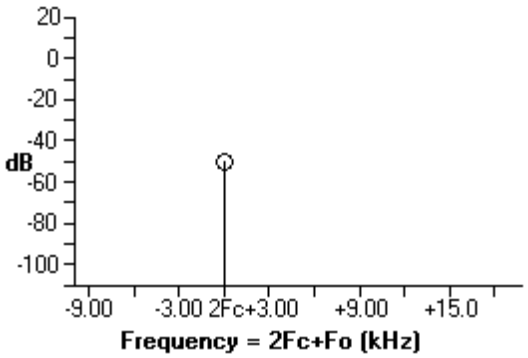
Power Type : Peak Envelope
Upper Limit : (U) 2000 W

TRANSMITTER APQ-170(V)2, X-Band Beacon

Nomenclature	:	(U) APQ-170(V)2, X-Band Beacon
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1487, PN: 889400
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 6:57:59 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 16 - 2nd Harmonic Curve (U)

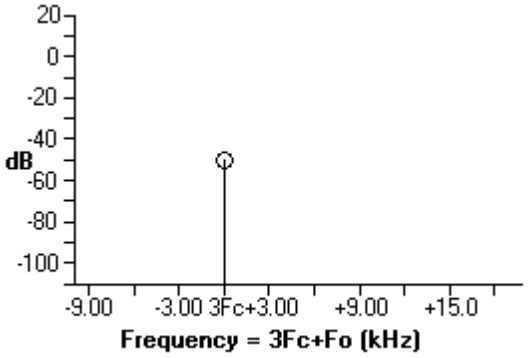
Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 17 - 3rd Harmonic Curve (U)

Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz

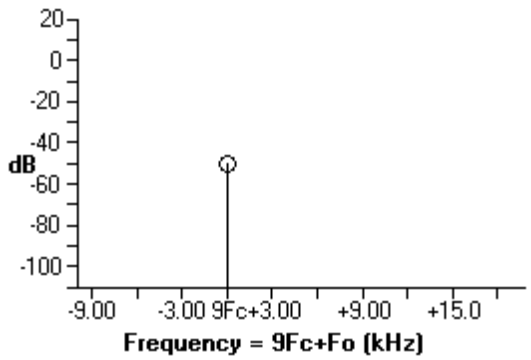


(UNCLASSIFIED)

Figure 18 - Other Harmonic Curve (U)

Atten. -50.0 dB

Offset (Fo) 0.00000 kHz

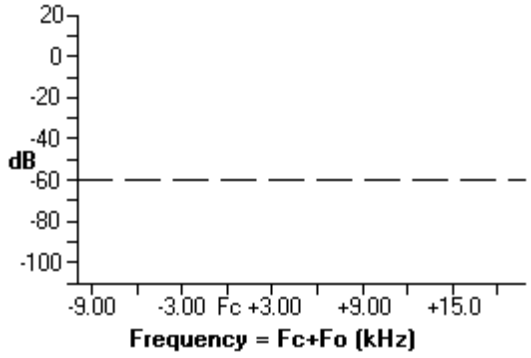


(UNCLASSIFIED)

Figure 19 - Spurious Emission Curve (U)

Maximum Spurious Emission

Atten. -60.0 dB



(UNCLASSIFIED)

Frequencies

Fixed Frequency : (U) 9375.0 MHz

Em. Designator : (U) 2M50P0N

Neccessary BW : (U) 2500.0 kHz

Modulation - 2M50P0N

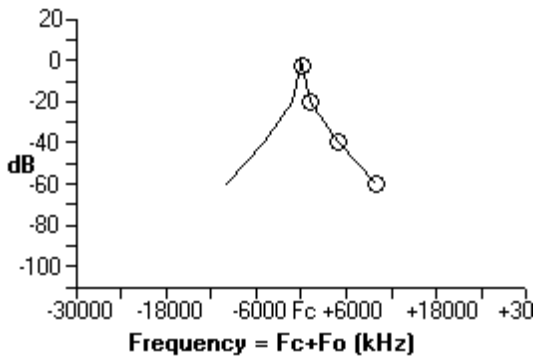
Occupied Bandwidth	:	(U) 3000.0 kHz
Measured/Calculated	:	(U) Calculated
Radar/Communications	:	(U) Radar
Radar Type	:	(U) Non-FM Pulse Radar
Pulse Repetition Rate	:	(U) 225 pps
Pulse Rise Time	:	(U) 0.000100 ms
Pulse Fall Time	:	(U) 0.000100 ms
Pulse Width	:	(U) 0.00235 ms
Pulse Duty Cycle	:	(U) 0.05288 %
Spread Spectrum	:	No
Pulse Width	:	(U) 0.00235

FULL RECORD PRINT FOR Transmitter

Figure 20 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	250.00 kHz
-20.0 dB	1250.0 kHz
-40.0 dB	5000.0 kHz
-60.0 dB	10000 kHz



