

StingRay™

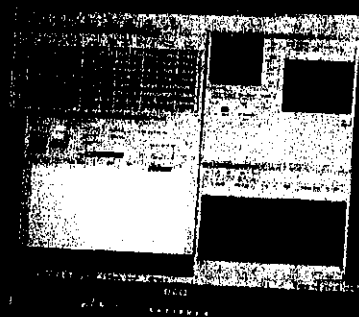
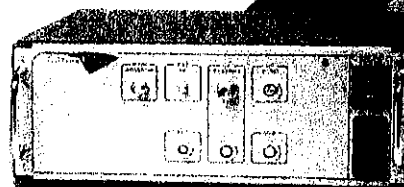
*Transportable CDMA
Interrogation, Tracking
and Location, and
Signal Information
Collection System*

Product Description

StingRay™ is Harris' latest offering in a long line of advanced wireless surveillance products. StingRay is a multichannel software defined radio that performs network base station surveys, Dialed Number and registration collection, mobile interrogation, and target tracking and location with Harris' Amber-Jack™ Direction-Finding Antenna. This low-power transportable surveillance system is designed with the future in mind—its reconfigurable architecture lends itself to upgrades of new capabilities and wireless standards, while preserving the initial investment in hardware.

Features

- Software Defined Radio (SDR) enables simultaneous monitoring of up to eight CDMA Paging/Access channel pairs
- Active interrogation capability emulates base station to collect MINs and ESNs through forced registration; external PA output available for higher power requirements
- Interfaces with AmberJack antenna to form a complete target tracking and location solution using active direction-finding and ranging techniques (active approach does not require the target phone to be engaged in a call)
- Optional geolocation software overlays target tracks and tracking vehicle location on a digital map
- Wideband RF front-end provides simultaneous operation in the U.S. cellular 800 and PCS 1900 MHz bands and is preconfigured to support iDEN (low band), GSM 900, and DCS 1800 bands
- PC-based controller running Windows® XP provides an intuitive Graphical User Interface (GUI)
- Industry-standard USB interface enables plug-n-play networking of multiple StingRay surveillance systems if the user requires more channel capacity
- Supports targeting and real-time searching of mobile identification numbers (MIN), dialed numbers, and electronic serial numbers (ESN)
- Low-power system designed for vehicular operations



AmberJack™

Dual-Band Direction Finding System

Product Description

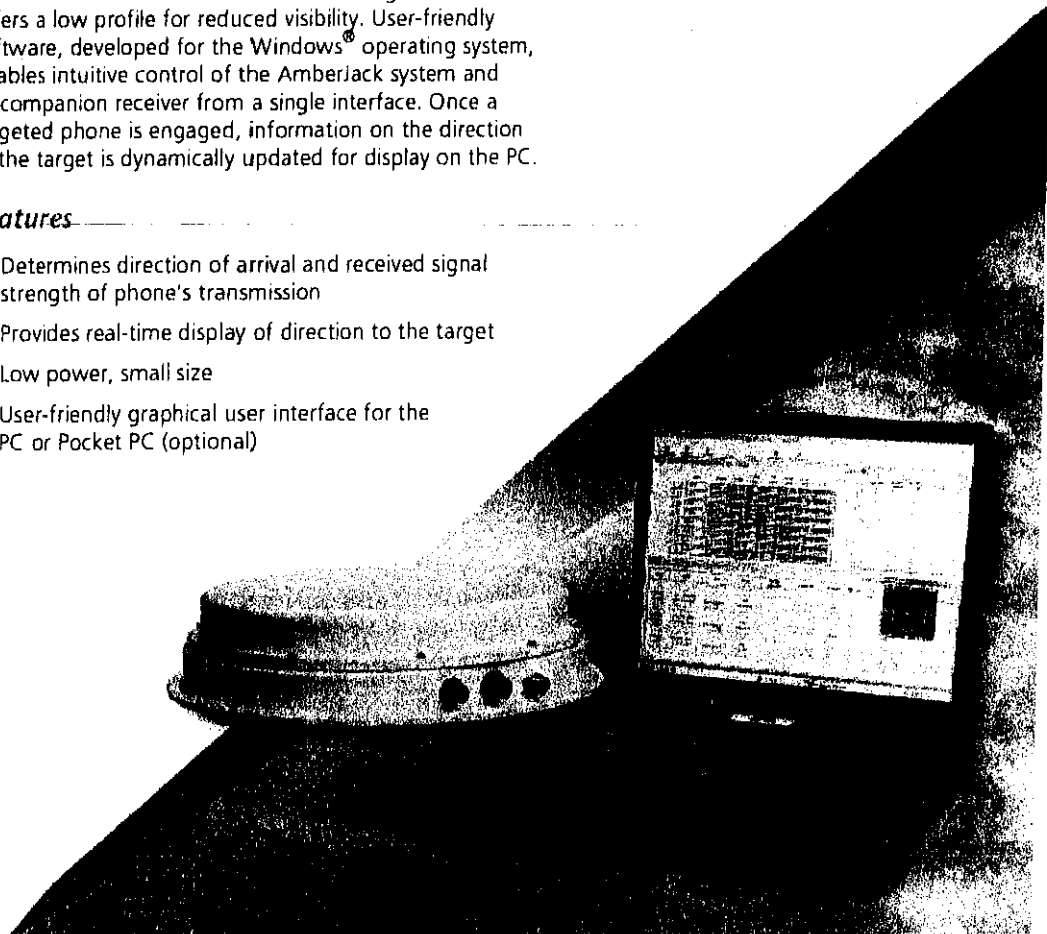
AmberJack™ is a phased array direction finding (DF) antenna system capable of tracking and locating mobile phone users. The DF antenna array is designed to operate with Harris' Loggerhead™ and StingRay™ products enabling tracking and location of AMPS, TDMA and CDMA phones. AmberJack operates in both the cellular and PCS bands.

