

# Ordering Guide


P25 Digital Vehicular Repeater System

8A083X31 Revision 3.5

February 8, 2019



## Important Notes

1. Only the frequency bands shown in this ordering guide are available as standard configurations. For custom filtering, please contact Futurecom: [sales@futurecom.com](mailto:sales@futurecom.com)
2. **DVR** Frequencies must be specified when placing an order since the filters are custom tuned and cannot be retuned in the field.
3. Standard **DVR** delivery time is 10-12 weeks from the time the order is placed and the frequency information is provided. Frequency information must be accurate and in accordance with the frequency plan requirements described in this document in order to avoid additional delay.
4. DVRS standard Control cable length is **3 Feet**, for custom control lengths in 5 Ft, 10 Ft, 15 Ft, 20Ft, 25 Ft (MAX) Order Code: **DDN2749** is required. Also applies to DDN9028. Length must be specified on order.
5. The Motorola Mobile radios and accessories are NOT included with the DVRS.
6. The Motorola Mobile radio can operate with up to two control heads while interfaced to a DVR (vehicle mount **DVRS** model only).
7. High power VHF mobile radios (M25KTS9PW1 APX6500, M30KTS9PW1 APX7500) are NOT compatible with any Suitcase or Cabinet Mount DVRS models.
8. The Mobile Radio Tx Power must not exceed 50 Watts on any "**DVRS Enabled**" modes / channels due to the in-band filters power rating.
9. The Motorola Mobile radios may require firmware upgrade in order to operate with the **DVRS**. Motorola Radio Firmware Upgrades are to be purchased directly from Motorola. Please note that to ensure full compatibility and make use of the latest available feature set, it is recommended that the **APX™** Mobile radio and **DVRS** Firmware are updated to the latest Motorola certified firmware versions.
10. **APX™** Mobile Radios operating as the host mobile for the **DVRS** require subscriber option **GA00631** for operation. **APX™** Portable Radios operating through a **DVR**, utilizing the digital enhanced **DVRS** TRUNKING feature set require subscriber option **QA00631**.
11.  Subscribe to our newsletter if you want to be informed about new releases and updates. Please visit <http://futurecom.com/support/newsletter/>




## Mobile Radio Type




The DVR is compatible with the following Motorola Mobile Radios:




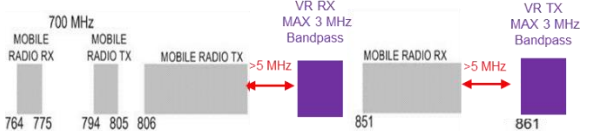
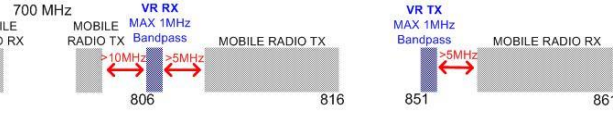
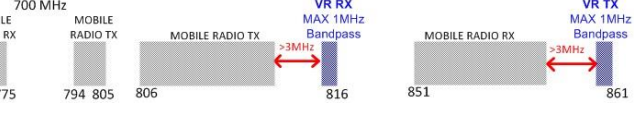
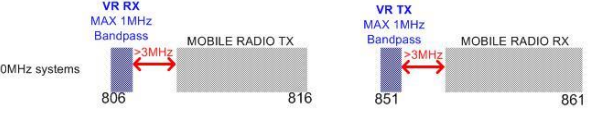
- Remote Mount **APX™ 5500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™ 6500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™ 7500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™7500** with any Control Head, dual band - Select Option TT05716AA
- Remote Mount **APX™8500** with any Control Head, all band - Select Option TT06279AA
- Standalone DVR do not require Mobile Radio.




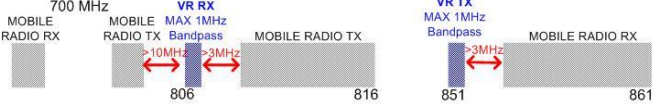
Depending on the isolation available between the APX™8500 mobile and DVRS antennas, one of the following kits may be required.