(UNCLASSIFIED)

Powers

Power Type : Peak Envelope
Upper Limit : (U) 1000 W

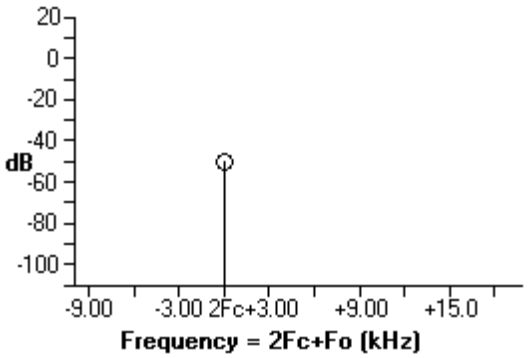
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

TRANSMITTER APQ-170(V)2, X-Band WTHR Mode

Nomenclature	:	(U) APQ-170(V)2, X-Band WTHR Mode
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1487, PN: 889400
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 7:00:21 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 21 - 2nd Harmonic Curve (U)

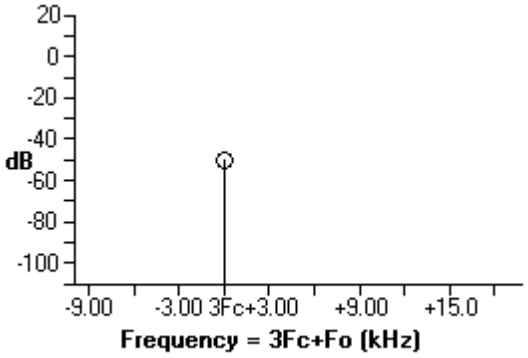
Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 22 - 3rd Harmonic Curve (U)

Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz

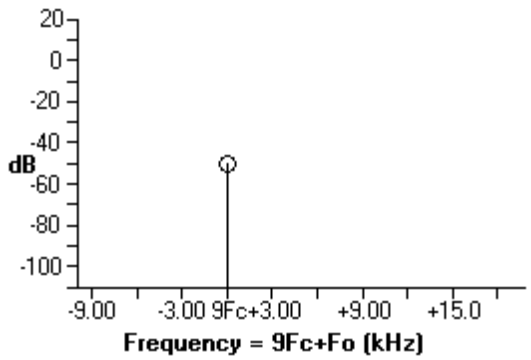


(UNCLASSIFIED)

Figure 23 - Other Harmonic Curve (U)

Atten. -50.0 dB

Offset (Fo) 0.00000 kHz

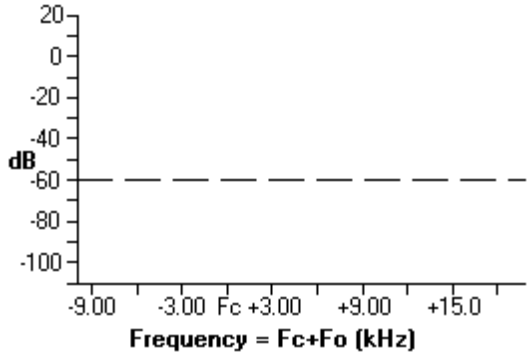


(UNCLASSIFIED)

Figure 24 - Spurious Emission Curve (U)

Maximum Spurious Emission

Atten. -60.0 dB



(UNCLASSIFIED)

Frequencies

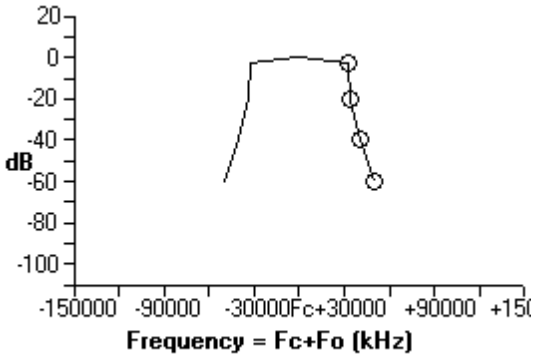
- **Tuned Frequency** : (U) 9180.0 MHz - 9540.0 MHz
- **Tuning Increment** : (U) 1.0000 kHz
- **# Freq Req.** : (U) 1
- **Min. Separation** : (U) 0.0010000 MHz
- **Em. Designator** : (U) 68M0M9N
  - **Neccessary BW** : (U) 68000 kHz
    - **Modulation - 68M0M9N**
      - **Occupied Bandwidth** : (U) 68000 kHz
      - **Measured/Calculated** : (U) Calculated
      - **Radar/Communications** : (U) Radar
      - **Radar Type** : (U) FM Pulse Radar
      - **Pulse Repetition Rate** : (U) 1800 pps
      - **Pulse Rise Time** : (U) 0.000100 ms
      - **Pulse Fall Time** : (U) 0.000100 ms
      - **Pulse Width** : (U) 0.0148 ms