AmberJack combines Harris' expertise in phased array antenna technology and tracking and locating systems to offer a state-of-the-art direction finding system. Beam forming technology offers a universal DF antenna for existing as well as future cellular standards.

The DF antenna array incorporates magnetic mounts for ease of installation to the roof of a tracking vehicle and offers a low profile for reduced visibility. User-friendly software, developed for the Windows® operating system, enables intuitive control of the AmberJack system and its companion receiver from a single interface. Once a targeted phone is engaged, information on the direction to the target is dynamically updated for display on the PC.

Features

- Determines direction of arrival and received signal strength of phone's transmission
- Provides real-time display of direction to the target
- Low power, small size
- User-friendly graphical user interface for the PC or Pocket PC (optional)





HARRIS CORPORATION

August 25, 2008

To: Raul Perez, City of Miami PD

Government Communications
Systems Division
Wireless Products Group
P.O. Box 9800
Melbourne, FL USA 32902-9800
phone 1-321-309-7773

www.harris.com

RE: StingRay and KingFish Sole Source Justification

Harris Government Communications Systems Division, via its Wireless Products Group (WPG) in Melbourne, FL, offers a comprehensive line of cellular surveillance and tracking equipment, plus training and maintenance, for exclusive utilization by Government and Law Enforcement Agencies. Harris WPG developed and owns the equipment designs, but does sub-contract the electronic board assemblies, functional testing of those assemblies, and chassis integration. Harris WPG adds application specific, proprietary software, and conducts final testing on the chassis prior to shipment to the customer. Harris WPG has also developed specialized training courses for the operation and use of the StingRay and KingFish equipment.

The Harris StingRay and KingFish systems are compatible with the CDMA standard in the 800 MHz and 1900 MHz frequency bands, the GSM standard in the 800 MHz, 900 MHz, 1800 MHz, and 1900MHz frequency bands, the iDEN (Nextel) standard in the 800 MHz and 850 MHz frequency bands, the UMTS standard in the 800 MHz and 1900 MHz frequency bands, and, with optional converter equipment, the UMTS standard in the 2100 MHz frequency band.

The Harris StingRay and KingFish vehicular-based systems are the only portable standard +12VDC powered CDMA, GSM, UMTS, and iDEN interrogation, tracking and location, and signal information collection system currently available. When interfaced with the optional Harris AmberJack direction-finding (DF) antenna(s) (or handheld DF antenna for iDEN and UMTS), Tarpon software, laptop PC controller, and Harpoon amplifier kits, the StingRay can perform vehicular-based DF operations on the CDMA, GSM, UMTS, and iDEN cellular formats. The transportability and standard +12VDC vehicular power features of the Harris StingRay and KingFish products are unique for tactical mission needs.