- Dual Triplexer Kit - Select Option DDN2657
- Single Triplexer Relay Kit - Select Option DDN2658
- Dual Triplexer Relay Kit - Select Option DDN2659
- Relay Kit - Select Option DDN2808

<p style="text-align: center;"><b>700MHz</b> In-Band DVRS Models</p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application A</u></p> 	TT2038	TT2046	Contact Futurecom
<p style="text-align: center;"><u>In-Band Application B</u></p> 	TT2039	TT2047	Contact Futurecom
<p style="text-align: center;"><u>In-Band Application C</u></p> 	TT2040	TT2048	Contact Futurecom
<p style="text-align: center;"><u>In-Band Application D</u></p> 	TT2041	TT2049	Contact Futurecom

<p style="text-align: center;"><b>700MHz</b>            Cross-Band            Standalone            DVRS Models</p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>Cross-Band Application A</u></p> <p style="text-align: center;">6MHz Bandpass Duplexer:            DVR Tx 769-775MHz            DVR Rx 799-805MHz</p>	<p style="text-align: center;">TT2043</p>	<p style="text-align: center;">TT2051</p>	<p style="text-align: center;">Contact Futurecom</p>
<p style="text-align: center;"><u>Standalone Application A</u></p> <p style="text-align: center;">11MHz Bandpass Duplexer:            DVR Tx 764-775MHz            DVR Rx 794-805MHz</p>	<p style="text-align: center;">TT2044</p>	<p style="text-align: center;">See PDR8000            Ordering Guide</p>	<p style="text-align: center;">Contact Futurecom</p>







<p style="text-align: center;"><b>800MHz</b> In-Band DVRS Models</p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application A</u></p> 	<p style="text-align: center;">TT1255</p>	<p style="text-align: center;">TT1264</p>	<p style="text-align: center;">TT1300 <i>(See Note on Next Page)</i></p>
<p style="text-align: center;"><u>In-Band Application B</u></p> 	<p style="text-align: center;">TT1256</p>	<p style="text-align: center;">TT1265</p>	<p style="text-align: center;">TT1301 <i>(See Note on Next Page)</i></p>
<p style="text-align: center;"><u>In-Band Application C</u></p> 	<p style="text-align: center;">TT1259</p>	<p style="text-align: center;">TT1266</p>	<p style="text-align: center;">TT1302 <i>(See Note on Next Page)</i></p>
<p style="text-align: center;"><u>In-Band Application D</u></p> 	<p style="text-align: center;">TT1260</p>	<p style="text-align: center;">TT1267</p>	<p style="text-align: center;">TT1303 <i>(See Note on Next Page)</i></p>

<p style="text-align: center;"><b>800MHz</b> In-Band Cross-Band Standalone DVRS Models</p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application E</u></p> 	<p style="text-align: center;">TT1261</p>	<p style="text-align: center;">TT1268</p>	<p style="text-align: center;">TT1304 <i>(See Note Below)</i></p>
<p style="text-align: center;"><u>Cross-Band Application A</u></p> <p style="text-align: center;">10MHz Bandpass Duplexer: DVR TX 851-869MHz (Specified 10MHz only) DVR RX 806-824MHz (Specified 10MHz only)</p>	<p style="text-align: center;">TT1262</p>	<p style="text-align: center;">TT1269</p>	<p style="text-align: center;">TT1305 <i>(See Note Below)</i></p>
<p style="text-align: center;"><u>Standalone Application A</u></p> <p style="text-align: center;">10MHz Bandpass Duplexer: DVR TX 851-869MHz (Specified 10MHz only) DVR RX 806-824MHz (Specified 10MHz only)</p>	<p style="text-align: center;">TT1263</p>	<p style="text-align: center;">See PDR8000 Ordering Guide</p>	<p style="text-align: center;">TT1306 <i>(See Note Below)</i></p>




NOTE: Due to FCC and IC regulations, Cabinet Mount DVRS operating in the ranges specified below in the US and Canada respectively, requires a mandatory High Stability Oscillator Item **DQDVR1017** that provides 1.0 ppm frequency stability.