Pulse Duty Cycle : (U) 2.664 %
Pulse Comp. Ratio : (U) 48.0
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 2
Spread Spectrum : No
Pulse Width : (U) 0.0148

Figure 25 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	32000 kHz
-20.0 dB	34000 kHz
-40.0 dB	40000 kHz
-60.0 dB	50000 kHz



(UNCLASSIFIED)

Powers

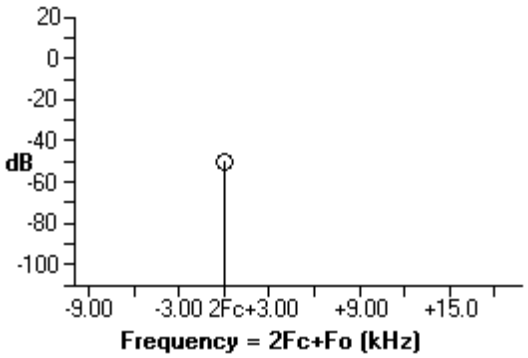
Power Type : Peak Envelope
Upper Limit : (U) 1000 W

TRANSMITTER APQ-170(V)2, X-Band PGM Mode

Nomenclature	:	(U) APQ-170(V)2, X-Band PGM Mode
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) RT-1487, PN: 889400
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	6/29/2010 6:58:52 PM (GMT)
Coordination ID	:	(U) J/F 12
Fcc Acc. Number	:	(U) None
Freq. Stability	:	(U) 50 ppm
Output Device	:	(U) Traveling Wave Tube
Tuning Method	:	(U) Synthesizer
Radar/Comm	:	(U) Radar
Supp. of Harmonics	:	(U) No

Figure 26 - 2nd Harmonic Curve (U)

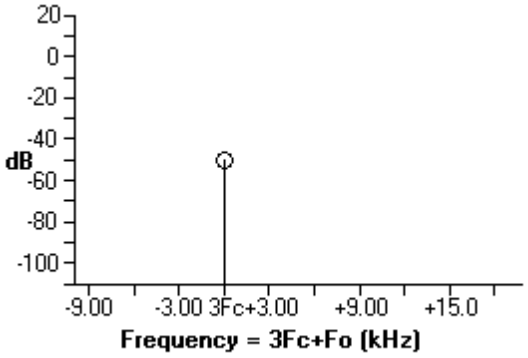
Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 27 - 3rd Harmonic Curve (U)

Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz

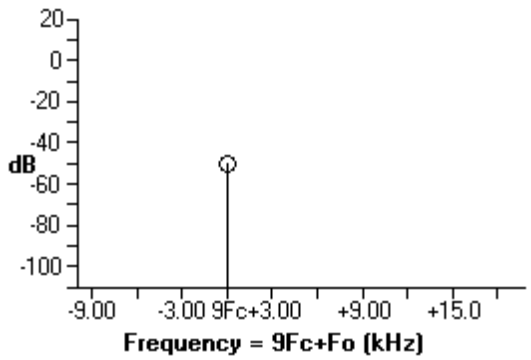


(UNCLASSIFIED)

Figure 28 - Other Harmonic Curve (U)

Atten. -50.0 dB

Offset (Fo) 0.00000 kHz

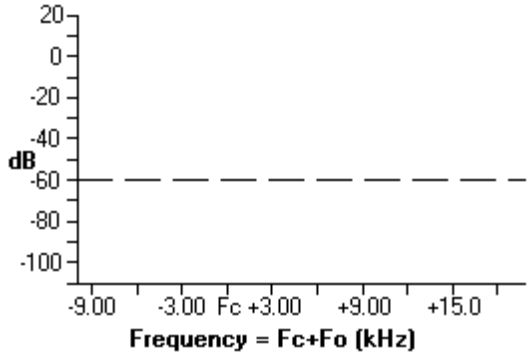


(UNCLASSIFIED)

Figure 29 - Spurious Emission Curve (U)

Maximum Spurious Emission

Atten. -60.0 dB



(UNCLASSIFIED)

Frequencies

- **Tuned Frequency** : (U) 9180.0 MHz - 9540.0 MHz
- **Tuning Increment** : (U) 1.0000 kHz
- **# Freq Req.** : (U) 1
- **Min. Separation** : (U) 0.0010000 MHz
- **Em. Designator** : (U) 68M0M9N
  - **Neccessary BW** : (U) 68000 kHz
    - **Modulation - 68M0M9N**
      - **Occupied Bandwidth** : (U) 68000 kHz
      - **Measured/Calculated** : (U) Calculated
      - **Radar/Communications** : (U) Radar
      - **Radar Type** : (U) FM Pulse Radar
      - **Pulse Repetition Rate** : (U) 1800 pps
      - **Pulse Rise Time** : (U) 0.000100 ms
      - **Pulse Fall Time** : (U) 0.000100 ms
      - **Pulse Width** : (U) 0.0220 ms

