

# PORTABLE RADIO ANTENNAS

The following chart summarizes performance, size and cost parameters for various antenna types.

## ANTENNA PERFORMANCE CHART

Type	Bandwidth	Performance	Length	Connector	Frequency	Pricing
Helical Short	6%	Poor (**)	Short	All	VHF/UHF	\$\$
Helical	8%	Average (***)	Shorter	All	Low/Mid/VHF/UHF	\$\$
Helical Quarter Wave	12%	Good (***)	Longer	All except SMA	VHF	\$\$
Whip	12%	Good (***)	Mid	All	UHF	\$
End Fed Half Wave	10%	Better (****)	Longer	Coaxial	800	\$\$\$
Half Wave Dipole	10%	Best (*****)	Longer	Coaxial	800	\$\$\$\$
Wide Band	25%	Good (***)	Longer	Coaxial	All	\$\$\$\$\$
Dual Band	2x8%	Average (***)	Mid	Coaxial	VHF/UHF	\$\$

Due to the high variability of use, measurements are difficult to make on portable antennas. All Larsen portable antenna designs are tested for gain and VSWR using a standard fixture for portable antennas. Gain measurements are determined based on range or chamber measurements. Performance ratings are determined using a VSWR standard of less than 2.0:1.

# PORTABLE RADIO ANTENNAS

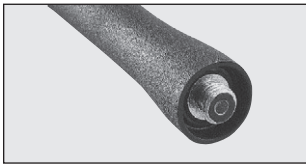


## KULDUCKIE® FREQUENCY COLOR CODE

VHF FREQUENCY	COLOR	UHF FREQUENCY	COLOR
136 - 140 MHz	Blue	406 - 420 MHz	Black
142 - 149 MHz	Green	450 - 469 MHz	Black
150 - 160 MHz	Yellow	470 - 512 MHz	Black
162 - 174 MHz	Red	150 / 450 MHz	Blue

## KULDUCKIE®

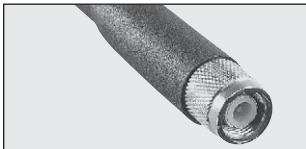
All factory tuned KuL DUCKIES® are ExacTuned to your specified frequency. To order, replace the FREQ, UHF or VHF designation with your desired center frequency.



### 1/4-32X3/16

Male stud type mount with skirt (MX type)  
KD2/12

PART NUMBER	ELECTRICAL TYPE	FREQUENCY BAND	APPROX LENGTH
<b>1/4-32x3/16</b>			
KD2FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD2FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD2FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD2FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"



### TNC

TNC Male coaxial connector unskirted (TN type)  
KD3/13

<b>TNC MALE</b>			
KD3FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD3FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD3FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD3FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"
KD3FREQHQ5	HQ Helical 1/4 $\lambda$	220 - 225 MHz	9 1/2"
KD13(freq)	1/4 $\lambda$	406 - 960 MHz	6"
TNCQ	1/4 $\lambda$	136 - 512 MHz	Varies by freq



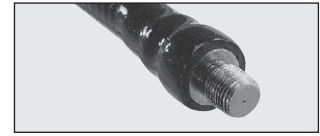
### BNC

BNC Male coaxial connector unskirted  
KD4/14

<b>BNC MALE</b>			
KD4UHF	Helical 1/4 $\lambda$	406 - 512 MHz	3"
KD4VHF1	Helical 1/4 $\lambda$	136 - 141 MHz	8"
KD4VHF2	Helical 1/4 $\lambda$	142 - 149 MHz	8"
KD4VHF3	Helical 1/4 $\lambda$	150 - 161 MHz	8"
KD4VHF4	Helical 1/4 $\lambda$	162 - 174 MHz	8"
KD4FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD4FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD4FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD4FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"
KD4150T	Helical 1/4 $\lambda$	130 - 180 MHz	Varies by freq
KD14(freq)	1/4 $\lambda$	406 - 960 MHz	6"
KD14FREQHW1	HW UHF 1/2 $\lambda$	370 - 409 MHz	16 1/2"
KD14FREQHW2	HW UHF 1/2 $\lambda$	416 - 504 MHz	16 1/2"
BNCQ	1/4 $\lambda$	136 - 512 MHz	Varies by freq