The StingRay and KingFish are quoted with software and accessories that are required in order to perform missions on the CDMA, GSM, UMTS, and iDEN cellular formats. These include the cable assemblies, power supplies, antennas, laptop PC controller, power amplifiers, handheld DF antenna, AmberJack DF antenna, and cellular format software (CDMA, GSM, UMTS, and iDEN).

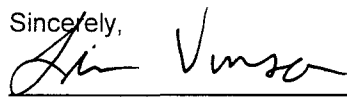
Harris also sells training on the use of the StingRay, KingFish and its accessories. Standard training sessions are 2 days per class with a maximum class size of 4 students. One-year maintenance agreements are included with all Harris WPG Products. Maintenance agreements include the following:

- Customer telephone support (8AM – 6PM EST)
- Hardware warranty
- Notification and access to software upgrades as they are released

Harris WPG is your only source and distributor of the StingRay vehicular-based and KingFish man-portable systems plus compatible accessories, training and maintenance.

If you require any additional information, please feel free to my direct line at 321-309-7773 or my mobile at 321-258-2583.

Sincerely,

 8/25/08

Lin Vinson
Major Account Manager, Wireless Products Group
Harris Corporation



Quote	QTE6779-01751
Date	7/31/2008
Page:	1

Quotation

Bill To:

City of Miami Police Department
 Detective Raul Perez
 raul.perez@miami-police.org
 305-321-7655

Ship To:

Detective Raul Perez
 raul.perez@miami-police.org
 305-321-7655

Purchase Order No.	Customer ID	Salesperson ID	Shipping Method	Payment Terms	Req Ship Date	Master No.
	MDPD-MIAFL-001		BEST WAY	Net 30	0/0/0000	2,211
Quantity	Item Number	Description	UOM	Discount	Unit Price	Ext. Price
1	PA-KIT-30W DUAL-BAND	PA-KIT-30W Dual-Band CONUS 850/1900	EA		\$17,500.00	\$17,500.00
1	UMTS-B4-CONV	UMTS 2100 MHz Converter	EA		\$16,000.00	\$16,000.00
1	AJ-W-UG	AmberJack-X or G to AmberJack-W Upgrade (WideB	EA		\$18,000.00	\$18,000.00
	NOTE	Delivery will be 120 days ARO unless otherwise stated. Please see attached Terms and Conditions.	*			\$0.00

HARRIS CORP - WIRELESS PRODUCTS GROUP
 P.O. BOX 9800, M/S R5-11A
 MELBOURNE, FL 32902-9800
 PH: 800-358-5297, FAX: 321-309-7437, wpg@harris.com

Approved By: _____

Subtotal	\$51,500.00
Misc	\$0.00
Tax	\$0.00
Freight	\$0.00
Trade Discount	\$0.00
Purchase Price	\$51,500.00

Harpoon™

Software-Controlled, High-Power Filtered Amplifier

Product Description

Harpoon™ is a software-controlled, high-power filtered amplifier that maximizes the multichannel transmit capability of the StingRay II® and significantly improves the performance of the single-channel StingRay® and KingFish® systems by providing high-gain, wide dynamic range, and excellent linearity along with 30 watts of filtered output power. System status indication alerts the user during fault conditions including problems with the RF connections.

- Four Versions Available
 - Harpoon 850/1900 (Dual Band)
 - Harpoon 900/1800 (Dual Band)
 - Harpoon 2100 (Single Band)
 - Harpoon i800 (Single Band)

