



Requesting American Forces Radio and Television Service (AFRTS)

The American Forces Radio and Television Service (AFRTS) operate the American Forces Network (AFN), a worldwide military radio and television broadcast network.

AFRTS equipment can be obtained by direct purchase from an approved satellite vendor or through military transfers of funding to TASA (MIPR, etc) for large projects such as head ends. Before any purchase can be made, you must submit a completed ***“Request for Service”*** form to HQ AFRTS. The form is at the end of this document.

Programming on AFRTS is provided to the government at little or no cost by the US networks and studios based upon the fact that we limit access to our programming to authorized audience members. This agreement is put into jeopardy by fraudulent use or distribution of AFRTS programming, which that could result in the termination of programming agreements. This could essentially take AFRTS off the air. Do your part and safeguard this vital morale enhancer. Report lost or stolen decoders and suspected fraudulent use or distribution of the AFRTS signal directly to AFRTS at AFN@mail.mil.

Access to AFRTS programming is restricted by DoD regulations. You are eligible to receive AFRTS programming if you meet the following criteria.

- Active Duty US military stationed or deployed overseas and their accompanying family members.
- DoD civilians assigned or deployed overseas and their accompanying family members.
- Direct Hire US Government State Department employees assigned overseas.
- DoD Direct Hire Contractors who are US citizens and directly sponsored by the host command.
- Retired US military members may purchase decoders from military exchanges or directly from AFRTS.

DoD Contractors must meet additional eligibility requirements

- Command supported DoD contractors overseas must have an official CAC identification card issued by the DoD.
- This ID must be presented at any military exchange in order to purchase a decoder.
- If purchasing a decoder through the mail, the requester must scan and email a copy of the ID to dma.march.afrts.mbx.technologist@mail.mil

1. Levels of Service

Levels of service are tailored in scope from small to large. TVRO and L-Band distribution are the most common options in use today.

A. Television Receive-Only (TVRO): This system consists of a single satellite dish and one decoder, feeding one to three televisions. This system is used in common-use areas (dayrooms, dining facilities, or other large-gathering areas) where one channel per group is sufficient. The channel viewed is determined by the channel selection on the signal decoder, and not the TV. If more than one TV is set up to one decoder, the same program channel will be seen on all TV's connected to the decoder.

B. L-Band Distribution: This system consists of one satellite dish feeding multiple decoders (normally 10 or less). Each decoder feeds one television. L-Band systems are generally installed in small or mid-size buildings or compounds, and allow individual decoder users to select a specific AFN programming channel to view.

C. Cable Television Head-End (CATV): CATV systems consist of a pre-wired rack of equipment designed to supply individual AFRTS video-level signals to multiple points, usually at fixed, larger locations. These multiple points, or drops, allow a customer to connect a television to the cable system and receive AFRTS programming without the need for a dedicated decoder. CATV is usually installed at bases or in large buildings, and may feed as many as 300 drops. Due to the complexity of this system, a site survey must be conducted by AFRTS personnel at the requesting unit's expense. A CATV system head-end system also must be purchased by the requesting unit.

D. Microwave Multi-Point Distribution System (MMDS): This is basically wireless cable. The programming signal is acquired from the satellite and broadcast over the MMDS system. To receive programming, each building or tent would need a down converter. The converter receives the signal that is then fed into the structure via co-axial cable. The

MMDS system is ideal for temporary or highly flexible base camps, in that cable trenching is not required and adding or eliminating service to areas is as simple as installing or removing the down converter. When compared to fully trenched cable distribution, the cost for MMDS is considerably less expensive. Obtaining frequency approval from the Combatant Command frequency manager is required and is the sole responsibility of the requesting organization.

E. Over-the Air (OTA) Radio and/or Television: OTA TV consists of a TVRO system connected to a low-power television or radio transmitter. Separate transmitters and antennas are needed for each broadcast channel, but with this configuration, customers can receive individual AFN television channels without the need of a separate decoder and cabling. OTA TV is normally used in relatively stable situations and is normally installed in geographically remote areas; i.e. away from metro areas. In addition to providing television programs, AFRTS also offers OTA FM radio broadcast equipment. OTA radio consists of a TVRO system connected to one or more FM transmitters capable of up to 1,000 watts. OTA radio is relatively common in stable contingency situations where they offer the most effective means of providing command information and news to deployed personnel. **Note: The requesting organization must obtain Host Nation approval (in writing) and an authorized frequency from the Combatant Command frequency manager. Additionally, a copy of the authorization letter must be filed with AFRTS before any radiated signal is placed in operation.** The requesting unit may be required to purchase the required transmitter equipment.