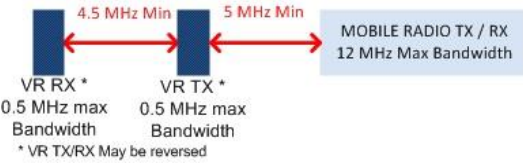
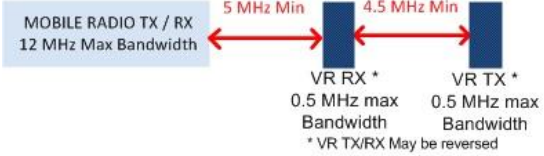
806 – 809 MHz & 851 – 854 MHz in the US•




806 – 824 MHz & 851 – 869 MHz in Canada




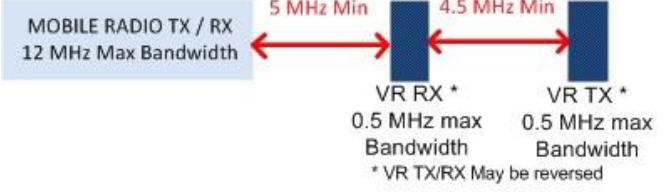
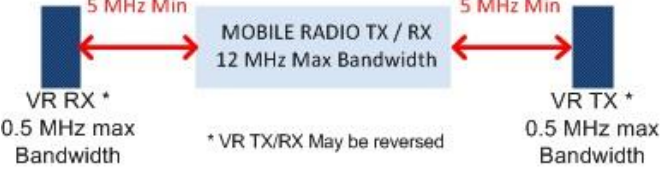
<p style="text-align: center;"><b>380-430MHz</b> <b>In-Band</b> <b>DVRS Models</b></p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application A</u></p> 	TT2000	TT2004	TT2008
<p style="text-align: center;"><u>In-Band Application B</u></p> 	TT2001	TT2005	TT2009
<p style="text-align: center;"><u>In-Band Application C</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1328	TT1332	TT1337
<p style="text-align: center;"><u>In-Band Application D</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1329	TT1333	TT1338



<p><b>380-430MHz</b> Cross-Band Standalone DVRS Models</p>	<p>Vehicle Mount</p> 	<p>Suitcase</p> 	<p>Cabinet</p> 
<p><u>Cross-Band Application A</u>  100kHz Wide Bandpass Duplexer 10MHz Tx to Rx Separation</p>	<p>TT2002</p>	<p>TT2006</p>	<p>TT2010</p>
<p><u>Cross-Band Application B</u>  500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1330</p>	<p>TT1334</p>	<p>TT1339</p>
<p><u>Standalone Application A</u>  100kHz Wide Bandpass Duplexer 10MHz Tx to Rx Separation</p>	<p>TT2003</p>	<p>See PDR8000 Ordering Guide</p>	<p>TT2011</p>
<p><u>Standalone Application B</u>  500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1331</p>	<p>See PDR8000 Ordering Guide</p>	<p>TT1340</p>

<p style="text-align: center;"><b>450-470MHz</b> <b>In-Band</b> <b>DVRS Models</b></p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application A</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1343	TT1347	TT1352
<p style="text-align: center;"><u>In-Band Application B</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1344	TT1348	TT1353

<p><b>450-470MHz</b> Cross-Band Standalone DVRS Models</p>	<p>Vehicle Mount</p> 	<p>Suitcase</p> 	<p>Cabinet</p> 
<p><u>Cross-Band Application A</u>  500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1345</p>	<p>TT1349</p>	<p>TT1354</p>
<p><u>Standalone Application A</u>  500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1346</p>	<p>See PDR8000 Ordering Guide</p>	<p>TT1355</p>

<p style="text-align: center;"><b>136-174MHz</b> <b>In-Band</b> <b>DVRS Models</b></p>	<p style="text-align: center;"><b>Vehicle Mount</b></p> 	<p style="text-align: center;"><b>Suitcase</b></p> 	<p style="text-align: center;"><b>Cabinet</b></p> 
<p style="text-align: center;"><u>In-Band Application A</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1236	TT1242	TT1249
<p style="text-align: center;"><u>In-Band Application B</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1237	TT1243	TT1250
<p style="text-align: center;"><u>In-Band Application C</u></p>  <p style="text-align: center;">* VR TX/RX May be reversed</p>	TT1238	TT1244	TT1251