# PORTABLE RADIO ANTENNAS

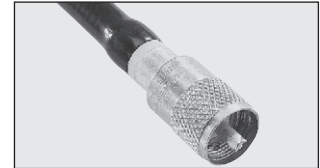
PART NUMBER	ELECTRICAL TYPE	FREQUENCY BAND	APPROX LENGTH
<b>5/16-32X3/8</b>			
KD7FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD7FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD7FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD7FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"



**5/16-32X3/8**

Male stud type mount  
(KR type)  
KD7

<b>PL-259</b>			
KD9FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD9FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD9FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD9FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"
KD19(freq)	1/4 $\lambda$	406 - 512 MHz	6"
PQ	1/4 $\lambda$	144 - 512 MHz	Varies by freq



**PL-259**

Standard UHF Connector  
Male  
KD9/19

<b>5/16-24 THDS Female</b>			
KD22VHF1	Helical 1/4 $\lambda$	136 - 141 MHz	8"
KD22VHF2	Helical 1/4 $\lambda$	142 - 149 MHz	8"
KD22VHF3	Helical 1/4 $\lambda$	150 - 161 MHz	8"
KD22VHF4	Helical 1/4 $\lambda$	162 - 174 MHz	8"
KD22FREQHQ1	HQ Helical 1/4 $\lambda$	136 - 140 MHz	9 1/2"
KD22FREQHQ2	HQ Helical 1/4 $\lambda$	142 - 149 MHz	9 1/2"
KD22FREQHQ3	HQ Helical 1/4 $\lambda$	150 - 161 MHz	9 1/2"
KD22FREQHQ4	HQ Helical 1/4 $\lambda$	162 - 174 MHz	9 1/2"



**5/16-24THDS Female**

Female threaded  
KD22

# PORTABLE RADIO ANTENNAS

## SPOTS!

### SPOTS! FREQUENCY COLOR CODE (SEE COLOR SPOT ON ANTENNA TOP)

VHF	CENTER FREQUENCY	COLOR
144	(138 - 150 MHz)	Gray
156	(150 - 162 MHz)	Orange
160	(154 - 166 MHz)	Green
167	(160 - 174 MHz)	Red

UHF	CENTER FREQUENCY	COLOR
420	(403 - 437 MHz)	Blue
450	(432 - 468 MHz)	Yellow
470	(450 - 490 MHz)	Red
490	(470 - 510 MHz)	Green

800 / 900	CENTER FREQUENCY	COLOR
832	(795 - 870 MHz)	Blue
918	(872 - 964 MHz)	Red
1800	(1710 - 1850 MHz)	Black
1900	(1850 - 1990 MHz)	Black
2400	(2400 - 2500 MHz)	Black

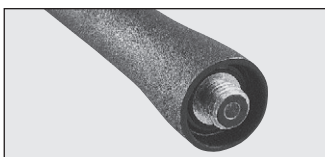


### SPOTS! ANTENNA SELECTION GUIDE BY CONNECTOR TYPE

Determine connector type on the following pages and select the proper antenna based on frequency and type below. Field tunable antennas come with a cutting chart and cap to allow for tuning to exact frequency.

#### 1/4-32X3/16 - MALE STUD CONNECTOR (MX TYPE)

CODE 10



#### 1/4-32X3/16

Male stud type mount with skirt (MX type)