F. Manned AFRTS service is usually only approved for established main operating locations. Close coordination with the Combatant Command and American Forces Radio and Television Service is required. The requesting organization is required to fund the first two years of broadcast operations.

2. Equipment

Satellite Dish: All programming is provided via Satellite downlink. Where you are in the “footprint” of a satellite signal determines the size of satellite dish required to obtain a quality signal. If you’re going to purchase a satellite dish on the local economy, ensure the Low Noise Block (LNB) is a Universal KU-Band, 10.7-11.8 GHz. Ensure you check for the lower frequency (10.7 GHz) as some European designed KU-Band LNB’s only go down to 10.8 GHz. American Forces Network decoders operate on 10.755 GHz input and a 10.8 GHz LNB will cause the signal to be degraded.

Satellite Signal Decoder: The AFRTS signal is encrypted and only signal decoders provided by or purchased from AFRTS or a military exchange are capable of acquiring the signal. All decoders can pick up and distribute AFN radio and TV programming. Approval for purchase comes electronically with an approved purchase order form to the authorized Cisco vendor for the D9865’s.

Estimated Unit Cost: \$440.00

Unit of Issue: EA

Manufacturer: CISCO

Part Number: 4028651050101AFR

Model Number: D9865H

RECEIVER SATELLITE; HD OUTPUTS; 4:2:0 NTSC VIDEO DECODING; CH 3/4
 MODULATOR WITH NA CORD; 8GB FLASH MEMORY; HDMI AND
 COMPONENT VIDEO OUTPUTS FOR HDTV; DVB-S QPSK, DVB-S2
 SPSK/8PSK DEMODULATION; VARIABLE QPSK SYMBOL RATES FROM 1
 TO 45 MSYMBOLS/S FOR DVB-S AND DVB-S2; POWERVU CONDITIONAL
 ACCESS WITH DES AND DVB DESCRAMBLING; CAM INTERFACE
 HARDWARE FOR DVB CAM-BASED DESCRAMBLING; 4:2:0 HD MPEG-2
 AND MPEG-4 AVC DECODING; 4:2:0 SD MPEG-2 AND MPEG-4 AVC
 DECODING; 4:2:0 NTSC AND PAL (B/G/I/D/M/N) VIDEO DECODING;
 MPEG DOLBY DIGITAL, AND HE-AAC AUDIO DECODING; DVB
 SUBTITLING AND DVB VBI (WST, WSS, VPS); ONE UNBALANCED
 STEREO PAIR OF AUDIO OUTPUTS; LINE 21 CLOSED CAPTION AND V-
 CHIP SUPPORT; FINGERPRINT TRIGGER; SERVICE REPLACEMENT;
 FIELD UPGRADEABLE SOFTWARE AND SECURITY; FRONT PANEL 4-
 DIGIT LED FOR CHANNEL DISPLAY; ON-SCREEN DISPLAY MENU FOR
 SETUP AND STATUS; USER-EDITABLE PRESET CONFIGURATIONS; C/W:
 NA POWER CORD AND EPG (ELECTRONIC PROGRAM GUIDE) SUPPORT;
 DIM: 11.69-IN W X 7.68-IN D; 5LBS; PWR CONSUMPTION: 35W
 MAX; LNB PWR ON SATELLITE INPUT: +13V/+18V AT 350 MA MAX;
 PWR RQMTS: 100-240VAC, 50/60 HZ. CISCO AUTHORIZED
 DEALERS ONLY NO GRAY MARKET EQUIPMENT WILL BE ACCEPTED.

Line Amplifiers: If you have long cable runs in excess of 200', you'll need to add in a line amplifier. The line amp will boost the signal strength allowing clear reception.

3. Programming

The programming you receive is determined by your geographic location. Your unit must be in the "footprint" of one of the many satellites that AFRTS uses to distribute programming worldwide. More information about programming is available at <http://myafn.net> by clicking on "Decoder Set Up" under "AFNINFO."