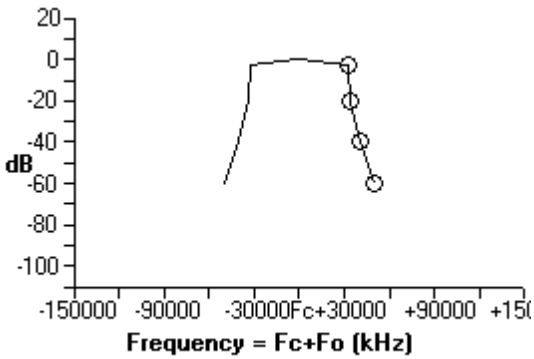
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Pulse Duty Cycle : (U) 3.960 %
Pulse Comp. Ratio : (U) 72.0
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 2
Spread Spectrum : No
Pulse Width : (U) 0.0220

Figure 30 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	32000 kHz
-20.0 dB	34000 kHz
-40.0 dB	40000 kHz
-60.0 dB	50000 kHz



(UNCLASSIFIED)

Powers

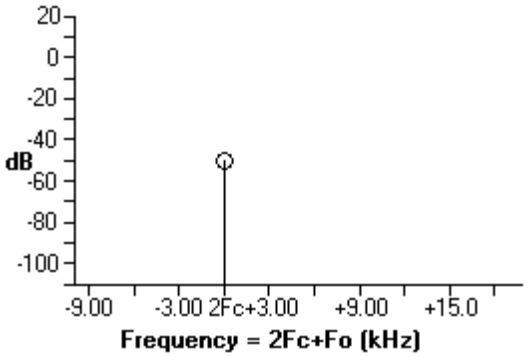
Power Type : Peak Envelope
Upper Limit : (U) 1000 W

TRANSMITTER APQ-170(V)2, X-Band TF,TA,TF/TA

Nomenclature : (U) APQ-170(V)2, X-Band TF,TA,TF/TA
Manufacturer : (U) DRS Sustainment Systems, Inc
Model Name : (U) RT-1487, PN: 889400
NTIA Approval Status : (U) Unapproved
Date/Time Last Mod. : 6/29/2010 6:59:40 PM (GMT)
Coordination ID : (U) J/F 12
Freq. Stability : (U) 50 ppm
Output Device : (U) Traveling Wave Tube
Tuning Method : (U) Synthesizer
Radar/Comm : (U) Radar
Supp. of Harmonics : (U) No

Figure 31 - 2nd Harmonic Curve (U)

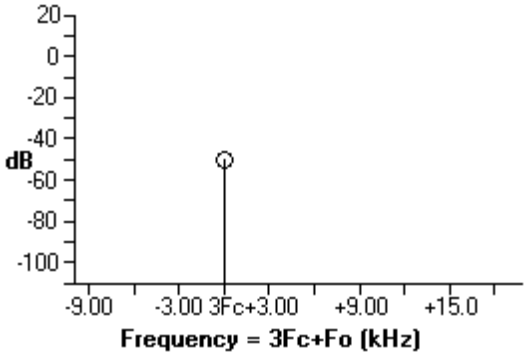
Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz



(UNCLASSIFIED)

Figure 32 - 3rd Harmonic Curve (U)

Atten.	Offset (Fo)
-50.0 dB	0.00000 kHz

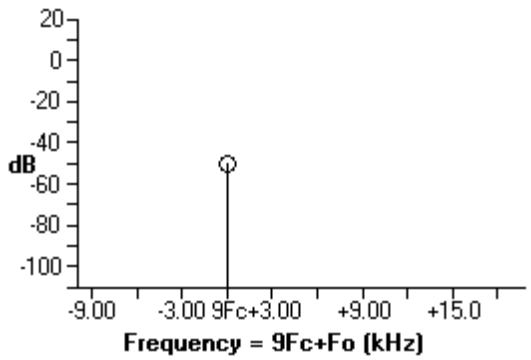


(UNCLASSIFIED)

Figure 33 - Other Harmonic Curve (U)

Atten. -50.0 dB

Offset (Fo) 0.00000 kHz

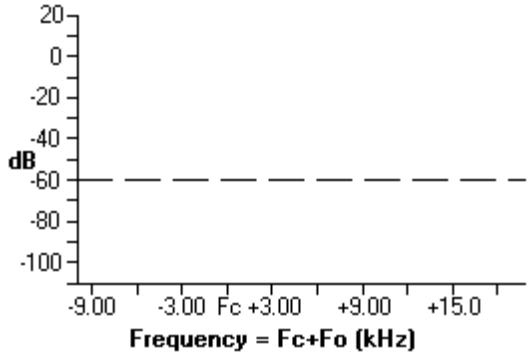


(UNCLASSIFIED)

Figure 34 - Spurious Emission Curve (U)