#### Popular Brands Supported

Motorola, Kenwood, Maxon, Midland, Wilson, G.E., Vertex

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL10156	150 - 162	Helical Standard 1/4 $\lambda$	8"
SPHS10156	152 - 160	Helical Short 1/4 $\lambda$	4"
SPHL10160	154 - 166	Helical Standard - 1/4 $\lambda$	8"
SPHL10160IC**	CC to 157	Helical Standard 1/4 $\lambda$	8"
SPHL10167	160 - 174	Helical Standard 1/4 $\lambda$	8"
SPHL10167IC**	CC to 167	Helical Standard 1/4 $\lambda$	8"
SPWH10420	395 - 445	Whip Standard 1/4 $\lambda$	6"
SPHS10420	403 - 437	Helical Short 1/4 $\lambda$	3"
SPWH10450	425 - 475	Whip Standard 1/4 $\lambda$	6"
SPHS10450	432 - 468	Helical Short 1/4 $\lambda$	3"
SPWH10470	450 - 490	Whip Standard 1/4 $\lambda$	6"
SPHS10470	452 - 488	Helical Short 1/4 $\lambda$	3"
SPHL10FT	Field Tunable 136 - 221	Helical Standard 1/4 $\lambda$	8"
SPWH10FT	Field Tunable 400 - 512	Whip Standard 1/4 $\lambda$	6"

\*\* This antenna is designed with a longer "skirt" for use with newer ICOM radios.

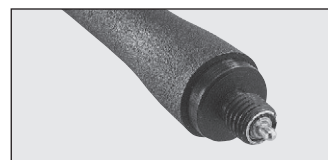
# PORTABLE RADIO ANTENNAS

## SPOTS!

### M7 X 1.00 METRIC CONNECTOR (MD TYPE)

CODE 14

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPEN14832	806 - 866	Whip - 1/2 $\lambda$ End Fed	7"
SPWH14832	782 - 882	Whip - Standard - 1/4 $\lambda$	3"
SPHS14832	800 - 865	Helical - Short - 1/4 $\lambda$	1.5 "
SPEN14918	890 - 960	Half $\lambda$ End Fed	6"
SPHL14FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	7"



#### M7.0X1.0

Male stud type connector unskirted (MD type)

Popular Brands Supported  
G.E., Ericsson

### BNC CONNECTOR (BN TYPE)

CODE 15

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHS15450	432 - 468	Helical - Short - 1/4 $\lambda$	3"
SPHL15FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH15FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



#### BNC

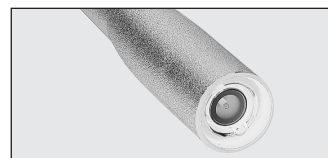
BNC Male coaxial connector unskirted

Popular Brands Supported  
G.E., Kenwood, Motorola, Maxon, Johnson

### BNC CONNECTOR COVERED TYPE (BNX TYPE)

CODE 16

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL16FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH16FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



#### BNC-S

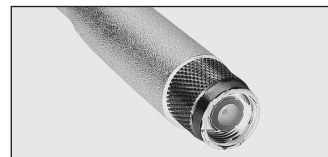
BNC Male coaxial connector fully skirted (BNX type)

Popular Brands Supported  
Ericsson

### TNC CONNECTOR - STANDARD (TN TYPE)

CODE 17

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPDA17832	824 - 894	Center Fed Dipole	8"
SPDA17850/1900	806 - 925 / 1800 - 2170	Center Fed Dipole	7.5"
SPDA17918	890 - 960	Center Fed Dipole	8"
SPDA171800	1710 - 1850	Center Fed Dipole	6.5"
SPDA171900	1850 - 1990	Center Fed Dipole	6.5"
SPDA172400	2400 - 2500	Center Fed Dipole	6"
SPDA17RP918	890 - 960	Center Fed Dipole	8"
SPHL17FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH17FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



#### TNC

TNC Male coaxial connector unskirted (TN type)

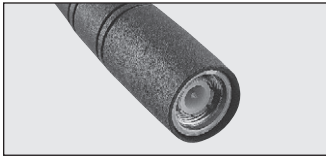
Popular Brands Supported  
Icom, Standard

1 800 ANTENNA (268-3662)

NOTE: Antennas are not to scale

# PORTABLE RADIO ANTENNAS

## SPOTS!



### TNC-S

TNC Coaxial connector fully skirted (TNX type)

#### Popular Brands Supported

Vertex

### TNC CONNECTOR - COVERED (TNX TYPE)

CODE 18

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPHL18FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH18FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