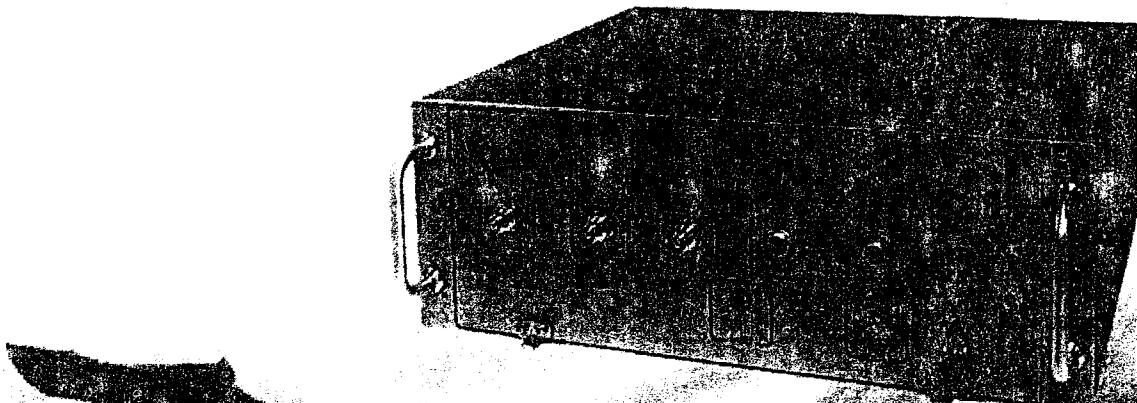
Features

- Automatic Level Control
 - Maximizes total output power up to 30 W per band
 - Maintains constant output power
 - Improves power level accuracy
- Filtered Output
 - Improves transmit signal quality
 - Improves receiver sensitivity



Operations Supported

- Maximizes the multichannel transmit capability of the StingRay II
- Significantly improves the performance of the single-channel StingRay and KingFish systems



Harpoon™

Software-Controlled, High-Power Filtered Amplifier



Standards Supported

- GSM
- CDMA2000®
- iDEN
- UMTS

Frequency Coverage

- 850/1900: 869–894 MHz/1930–1990 MHz
- 900/1800: 925–960 MHz/1805–1880 MHz
- iDEN 800: 851–870 MHz
- 2100: 2110–2170 MHz

Physical Characteristics

- Dual Band
 - Size: 10.5" x 14.75" x 5"
 - Weight: 24 lbs
- Single Band
 - Size: 10.5" x 10.5" x 5"
 - Weight: 15 lbs

Power Specifications

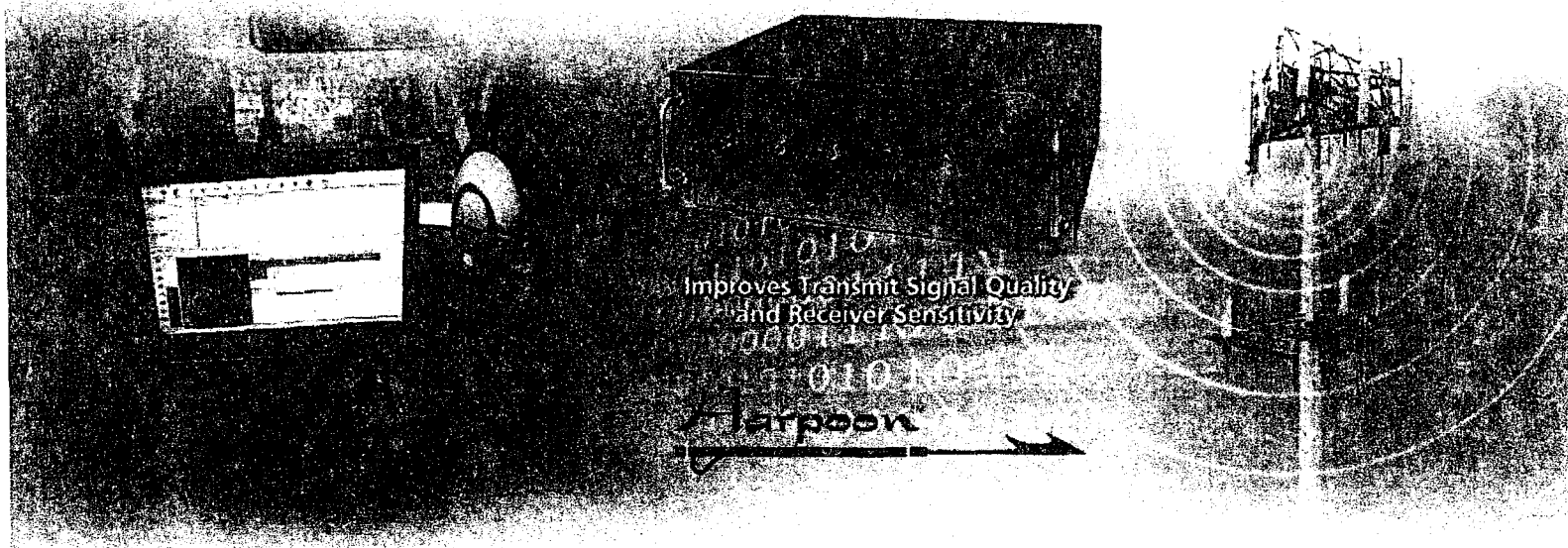
- Input: 10–33 Vdc
- Power Consumption
 - Dual Band: 440 W max
 - Single Band: 280 W max