Maximum Spurious Emission

Atten. -60.0 dB



(UNCLASSIFIED)

Frequencies

- **Tuned Frequency** : (U) 9180.0 MHz - 9540.0 MHz
- **Tuning Increment** : (U) 1.0000 kHz
- **# Freq Req.** : (U) 1
- **Min. Separation** : (U) 0.0010000 MHz
- **Em. Designator** : (U) 68M0M9N
  - **Neccessary BW** : (U) 68000 kHz
    - **Modulation - 68M0M9N**
      - **Occupied Bandwidth** : (U) 68000 kHz
      - **Measured/Calculated** : (U) Calculated
      - **Radar/Communications** : (U) Radar
      - **Radar Type** : (U) FM Pulse Radar
      - **Pulse Repetition Rate** : (U) 1800 pps
      - **Pulse Rise Time** : (U) 0.000100 ms
      - **Pulse Fall Time** : (U) 0.000100 ms
      - **Pulse Width** : (U) 0.0244 ms

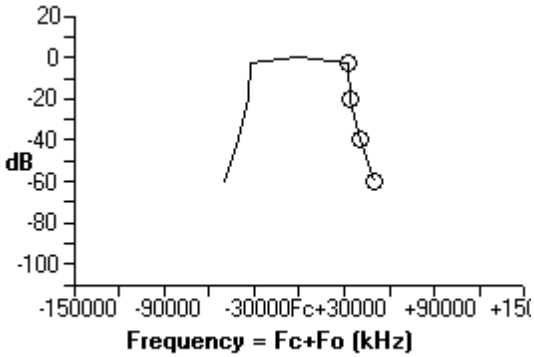
FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

Pulse Duty Cycle : (U) 4.392 %
Pulse Comp. Ratio : (U) 48.0
Pulse Freq. Deviation : (U) 64000 kHz
Radar Processing Gain : (U) 0.000 dB
Radar Subpulses : (U) 3
Spread Spectrum : No
Pulse Width : (U) 0.0244

Figure 35 - Fundamental Curve (U)

Meas/Calc : Calculated

Level	Offset (Fo)
-3.00 dB	32000 kHz
-20.0 dB	34000 kHz
-40.0 dB	40000 kHz
-60.0 dB	50000 kHz



(UNCLASSIFIED)

Powers

Power Type : Peak Envelope
Upper Limit : (U) 1000 W

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

RECEIVER APQ-170(V)2, Ku-Band Receiver

Nomenclature : (U) APQ-170(V)2, Ku-Band Receiver
Manufacturer : (U) DRS Sustainment Systems, Inc
Model Name : (U) RT-1488, PN: 889410
NTIA Approval Status : (U) Unapproved
Date/Time Last Mod. : 5/6/2010 2:28:23 PM (GMT)
Coordination ID : (U) J/F 12
Freq. Stability : (U) 50 ppm
Image Reject : (U) 50.0dB
Oscillator Tuned : (U) Below
Tuning Method : (U) Synthesizer
Cond. Undesired Em. : (U) 0.000dBm

Frequencies

Tuned Frequency : (U) 16440 MHz - 16560 MHz

Tuning Increment : (U) 1000.0 kHz

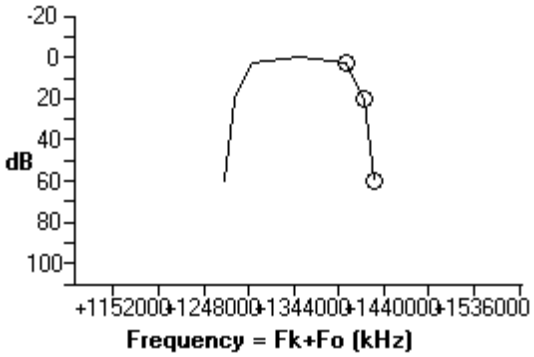
Sensitivities

Em. Designator : (U) 69M0M9N
Necessary BW : (U) 69000 kHz
Perf. Crit. : (U) S/N - Signal to Noise Ratio (dB)
Perf. Value : (U) 6
Sensitivity : (U) -106 dBm
Noise Fig. : (U) 7.50 dB
Noise Temp. : (U) 1341 K
Spur. Reject : (U) 60.0 dB

Figure 36 - IF Selectivity Curve (U)

IF Freq. (Fk) : 1350.0 MHz
Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	50000 kHz
20.0 dB	70000 kHz
60.0 dB	80000 kHz

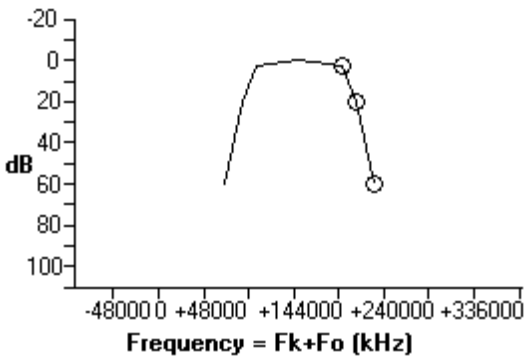


(UNCLASSIFIED)