<p><b>136-174MHz</b> In-Band Cross-Band Standalone DVRS Models</p>	<p><b>Vehicle Mount</b></p> 	<p><b>Suitcase</b></p> 	<p><b>Cabinet</b></p> 
<p><u>In-Band 2 MHz Simplex</u></p> 	<p>TT2768A</p>		
<p><u>In-Band 2 MHz Simplex</u></p> 	<p>TT2769A</p>	<p>DQDVC3063</p>	<p>DVC3065</p>
<p><u>Cross-Band Application A</u></p> <p>500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1240</p>	<p>TT1246</p>	<p>TT1253</p>
<p><u>Standalone Application A</u></p> <p>500kHz Wide Bandpass Duplexer 5MHz Tx to Rx Separation</p>	<p>TT1241</p>	<p>See PDR8000 Ordering Guide</p>	<p>TT1254</p>

## OPTIONS AND SPARES

ORDER CODE	DESCRIPTION
<b>DDN1577</b>	PROGRAMMING KIT FOR APX™6500 / APX™7500/ APX™8500 INTERFACED DVR Physical media kit. Includes programming & installation manual, programming software and USB cable. Manuals and software available online for free download to registered users.
<b>DDN9010</b>	PROGRAMMING KIT FOR Standalone DVR (WITHOUT MOBILE RADIO INTERFACE) Physical media kit. Includes programming & installation manual, programming software and USB cable. Manuals and software available online for free download to registered users.
<b>DDN9011</b>	BATTERY BACKUP FOR SUITCASE DVRS MODEL, 2HRS (50:50 TX-RX DUTY RATIO)
<b>DDN9025</b>	DVR PROGRAMMING USB CABLE, 10FT
<b>DDN9031</b>	OPTIONS CABLE PN 7W083X06-01, 2.5FT
<b>DDN9028</b>	DVR TO APX MOBILE CONTROL CABLE, PN 7W083X05-01, 3FT, (For Custom Length see order code below)
<b>DDN2749</b>	Replaces standard 3 Ft (7W083X05-1) from DVR or DDN9028 and adds Custom Control Cable Length 5 Ft / 10 Ft / 15 Ft / 20 Ft / 25 Ft (MAX) to DVR or DDN9028 Note: Length must be specified on order
<b>DDN2645</b>	FLAT MOUNT DVR-TO-MOBILE RADIO CABLE 3 FT 7W083X83-01
<b>DDN2750</b>	Replaces standard 3 Ft (7W083X83-01) from DVR or DDN2645 and add Custom Control Cable length 5 Ft / 10 Ft / 15 Ft / 20 FT / 20 / Ft (MAX) to DVR or DDN2645 Note: Length must be specified on order
<b>DDN9029</b>	DVR TO APX MOBILE Y CONTROL CABLE, PN 1W083B09-01, 3FT
<b>DDN9012</b>	UPGRADE (NEW DVR ORDERS ONLY) DVR-TO APX MOBILE Y CONTROL CABLE, PN 1W083B09-01, 3FT;
<b>DDN9030</b>	POWER CABLE FOR VEHICLE MOUNT DVRS, PN 1W083A01-01
<b>DQDV9028</b>	POWER CABLE FOR VEHICLE MOUNT, STANDALONE DVR, PN 7W083X37-01
<b>DDN9525</b>	AC POWER CABLE FOR SUITCASE DVR, PN 7W077X17-01
<b>DDN9524</b>	DC POWER CABLE FOR SUITCASE DVR, PN 7W077X32-01
<b>DDN2646</b>	DC Power cable for Suitcase Battery Pack FC# 7W077X11-01
<b>DDN9032</b>	RF SWITCH CABLE FOR VEHICLE MOUNT DVRS, PN 7W083X09-01, 1FT
<b>DDN9033</b>	RF CABLE DVR-TO-DVR NOTCH FILTER FOR VEHICLE MOUNT DVRS, PN 7W083X16-01, 3FT
<b>DDN9034</b>	RF CABLE MOBILE-TO-IN-BAND NOTCH FILTER FOR VEHICLE MOUNT DVRS, PN 7W083X17-01, 3FT
<b>DDN2721A</b>	Spare DVRS Installation Kit – Includes Fuse installation kit, DVR mounting plate, mounting plate hardware, DVR power cable, Connector mini UHF Male RA (VEHICLE MOUNT DVR ONLY) 73333K083X01-01
<b>DDN2719A</b>	Notch Filter External Cable APX8500 to Notch Filter 3 Ft.