4. Satellites used to distribute AFRTS Programming

AFRTS Satellite Information

NewSkies NSS-9 (C-band) *(East Asia/West Pacific)*

Location: 183 degrees East

Band: C

Transponder Antenna polarization: Left-hand circular
Receiver Setting Polarization: "H-fixed" for model 9234 consumer-grade decoders or "H" for commercial-grade decoders with dual-band LNBS

C Band Downlink Frequency: 3.680 GHz

Transponder: 44

L-Band/LO Freq: 1470/5150 MHz

Symbol Rate: 28.0000 MS/s

FEC Rate: $\frac{3}{4}$

35.5 dbw EIRP (Hong Kong)

Network ID: 8

Coverage Map: <http://www.newskies.com/satellite.htm>

click on the map and select NSS-9 and then the C-band half of the satellite. The north-west zone beam is AFRTS.

NewSkies NSS-6 (Ku-band) *(Japan/Korea)*

Location: 95 degrees East

Band: Ku

Transponder Antenna polarization: Vertical
Receiver Setting Polarization: "V-fixed" for model 9234 consumer-grade decoders or "H" for commercial-grade decoders with dual-band LNBS

Ku Band Downlink Frequency: 12.647 GHz

L-Band/LO frequency: 2047 MHz* (10.600 MHz LNB Frequency)

Symbol Rate: 28.0000 MS/s

FEC Rate: $\frac{3}{4}$

EIRP: 53.7 dBW center pattern

Network ID: 4

Coverage Map: <http://www.newskies.com/satellite.htm>

click on the map and select NSS-6 and then the Ku-band half of the satellite.

INTELSAT 10-02 *(South America / Africa / Europe / Atlantic Ocean Region)*

Location: 359 degrees East (1 degree West)

Band: C

Transponder Antenna Polarization: RHCP

Receiver Setting Polarization: "H-fixed"

C-Band Frequency: 4.1750 GHz

Transponder: 38

L-Band frequency: 975 MHz

Symbol rate: 28.0000 MS/s

FEC rate: $\frac{3}{4}$

EIRP: 35 dBW

Network ID 3

Coverage Map:

<http://www.intelsat.com/images/en/resources/coverage/maps/maps/10-02-359-global.jpg>

Galaxy 28 (*United States*)

Location: 89 degrees West
 Band: C/L Band
 C-band frequency: 4.060 GHz
 Transponder: 118
 Transponder Antenna Polarization: HP
 Receiver Setting Polarization: "H-fixed" for model 9234 consumer-grade decoders or "H" for commercial-grade decoders with dual-band LNBS
 L-Band frequency: 1090 MHz
 Symbol rate: 28.0000 MS/s
 FEC rate: 3/4
 EIRP: 41.9 dBW
 Network ID 9
 Coverage Map (not-official):

<http://www.intelsat.com/flash/coverage-maps/index.html>

EUROBIRD™ 9 (Europe)

Position 9° East
 Downlink Frequency 11,804.200 MHz
 Band: KU
 Modulation QPSK
 Standard DVB-S PowerVu
 Polarization vertical
 Symbol rate 27.5 MSym/s
 Network ID 158
 FEC 3/4
 Standard LO-Frequency 10.6 GHz
 Resulting IF-frequency 1,741.24 MHz

Direct To Sailor (DTS) Service

INTELSAT 701 (*Pacific Ocean*)

Location: 180 degrees East
 Band: C
 Transponder Antenna Polarization: LHCP
 Receiver Setting Polarization: "H-fixed"
 C-Band frequency: 4.1735 GHz
 L-Band frequency: 976.5 MHz
 Symbol Rate: 3.6800 MS/s
 FEC rate: 2/3
 EIRP: 29.0 dBW
 Network ID 5
 Coverage map:
<http://www.intelsat.com/images/en/resources/coveragemaps/maps/701-180-global.jpg> (global)

Coverage map: <http://www.newskies.com/satellite.htm> (global)

INTELSAT 906 (*Indian Ocean and Persian Gulf*)

Location: 64.1 degrees East
 Band: C
 Transponder Antenna Polarization: LHCP
 Receiver Setting Polarization: "H-fixed"
 C-Band frequency: 4093.5 MHz
 L-Band frequency: 1056.5 MHz
 Symbol Rate: 3.6800 MS/s
 FEC Rate: 2/3
 EIRP: 29.0 dBW
 Network ID 7
 Coverage map:
<http://www.intelsat.com/images/en/resources/coveragemaps/maps/906-64-global.jpg> (global)

