

Ordering Guide


P25 Digital Vehicular Repeater System

8A083X31 Revision 3.4

December 19, 2018



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
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:



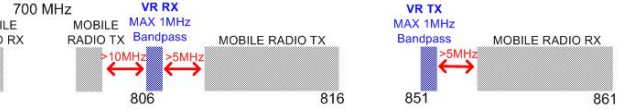
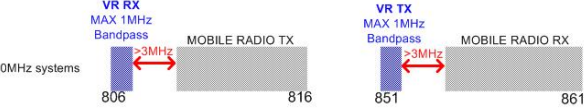
- Remote Mount **APX™ 5500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™ 6500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™ 7500** with any Control Head, single band - Select Option TT05715AA
- Remote Mount **APX™ 7500** with 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.


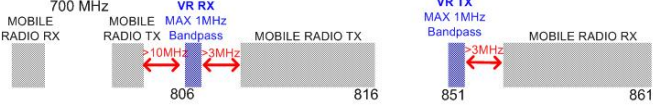
Depending on the isolation available between the APX™ 8500 mobile and DVRS antennas, one of the following kits may be required.

- | | |
|----------------------------|-------------------------|
| Single Triplexer Kit | - Select Option DDN2656 |
| Dual Triplexer Kit | - Select Option DDN2657 |
| Single Triplexer Relay Kit | - Select Option DDN2658 |
| Dual Triplexer Relay Kit | - Select Option DDN2659 |
| Relay Kit | - TBD |

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




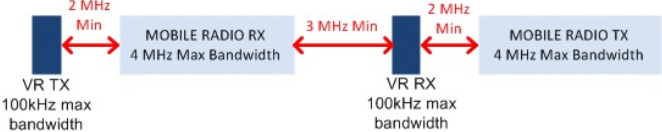
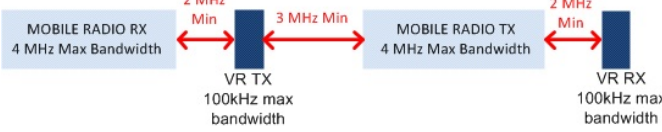

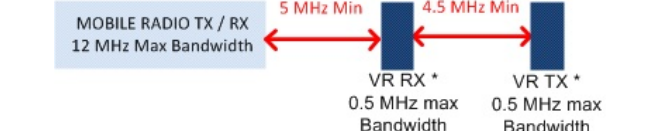
<p style="text-align: center;">800MHz In-Band DVRS Models</p>	<p style="text-align: center;">Vehicle Mount</p> 	<p style="text-align: center;">Suitcase</p> 	<p style="text-align: center;">Cabinet</p> 
<p style="text-align: center;"><u>In-Band Application A</u></p> 	<p style="text-align: center;">TT1255</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;">800MHz In-Band Cross-Band Standalone DVRS Models</p>	<p style="text-align: center;">Vehicle Mount</p> 	<p style="text-align: center;">Suitcase</p> 	<p style="text-align: center;">Cabinet</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>




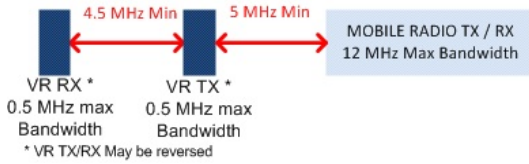
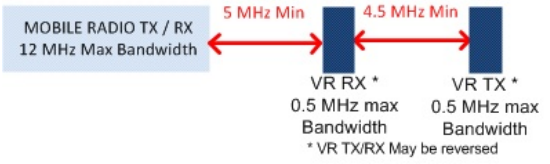
NOTE: Due to FCC and IC regulations, Cabinet Mount DVRS operating in the ranges specified below in the US and Canada respectively, requires a mandatory High Stability Oscillator Item **DQDVR1017** that provides 1.0 ppm frequency stability.