Figure 37 - IF Selectivity Curve (U)

IF Freq. (Fk) : 150.00 MHz
Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	45000 kHz
20.0 dB	60000 kHz
60.0 dB	80000 kHz

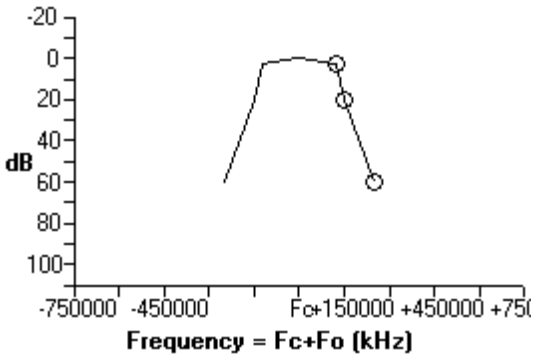


(UNCLASSIFIED)

Figure 38 - RF Selectivity Curve (U)

Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	125000 kHz
20.0 dB	150000 kHz
60.0 dB	250000 kHz



(UNCLASSIFIED)

Fixed Frequency : (U) 16440 MHz

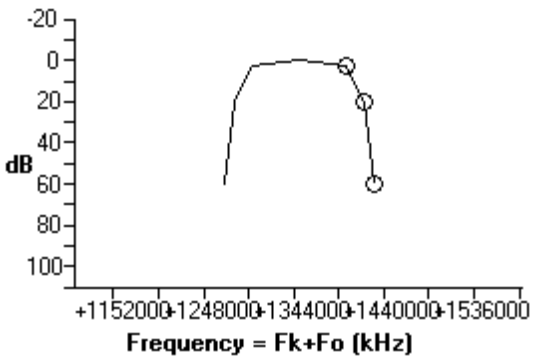
Sensitivities

Em. Designator	**:**	(U) 2M50P0N
Necessary BW	**:**	(U) 2500.0 kHz
Perf. Crit.	**:**	(U) S/N - Signal to Noise Ratio (dB)
Perf. Value	**:**	(U) 6
Sensitivity	**:**	(U) -109 dBm
Noise Fig.	**:**	(U) 7.50 dB
Noise Temp.	**:**	(U) 1341 K
Spur. Reject	**:**	(U) 60.0 dB

Figure 39 - IF Selectivity Curve (U)

IF Freq. (Fk) : 1350.0 MHz
Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	50000 kHz
20.0 dB	70000 kHz
60.0 dB	80000 kHz

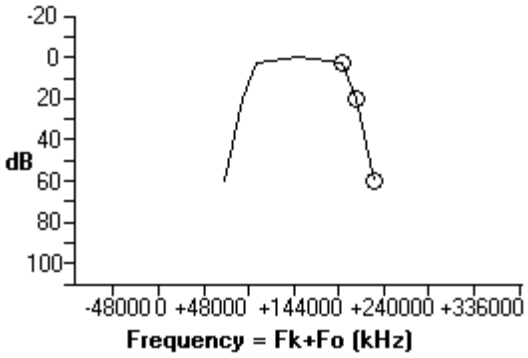


(UNCLASSIFIED)

Figure 40 - IF Selectivity Curve (U)

IF Freq. (Fk) : 150.00 MHz
Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	45000 kHz
20.0 dB	60000 kHz
60.0 dB	80000 kHz

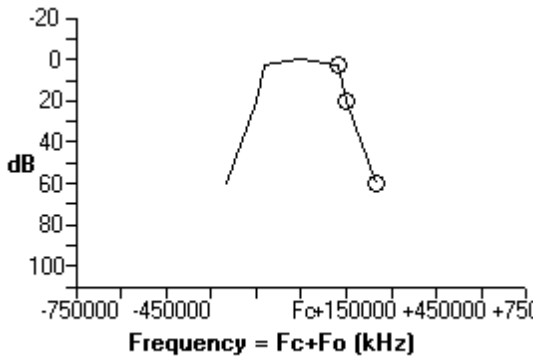


(UNCLASSIFIED)

Figure 41 - RF Selectivity Curve (U)

Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	125000 kHz
20.0 dB	150000 kHz
60.0 dB	250000 kHz



(UNCLASSIFIED)

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

RECEIVER APQ-170(V)2, X-Band Receiver

Nomenclature : (U) APQ-170(V)2, X-Band Receiver
Manufacturer : (U) DRS Sustainment Systems, Inc
Model Name : (U) RT-1487, PN: 889400
NTIA Approval Status : (U) Unapproved
Date/Time Last Mod. : 5/6/2010 2:00:18 PM (GMT)
Coordination ID : (U) J/F 12
Freq. Stability : (U) 50 ppm
Image Reject : (U) 40.0dB
Oscillator Tuned : (U) Below
Tuning Method : (U) Synthesizer
Cond. Undesired Em. : (U) 0.000dBm