<b>DDN1715A</b>	DVRS Migration Software- XTL to APX Mobile Radio(Per Unit ) Includes DVR Conversion Firmware, New Tweaker Programming Software and Manuals for Vehicle Mount DVRS
<b>DDN1716A</b>	DVRS Migration Software- XTL to APX Mobile Radio(Per Unit ) Includes DVR Conversion Firmware, New Tweaker Programming Software, Manuals and radio bracket for Suitcase DVRS
<b>DQDVR2012</b>	DVRS Conversion Software from APX to XTL for Vehicle Mount DVRS
<b>HKN6245A</b>	Control Head to Mobile Cable 2 Ft, ideal for Suitcase DVR
<b>TT05130AA</b>	Indoor Cabinet Mount DVRS Models can be upgraded to Outdoor Cabinet by adding Option <b>TT05130AA</b> . Outdoor cabinet does not include batteries. Customer to supply their own.
<b>DDN2335A</b>	Zippered Pouch
<b>TBD</b>	Optional Backpack Sling – Coyote Color
<b>TBD</b>	Multi Cam Color

## SUITCASE DVRS OPTIONS

Order Code	
<b>TT06069AA</b>	Standard Suitcase Case Color – Orange
<b>TT06070AA</b>	Standard Suitcase Case Color – Black
<b>TT06071AA</b>	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Yellow suitcase color
<b>TT06072AA</b>	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Silver suitcase color
<b>TT06073AA</b>	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Desert Tan suitcase color
<b>TT06074AA</b>	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Olive Drab Green suitcase color

## SUITCASE & CABINET MOUNT DVRS POWER SUPPLY OPTIONS

Order Code	
TT06075AA	Standard 117 VAC
TT06076AA	Standard 220 VAC

## ANTENNAS

<b>ANTENNAS FOR VEHICLE MOUNT DVR UNITY GAIN (0dBd), ROOF / TRUNK MOUNT</b>	<b>FREQUENCY BAND [MHz]</b>
HAD4006A	136 – 144
HAD4007A	144 – 150.8
HAD4008A	150.8 – 162
HAD4009A	162 – 174
HAE6012A	380 – 433
HAE4003A	450 – 470
HAE4004A	470 – 512
HAF4016A	764 – 870

<b>ANTENNAS FOR SUITCASE DVR UNITY GAIN (0dBd), MAG MOUNT</b>	<b>FREQUENCY BAND [MHz]</b>
DDN9014	136 – 174
DDN9015	380 – 520
DDN9016	764 – 869

## Warranty & Services

Standard Warranty is 18 months









<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
<b>DDN2085A</b>	DVR Cross Band 4 Year Extended Warranty	DVRS Cross Band 4 Year Extended Warranty Extends standard warranty by 4 years.  Can only be purchased once per unit.  Must be purchased prior to expiration of standard warranty.
<b>DDN2086A</b>	DVR Cross Band 1 Year Extended Warranty	DVR Cross Band 1 Year Extended Warranty Extends any existing warranty by 1 year.  Can only be purchased a maximum of 4 times per unit. Cannot be purchased in conjunction with 4 year extended warranty.  Must be purchased prior to expiration of any existing warranty.
<b>DDN2087A</b>	DVR In-Band 4 Year Extended Warranty	DVR In-Band 4 Year Extended Warranty Extends standard warranty by 4 years.  Can only be purchased once per unit.  Must be purchased prior to expiration of standard warranty.
<b>DDN2088A</b>	DVR In-Band 1 Year Extended Warranty	DVR In Band 1 Year Extended Warranty Extends any existing warranty by 1 year.  Can only be purchased a maximum of 4 times per unit. Cannot be purchased in conjunction with 4 year extended warranty.