New Skies NSS-7

(Atlantic Ocean and Mediterranean Sea)

Location: 338.0 degrees East (22 degrees West)
 Band: C
 Transponder Antenna Polarization: LHCP
 Receiver Setting Polarization: "H-fixed"
 C-Band frequency: 4115 MHz
 L-Band frequency: 1035 MHz
 Symbol Rate: 3.6800 MS/s
 FEC Rate: 2/3
 EIRP: 30.5 dBW
 Network ID 6

***Important note on LNB frequencies:**

All C-band LNB's have a local oscillator (L.O.) frequency of 5.150 GHz but Ku-band LNB's may come in many different frequencies typically 9.750 to 12.75 GHz. This means that if you're attempting to watch a Ku-band service you need to set the decoder's frequency using a bit of simple math. The formula to set the Ku-Low/Single L.O. frequency on the AFRTS decoder is the downlink frequency minus the L.O. frequency. As an example the downlink frequency for the INTELSAT 804 satellite serving the Japan and Korea Direct to Home service area is 11.6380 GHz. An LNB with a local oscillator frequency of 10.000 GHz would give a Ku Low/Single L.O. frequency of 1638 MHz (1.638 GHz) by working the math problem $11.6380 - 10.000 = 1.638$. The Ku-band satellite serving the European service area is Eurobird at 9 degrees east.

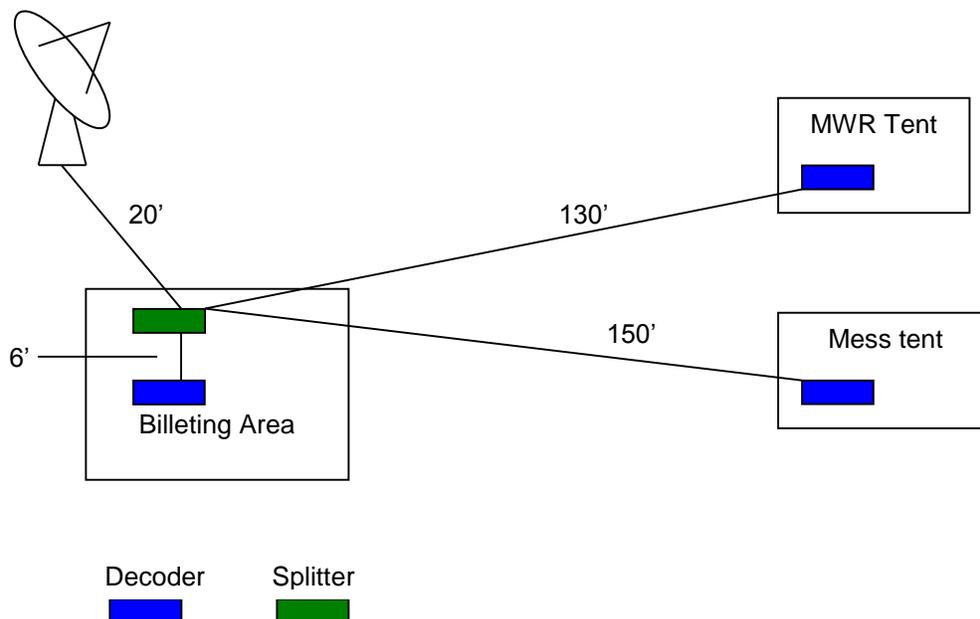
5. Request for Service form, physical layout requirements, and shipping instructions.

Due to the high value of AFRTS equipment and fiscal responsibility incurred by accepting the gear, the unit commanders name, email and DSN number must be included on the request form in the Unit Commander block. The requester identifies the individual that has been designated as the unit POC for all AFRTS matters. Whenever possible, a single person should be appointed by a commander to coordinate all AFRTS activity for all units associated with a Wing or Brigade level organization. This person will work all AFRTS issues for the Wing/Brigade and subordinate units.

All equipment is shipped through military supply channels. **The requesting unit must provide a valid and funded Transportation Account Code (TAC) on this RFS.** The TAC is what authorizes us to ship the equipment to the requesting unit. If available, equipment can be sent via FEDEX, DHL or another express carrier, also at the expense of the requesting unit. If the FEDEX/DHL/UPS option is desired, the requesting unit will forward their account number and billing information to the AFRTS entity shipping the equipment (TASA).