Optional Accessories

- Diplexer for dual-band operation with StingRay and KingFish

Catalog Part Number

- Harpoon 850/1900
- Harpoon 900/1800
- Harpoon i800
- Harpoon 2100



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DISTRIBUTION WARNING

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assuredcommunications®

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1-800-358-5297 or wpg@harris.com | www.wpg.harris.com | www.harris.com

AmberJack® **Direction-Finding System**

Product Description

AmberJack® is a phased array direction-finding (DF) antenna system capable of tracking and locating mobile phone users and base stations. The DF antenna array is designed to operate with Harris' Gossamer®, KingFish®, StingRay®, and StingRay II® products, enabling tracking and location of targeted mobile phones, as well as base stations. AmberJack-X operates in the U.S. cellular 850 and PCS 1900 bands, and AmberJack-G operates in the EGSM 900 and DCS 1800 bands. AmberJack-W operates in all the bands above as well as iDEN™ and UMTS bands I and IV.

AmberJack combines Harris' expertise in phased array antenna technology and

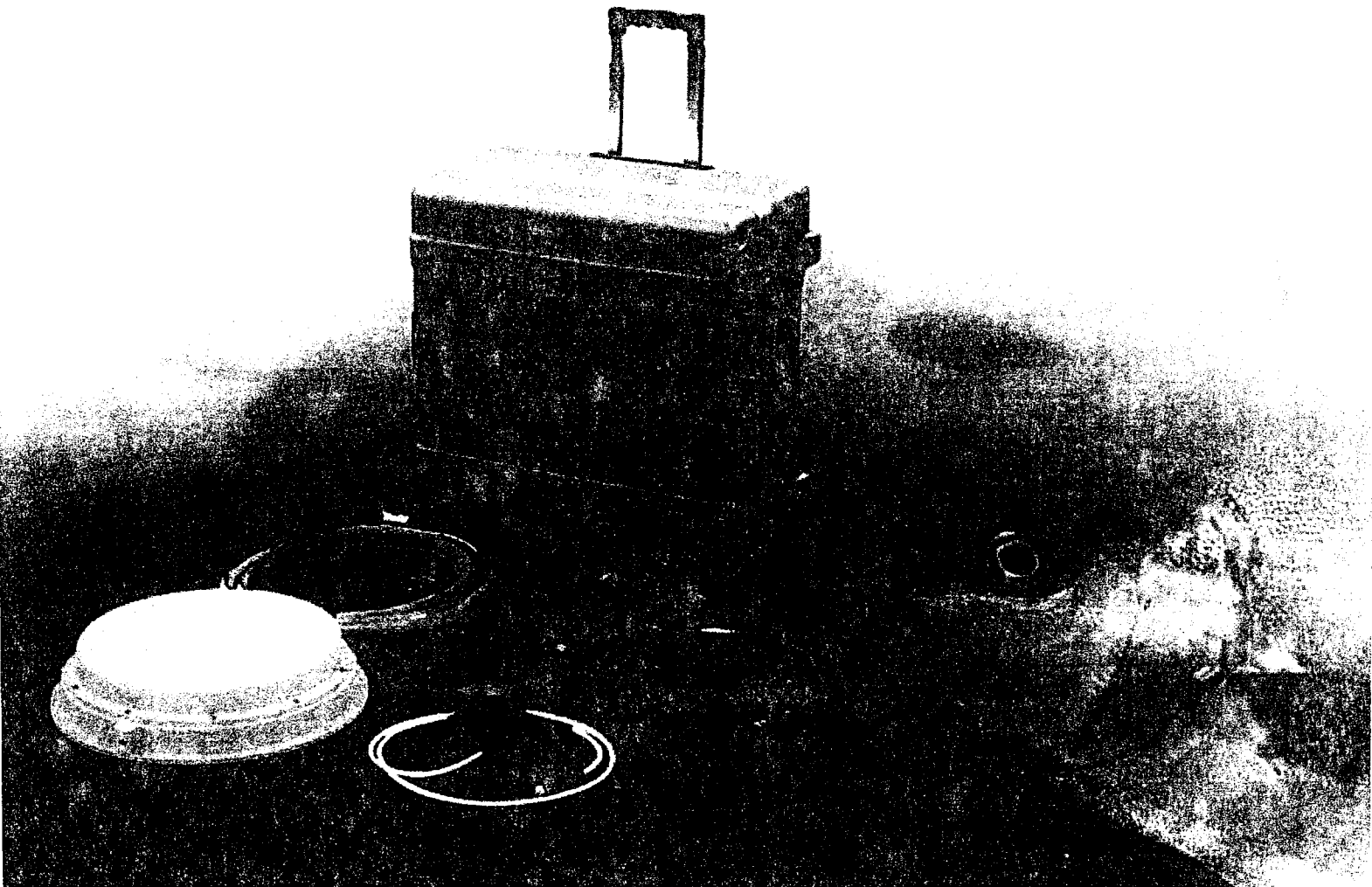
tracking and locating systems to offer a state-of-the-art direction-finding system. Phased array technology offers a universal DF antenna for existing, as well as future cellular standards.