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
		Must be purchased prior to expiration of any existing warranty.
<b>DDN1971A</b>	On-Site Technical and Programming Support (BASIC)	<p>Maximum 1 day; see EXTENDED support for additional days.</p> <p>Minimum 2 weeks advance notice required however subject to resource availability. Applies to North America only.</p>
<b>DDN1972A</b>	On-Site Technical and Programming Support (EXTENDED)	Must purchase BASIC on-site technical and programming support. All on-site activity must be scheduled as sequential days.
<b>DDN1973A</b>	Technical and Programming Phone Support	Must be purchased in 1hr increments.
<b>DDN1974A</b>	<p>On-Site Training (BASIC) 2 Courses Available:</p> <p><b>1. Training the Trainer/end user</b></p> <p>1 Day (Est 4 hours) end user training gives the end user a general understanding of Futurecom solutions through your agencies particular use case, highlighting best practices through situations commonly seen in the field during deployment situations. Participants will have hands on training with the newly implemented solution for practical operation and control.</p> <p><b><u>OR</u></b></p>	<p>Maximum 1 day; see EXTENDED training for additional days.</p> <p>Minimum 2 weeks advance notice required however subject to resource availability. Applies to North America only.</p> <p>Training the trainer requires the newly implemented DVRS/VRX1000/PDR8000 to be tested and in use on the network to get the most out of the Training the Trainer.</p>

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
	<p><b>2. Technical and Programming Training</b></p> <p>1 Day Technical and Programming training gives the radio technician an in depth understanding on how the DVRS/VRX1000/PDR8000 is integrated into the everyday operation of the agency. Highlighting code plug compatibility, Tweaker software functionality and programming for optimal end user experience.</p>	<p>Standard training package. Includes soft copy of training materials. Customized training available subject to content and price negotiation.</p> <p>Contact Futurecom Systems Group, ULC for a pre-training checklist to insure your solution is ready for Basic On-site Training</p> <p>Technical and Programming Training, Futurecom Systems Group, ULC requires at least two full functioning Portable radios (PSUs) programmed to the current system, at least one installed DVRS/VRX1000/PDR8000. For DVRS and VRX1000 use a Mobile Radio (MSU) radio set is required to conduct this training properly.</p>
<b>DDN1975A</b>	On-Site Training (EXTENDED)	Must purchase BASIC on-site training All on-site activity must be scheduled as sequential days.

## Suitcase Comparison Chart Reference

		
	Suitcase Trunking/ Conventional Extension DVRS	Suitcase with V.24 Extension PDR8000
Size (W,H,D)	20.6" x 17" x 8.6"	19.2" x 15.2" x 7.3"
Frequency Band	VHF, UHF, 700 MHz, 800 MHz	VHF, UHF, 700 MHz, 800 MHz
Power Output	10 Watts	20 Watts
Weight	50 lbs.	27.4 lbs.
AC/DC Power	YES	YES
Transmit Duty Cycle	Continuous	50 % - Closed Case Continuous - Open Case
Analog Conventional Operation	YES	YES <sup>*Note 1</sup>
P25 Digital Conventional Operation	YES	YES
Field Swapable Duplexer	NO	YES
Battery Source	External	External
Network Connection Type	APX MOBILE	WIRELINE
Closed Case Operation	NO	YES
Standard Case Colors		
Optional Case Colors		
Backpack Sling (Optional)	YES	YES
Battery Pack (Optional)	YES	YES
50 Watt Booster Pack (Optional)	NO	YES (A vailable Soon)

Note 1 - Analog operation is only available in local repeat mode

**CONTACT US:**

**Futurecom Systems Group, ULC**

**[sales@futurecom.com](mailto:sales@futurecom.com)**

**1-800-701-9180**