The Department of Defense Activity Address Code (DoDAAC) is a six character alpha-numeric combination that specifically identifies a unit. **All units have a DoDAAC and you should contact your unit supply element to obtain the deployed DoDAAC for your unit.** All equipment sent is sent to the DoDAAC address and we must have this **and the funded TAC information in order to process your request.**

Using MS Word drawing or MS Power Point, block out the physical layout of your location. Indicate where you plan on setting up service and the approximate distance, in feet, between all locations as shown in the example below. Include your physical layout file along with your completed request for service form.



American Forces Radio and Television Service Request Form					
All fields MUST be completed		Date Submitted: 09SEP15		AFRTS Tracking Control Number	
Requester:					
Unit Commander:					
Home Station Information	Parent Unit				
	Unit Address				
	Phone	DSN		Comm	
	Fax				
	Email				
Deployed Station Information	Deployed Unit				
	Unit Physical Address				
	Phone	DSN		Comm	
	DODAAC #		verify your deployed DoDAAC at https://dodaac.wpafb.af.mil/		
	TAC #				
	Country & City				
Audience breakdown by number and service	Army		Deployment Length		
	Air Force		Rotation Date		
	Navy		List locations where systems will be set up		
	Marines		<input type="checkbox"/> Messing tent/area	<input type="checkbox"/> Passenger Terminal	
	Coast Guard		<input type="checkbox"/> Morale tent/area	<input type="checkbox"/> Command Post	
	DoD Civilians		<input type="checkbox"/> Fitness tent/area	<input type="checkbox"/> Other:	
		<input type="checkbox"/> Billeting	<input checked="" type="checkbox"/> Other:		
Determine level of service requested	<input type="checkbox"/> Limited AFN TV receive only satellite dish/decoder system for 1 to 3 TV's.				
	<input checked="" type="checkbox"/> Limited area cable distribution system for multiple buildings up to 10 cable drops				
	<input type="checkbox"/> Large base-level cable distribution system with a cable head end				
	<input type="checkbox"/> Microwave Multi-Point Distribution System (MMDS) (frequency approval required)				
	<input type="checkbox"/> Over the Air (OTA) broadcast of AFN Radio (frequency approval required)				
	<input type="checkbox"/> Over the Air broadcast of AFN Television (frequency approval required)				
	<input type="checkbox"/> Manned radio and/or television station (Combatant Command coordination required)				
Determine requirements	Number of AFRTS signal decoders needed				
	Number of Satellite dishes needed				
Determine cable lengths required	Distance between the projected location of the satellite dish and decoder See Map				
	Distance between each decoder and TV 20FT				
	Number of TV's to be connected to a decoder 1 Each				
Requesting Units: Send completed Request for Service form to AFN@mail.mil					

6. Useful links

Policy and procedural information on AFRTS activities can be found in Department of Defense 5120.20-M, **“Management of American Forces Radio and Television Service”**, JUN ‘14. This regulation can be downloaded at <http://www.dtic.mil/whs/directives/corres/pdf/512020m.pdf>

To activate your AFRTS decoder, go to the **“MANAGE MY DECODER”** link at www.myafn.net

Your unit Department of Defense Activity Address Code (**DoDAAC**) can be checked at <https://dodaac.wpafb.af.mil/>

Check out programming schedules tailored to your specific time zone by visiting the **AFRTS Programming Guide** available at <http://www.myafn.net>

7. Points of Contact

<p><u>EUCOM/CENTCOM Contingency Support Element (CSE)</u> Craig McCarraher EML: craig.j.mccarraher.civ@mail.mil Defense Media Activity-Sembach AB, Germany Mobile: (+)491731874784</p>	<p><u>PACOM Contingency Support Element (CSE)</u> Defense Media Activity-Yokota AB, Japan Unit 5091 Rob Hawthorne APO AP 96328-5091 DSN (V) 315-225-7153, Comm 81-3117-55-7153 Email: olc.exo.rfs@yokota.af.mil</p>
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For operational and policy issues, contact AFN Headquarters:

JEREMY WOOD, MCC(SW/EXW/AW)
 HQ AFRTS Plans and Operations SNCO
 American Forces Network (AFN)
 Defense Media Activity Email: AFN@mail.mil
 DSN 733.6241 Comm 301.222.6241