Frequencies

Tuned Frequency : (U) 9180.0 MHz - 9540.0 MHz
Tuning Increment : (U) 1000.0 kHz

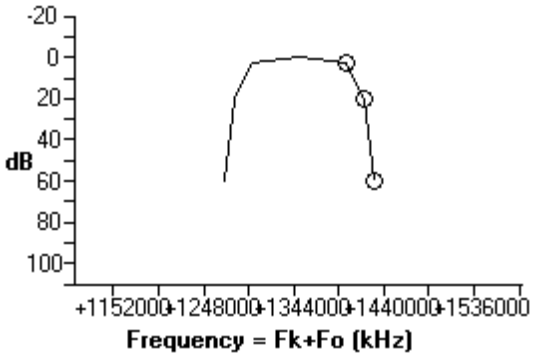
Sensitivities

Em. Designator : (U) 68M0M9N
Necessary BW : (U) 68000 kHz
Perf. Crit. : (U) S/N - Signal to Noise Ratio (dB)
Perf. Value : (U) 6
Sensitivity : (U) -109 dBm
Noise Fig. : (U) 6.00 dB
Noise Temp. : (U) 865 K
Spur. Reject : (U) 60.0 dB

Figure 42 - IF Selectivity Curve (U)

IF Freq. (Fk) : 1350.0 MHz
Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	50000 kHz
20.0 dB	70000 kHz
60.0 dB	80000 kHz

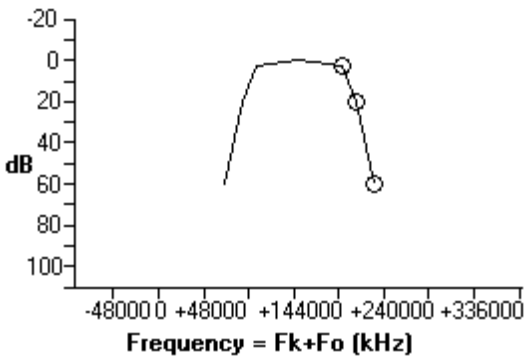


(UNCLASSIFIED)

Figure 43 - IF Selectivity Curve (U)

IF Freq. (Fk) : 150.00 MHz
Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	45000 kHz
20.0 dB	60000 kHz
60.0 dB	80000 kHz

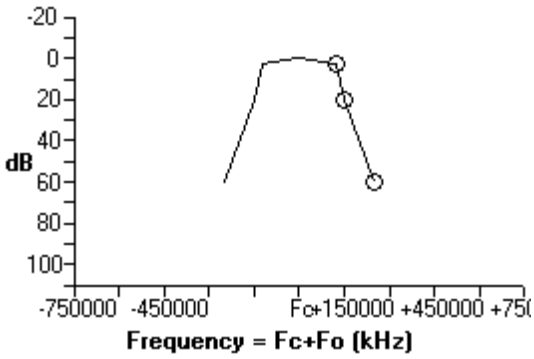


(UNCLASSIFIED)

Figure 44 - RF Selectivity Curve (U)

Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	125000 kHz
20.0 dB	150000 kHz
60.0 dB	250000 kHz



(UNCLASSIFIED)

Fixed Frequency : (U) 9310.0 MHz

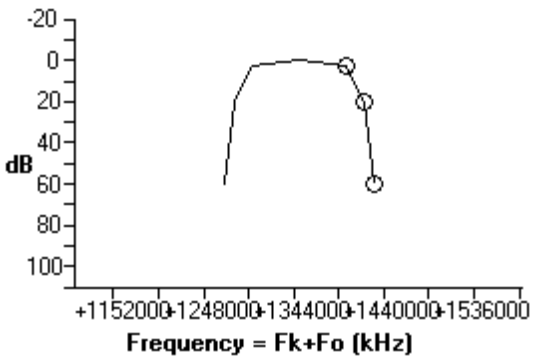
Sensitivities

Em. Designator : (U) 2M50P0N
Necessary BW : (U) 2500.0 kHz
Perf. Crit. : (U) S/N - Signal to Noise Ratio (dB)
Perf. Value : (U) 6
Sensitivity : (U) -109 dBm
Noise Fig. : (U) 6.00 dB
Noise Temp. : (U) 865 K
Spur. Reject : (U) 60.0 dB

Figure 45 - IF Selectivity Curve (U)

IF Freq. (Fk) : 1350.0 MHz
Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	50000 kHz
20.0 dB	70000 kHz
60.0 dB	80000 kHz