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






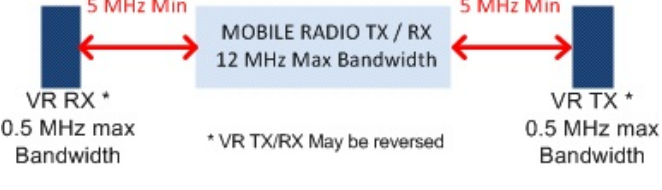
806 – 824 MHz & 851 – 869 MHz in Canada

<p style="text-align: center;">380-430MHz In-Band DVRS Models</p>	<p style="text-align: center;">Vehicle Mount</p> 	<p style="text-align: center;">Suitcase</p> 	<p style="text-align: center;">Cabinet</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>380-430MHz 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;">450-470MHz In-Band DVRS Models</p>	<p style="text-align: center;">Vehicle Mount</p> 	<p style="text-align: center;">Suitcase</p> 	<p style="text-align: center;">Cabinet</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>450-470MHz 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;">136-174MHz In-Band DVRS Models</p>	<p style="text-align: center;">Vehicle Mount</p> 	<p style="text-align: center;">Suitcase</p> 	<p style="text-align: center;">Cabinet</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>136-174MHz In-Band Cross-Band Standalone DVRS Models</p>	<p>Vehicle Mount</p> 	<p>Suitcase</p> 	<p>Cabinet</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
DDN1577	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.
DDN9010	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.
DDN9011	BATTERY BACKUP FOR SUITCASE DVRS MODEL, 2HRS (50:50 TX-RX DUTY RATIO)
DDN9025	DVR PROGRAMMING USB CABLE, 10FT
DDN9031	OPTIONS CABLE PN 7W083X06-01, 2.5FT
DDN9028	DVR TO APX MOBILE CONTROL CABLE, PN 7W083X05-01, 3FT, (For Custom Length see order code below)
DDN2749	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
DDN2645	FLAT MOUNT DVR-TO-MOBILE RADIO CABLE 3 FT 7W083X83-01
DDN2750	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
DDN9029	DVR TO APX MOBILE Y CONTROL CABLE, PN 1W083B09-01, 3FT
DDN9012	UPGRADE (NEW DVR ORDERS ONLY) DVR-TO APX MOBILE Y CONTROL CABLE, PN 1W083B09-01, 3FT;
DDN9030	POWER CABLE FOR VEHICLE MOUNT DVRS, PN 1W083A01-01
DQDV9028	POWER CABLE FOR VEHICLE MOUNT, STANDALONE DVR, PN 7W083X37-01
DDN9525	AC POWER CABLE FOR SUITCASE DVR, PN 7W077X17-01
DDN9524	DC POWER CABLE FOR SUITCASE DVR, PN 7W077X32-01
DDN2646	DC Power cable for Suitcase Battery Pack FC# 7W077X11-01
DDN9032	RF SWITCH CABLE FOR VEHICLE MOUNT DVRS, PN 7W083X09-01, 1FT
DDN9033	RF CABLE DVR-TO-DVR NOTCH FILTER FOR VEHICLE MOUNT DVRS, PN 7W083X16-01, 3FT
DDN9034	RF CABLE MOBILE-TO-IN-BAND NOTCH FILTER FOR VEHICLE MOUNT DVRS, PN 7W083X17-01, 3FT
DDN2721A	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
DDN2719A	Notch Filter External Cable APX8500 to Notch Filter 3 Ft.

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

SUITCASE DVRS OPTIONS

Order Code	
TT06069AA	Standard Suitcase Case Color – Orange
TT06070AA	Standard Suitcase Case Color – Black
TT06071AA	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Yellow suitcase color
TT06072AA	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Silver suitcase color
TT06073AA	Optional Suitcase Color – Deletes Standard Orange or Black suitcase and replaces with Desert Tan suitcase color
TT06074AA	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

ANTENNAS FOR VEHICLE MOUNT DVR UNITY GAIN (0dBd), ROOF / TRUNK MOUNT	FREQUENCY BAND [MHz]
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

ANTENNAS FOR SUITCASE DVR UNITY GAIN (0dBd), MAG MOUNT	FREQUENCY BAND [MHz]
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>
DDN2085A	DVR Cross Band 4 Year Extended Warranty	<p>DVRS Cross Band 4 Year Extended Warranty Extends standard warranty by 4 years.</p> <p>Can only be purchased once per unit.</p> <p>Must be purchased prior to expiration of standard warranty.</p>
DDN2086A	DVR Cross Band 1 Year Extended Warranty	<p>DVR Cross Band 1 Year Extended Warranty Extends any existing warranty by 1 year.</p> <p>Can only be purchased a maximum of 4 times per unit. Cannot be purchased in conjunction with 4 year extended warranty.</p> <p>Must be purchased prior to expiration of any existing warranty.</p>
DDN2087A	DVR In-Band 4 Year Extended Warranty	<p>DVR In-Band 4 Year Extended Warranty Extends standard warranty by 4 years.</p> <p>Can only be purchased once per unit.</p> <p>Must be purchased prior to expiration of standard warranty.</p>
DDN2088A	DVR In-Band 1 Year Extended Warranty	<p>DVR In Band 1 Year Extended Warranty Extends any existing warranty by 1 year.</p> <p>Can only be purchased a maximum of 4 times per unit. Cannot be purchased in conjunction with 4 year extended warranty.</p>

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
		Must be purchased prior to expiration of any existing warranty.
DDN1971A	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>
DDN1972A	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.
DDN1973A	Technical and Programming Phone Support	Must be purchased in 1hr increments.
DDN1974A	<p>On-Site Training (BASIC) 2 Courses Available:</p> <p>1. Training the Trainer/end user</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><u>OR</u></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>2. Technical and Programming Training</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>
DDN1975A	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 ^{*Note 1}
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:

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1-800-701-9180