The DF antenna array incorporates magnetic mounts for ease of installation on the roof of a tracking vehicle and offers a low profile for reduced visibility. User-friendly software, developed for the Windows® operating system, enables intuitive control of the AmberJack system and its companion receiver from a single interface. Once a target is engaged, information on the direction to the target is dynamically updated for display on the PC.



Operations Supported

- Locating mobile phones and base stations
- Tracking mobile phones



AmberJack®

Direction-Finding System



Features

- Determines direction of arrival and received signal strength of a targeted mobile phone's transmission
- Determines direction of arrival and received signal strength of a targeted base station's transmission
- Provides real-time display of direction to the target
- Low power and portable
- User-friendly Graphical User Interface (GUI) for the PC

Frequency Coverage

- AmberJack-X (U.S. Cellular/PCS 1900)
 - Cellular reverse: 824-849 MHz
 - Cellular forward: 869-894 MHz
 - PCS reverse: 1850-1910 MHz
 - PCS forward: 1930-1990 MHz
- AmberJack-G (EGSM 900/DCS 1800)
 - EGSM reverse: 880-915 MHz
 - EGSM forward: 925-960 MHz
 - DCS reverse: 1710-1785 MHz
 - DCS forward: 1805-1880 MHz

AmberJack-W (Wideband)

- iDEN reverse: 806-825 MHz
- iDEN forward: 851-870 MHz
- Cellular reverse: 824-849 MHz
- Cellular forward: 869-894 MHz
- PCS reverse: 1850-1910 MHz
- PCS forward: 1930-1990 MHz
- EGSM reverse: 880-915 MHz
- EGSM forward: 925-960 MHz
- DCS reverse: 1710-1785 MHz
- DCS forward: 1805-1880 MHz
- UMTS IV reverse: 1710-1755 MHz
- UMTS IV forward: 2110-2155 MHz
- UMTS I reverse: 1920-1980 MHz
- UMTS I forward: 2110-2170 MHz

External Control

- Laptop PC (Windows® XP Professional)

Power source

- 12 Vdc at 0.5 A

Physical Characteristics

- Size: D = 17", H = 4.2"
- Weight: <14 lbs

Required Accessories (sold separately)

Gossamer with PC Controller, StingRay system, StingRay II, or KingFish with PC Controller

Optional Accessories

Harpoon™ for DF range extension

Catalog Part Number

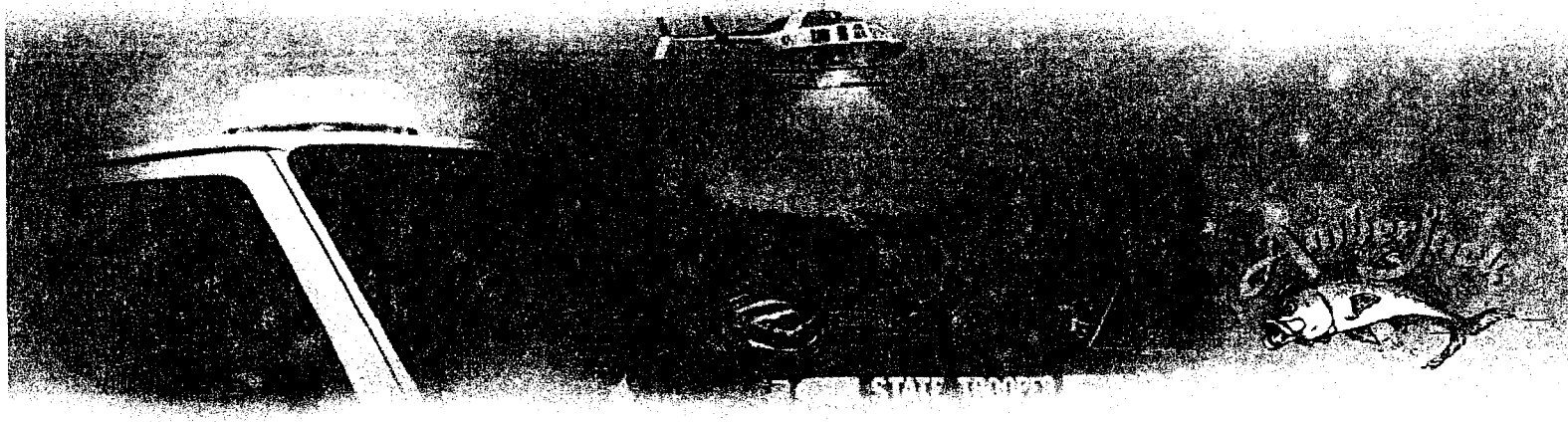
- AJ-X (AmberJack-X)
- AJ-G (AmberJack-G)
- AJ-W (AmberJack-W)