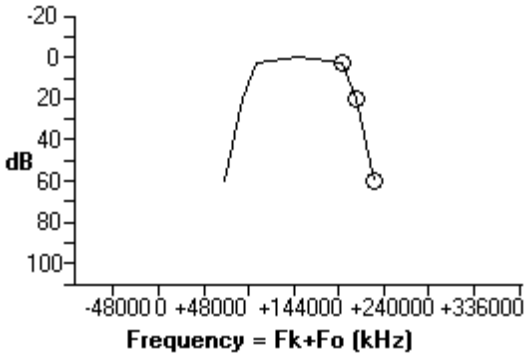


(UNCLASSIFIED)

Figure 46 - IF Selectivity Curve (U)

IF Freq. (Fk) : 150.00 MHz
Meas/Calc : Calculated

Atten.	Offset (Fo)
3.00 dB	45000 kHz
20.0 dB	60000 kHz
60.0 dB	80000 kHz

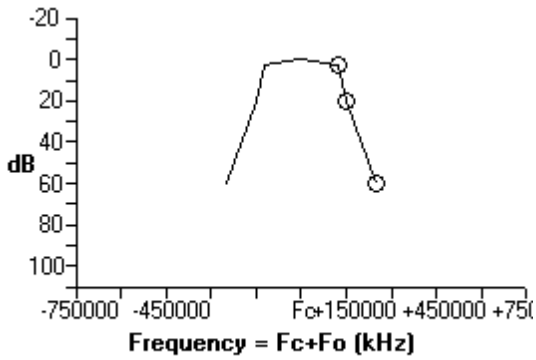


(UNCLASSIFIED)

Figure 47 - RF Selectivity Curve (U)

Meas/Calc : Calculated

Atten.	**Offset (Fo)**
3.00 dB	125000 kHz
20.0 dB	150000 kHz
60.0 dB	250000 kHz



(UNCLASSIFIED)

FULL RECORD PRINT FOR AN/APQ-170(V)2 Radar

ANTENNA AS-3756, APQ-170(V) Ku-Band Antenna

Nomenclature	:	(U) AS-3756, APQ-170(V) Ku-Band Antenna
Antenna Code	:	Aperture
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) AS-3756
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	5/6/2010 3:31:52 PM (GMT)
Coordination ID	:	(U) J/F 12
Lower Freq. Limit	:	(U) 16440 MHz
Upper Freq. Limit	:	(U) 16560 MHz
Polarization	:	(U) Right Hand Circular
Main Beam Gain	:	(U) 37.0 dBi
1st Horz. Sidelobe Atten.	:	(U) 18.0 dB
1st Vert. Sidelobe Atten.	:	(U) 18.0 dB
Atten. Rel/Act	:	(U) Relative dB
Horz. Beamwidth	:	(U) 1.40 degrees
Vert. Beamwidth	:	(U) 2.10 degrees
Horz. Scan Type	:	(U) 360 Degrees Rotating
Horz. Scan Speed	:	(U) 180 degrees/sec
Horz. Scan Rate	:	(U) 30.0 scans/min
Capable of Blanking	:	(U) Yes
Horz. Scan Type	:	(U) 360 Degrees Rotating
Vert. Scan Type	:	(U) Raster
Vert. Scan Speed	:	(U) 26.0 degrees/sec
Vert. Scan Rate	:	(U) 50.0 scans/min
Vert. Max. Elev.	:	(U) 11.0 degrees
Vert. Min. Elev.	:	(U) -21.0 degrees

ANTENNA AS-3755, APQ-170(V), X-Band Antenna

Nomenclature	:	(U) AS-3755, APQ-170(V), X-Band Antenna
Antenna Code	:	Phased Array
Manufacturer	:	(U) DRS Sustainment Systems, Inc
Model Name	:	(U) AS-3755
NTIA Approval Status	:	(U) Unapproved
Date/Time Last Mod.	:	5/6/2010 8:30:29 PM (GMT)
Coordination ID	:	(U) J/F 12
Lower Freq. Limit	:	(U) 9180.0 MHz
Upper Freq. Limit	:	(U) 9540.0 MHz
Polarization	:	(U) Left Hand Circular
Main Beam Gain	:	(U) 28.8 dBi
Horz. Beamwidth	:	(U) 6.00 degrees
Vert. Beamwidth	:	(U) 6.00 degrees
Vert. Scan Type	:	(U) Electronic Scan Sector
Vert. Scan Speed	:	(U) 80.0 degrees/sec
Vert. Scan Rate	:	(U) 74.0 scans/min
Vert. Max. Elev.	:	(U) 25.0 degrees
Vert. Min. Elev.	:	(U) -40.0 degrees

Frequency List

Tx Station	Rx Station	Frequency (MHz)	Em. Des.	Stn. Class
(U) MC-130H, Combat Talon II Radar	(U) Ground Targets	(U) 9180.0 - 9540.0	(U) 68M0M9N	MR
		(U) 9375.0	(U) 2M50P0N	
		(U) 16440 - 16560		
			(U) 69M0M9N	

Line Diagram: AN/APQ-170(V)2 Radar