Authorized Federal Supply Service Information Technology Schedule

- SIN: 132-8 Purchase of Equipment
- SIN: 132-12 Maintenance, Repair Services and Repair Parts/Spare Parts

GSA Contract Number: GS-35F-0293J

General Services Administration Federal Supply Service products and ordering information in this Authorized FSS Information Technology Schedule Pricelist are also available on the GSA Advantage! System. Agencies can browse GSA Advantage! by accessing the GSA's home page via the Internet at www.gsa.gov.



Specifications are subject to change without notice. Harris is a registered trademark of Harris Corporation. AmberJack, KingFish, Gossamer, StingRay, and StingRay II are registered trademarks of Harris Corporation. Harpoon is a trademark of Harris Corporation. Windows XP Professional is a registered trademark of Microsoft Corporation. iDEN is a trademark of Motorola, Inc.

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UMTS IV Converter

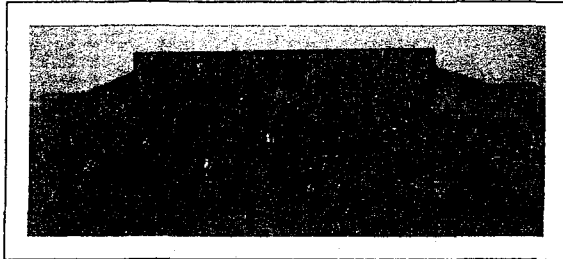
Overview

UMTS IV Converter is a high performance Frequency Converter that enables the StingRay® or KingFish® to operate in the CONUS UMTS IV (2100 MHz DL, 1700MHz UL) band. Its high stability and extremely low phase noise performance enables stand-alone-capability; which allows the StingRay/KingFish and Converter to operate with independent references. Its excellent channel-pair rejection enables operation with high-power PAs.

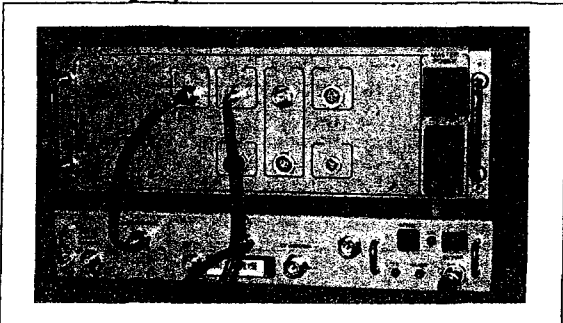
UMTS IV Converter enables the StingRay/KingFish to transmit on the UMTS IV downlink band and to receive on both the uplink and downlink bands. It automatically shuts down the downlink receive path during transmit mode, improving system isolation and reducing power consumption.

Active gain compensation guarantees constant gain over temperature, frequency, aging, and other environmental effects during transmit mode and guarantees constant gain over temperature during receive mode.

UMTS IV Converter



StingRay and UMTS IV Converter



assuredcommunications*

Features

Transmit

- TX conversion from 1842.5 to 2140 MHz
- 60 MHz low ripple bandwidth
- Circuitry turns off during receive only mode
- Active gain compensation over temp and freq
- Active TX LED status indicator

Receive

- RX 1 conversion from 2140 to 1842.5 MHz
- RX 2 conversion bypass
- RX 1 circuitry turns off during transmit mode
- 11dB gain is temperature compensated
- Attenuators are activated from the front panel

Local Oscillators

- 0.5° Integrated Phase Noise (100Hz – 1MHz)
- 0.2ppb over temperature, ±25ppb/year aging
- LED status indicator

Mechanical Housing

- Rugged welded metal case
- Formed lid for convenient transceiver mounting
- Front panel connectors, controls, and indicators

Accessories included:

- Transit Case
- AC/DC converter
- DC/DC converter for vehicular operation
- RF cables for StingRay/KingFish connections
- RF cable for PA connection
- Brackets for KingFish installation

Perez, Raul

From: Vinson, Lin [wvinson@harris.com]
Sent: Thursday, July 31, 2008 10:51 AM
To: Perez, Raul
Subject: t-mobile 2100 network rollout

Raul,

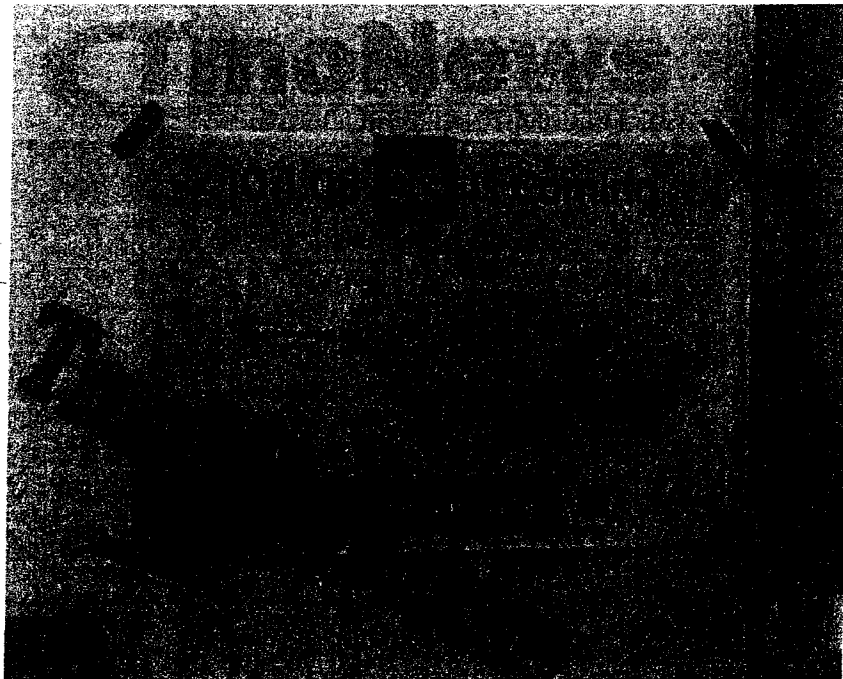
Here is the info we received on T-Mobile's UMTS (2100 AWS) rollout plans. Also I have attached copies of our UMTS converter and AmberJack data sheets for your reference.

Thanks,
Lin

From: [Engadget](#)
URL: <http://www.engadget.com/2008/07/30/t-mobile-3g-service-coming-october-1-to-27-markets/>
Sent from: [adam harder](#) (aharder@harris.com)
Sent to: aharder@harris.com
Comments:

T-Mobile 3G service coming October 1 to 27 markets

07-30-2008



We were already pretty sure this would be happening, but it's looking real now, if 8.5 x 11-inch pieces of paper taped to a window is any indication: T-Mobile is rolling out its 3G service on October 1 to 27 select cities. The above poster was spotted by TmoNews "outside a meeting" and, as you can see, it says,

7/31/2008

"10.1.08 3G is Coming." As far as those launch cities, we have a handy little list for you after the break. By the way, it's entirely possible T-Mobile 3G is already live in your market, though, so don't let this confuse you too much. It could just mean you're next, or, at least by October 1.

- New York City
- Austin
- NJ and Long Island
- Las Vegas
- Minneapolis
- Miami
- Dallas
- Chicago
- Houston
- Philadelphia
- Denver
- Detroit
- Orlando
- Kansas city
- Atlanta
- Los Angeles
- New England (whatever that means)
- Portland
- Sacramento
- San Diego
- Seattle
- Washington DC
- San Francisco
- Birmingham
- Memphis
- Tampa
- Phoenix