### SMA MALE T1

SMA Male extended base (SMS Type)

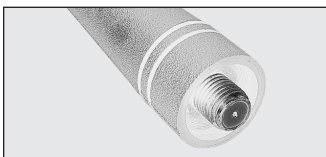
#### Popular Brands Supported

Standard

### SMA MALE STANDARD - EXTENDED BASE - T1 (SMS TYPE)

CODE 20

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWH20832	782 - 882	Whip - Standard - 1/4 $\lambda$	3"
SPHS20832	800 - 864	Helical - Short - 1/4 $\lambda$	1.5"
SPWH20918	863 - 973	Whip - Standard - 1/4 $\lambda$	3"
SPHS20918	872 - 954	Helical - Short - 1/4 $\lambda$	1.5"
SPHL20FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH20FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



### SMA F T1

SMA Female flush insulator & partial skirt (SF Type)

#### Popular Brands Supported

Motorola

### SMA FEMALE - NON STANDARD MOTOROLA TYPE (SF TYPE)

CODE 21

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB21150	136 - 174	Helical - Standard - 1/4 $\lambda$	6.75"
SPHL21156	150 - 162	Helical - Standard - 1/4 $\lambda$	8"
SPHS21156	152 - 160	Helical - Short - 1/4 $\lambda$	4"
SPHL21167	160 - 174	Helical - Standard - 1/4 $\lambda$	8"
SPHS21167	162 - 172	Helical - Short - 1/4 $\lambda$	4"
SPWH21450	425 - 475	Whip - Standard - 1/4 $\lambda$	6"
SPHS21450	432 - 468	Helical - Short - 1/4 $\lambda$	3"
SPHS21490	475 - 512	Helical - Short - 1/4 $\lambda$	3"
SPWH21832	782 - 882	Whip - Standard - 1/4 $\lambda$	3"
SPHS21832	800 - 864	Helical - Short - 1/4 $\lambda$	1.5"
SPWH21918	863 - 973	Whip - Standard - 1/4 $\lambda$	3"
SPHS21918	872 - 954	Helical - Short - 1/4 $\lambda$	1.5"
SPHL21FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH21FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"

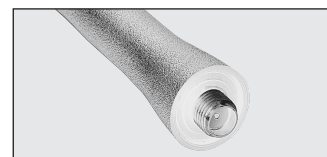
# PORTABLE RADIO ANTENNAS

## SPOTS!

### SMA FEMALE STANDARD - FLUSH BASE - T2 (SFJ TYPE)

CODE 22

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB22150	136 - 174	Helical - Standard - 1/4 $\lambda$	6.75"
SPHL22156	150 - 162	Helical - Standard - 1/4 $\lambda$	8"
SPHL22167	160 - 174	Helical - Standard - 1/4 $\lambda$	8"
SPWH22450	425 - 475	Whip - Standard - 1/4 $\lambda$	6"
SPHS22450	432 - 468	Helical - Short - 1/4 $\lambda$	3"
SPWH22470	450 - 490	Whip - Standard - 1/4 $\lambda$	6"
SPHS22470	452 - 468	Helical - Short - 1/4 $\lambda$	3"
SPHS22490	475 - 512	Helical - Short - 1/4 $\lambda$	3"
SPWH22832	782 - 882	Whip - Standard - 1/4 $\lambda$	3"
SPHS22832	800 - 864	Helical - Short - 1/4 $\lambda$	1.5"
SPWH22918	863 - 973	Whip - Standard - 1/4 $\lambda$	3"
SPHS22918	872 - 954	Helical - Short - 1/4 $\lambda$	1.5"
SPHL22FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH22FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



#### SMA F T2

SMA Female recessed insulator & partial (short) skirt (SFJ type)

#### Popular Brands Supported

EF Johnson, Kenwood

### SMA FEMALE STANDARD - HALF SKIRT BASE - T3 (SFU TYPE)

CODE 23

PART NUMBER	FREQUENCY BAND (MHZ)	ANTENNA TYPE	APPROX LENGTH
SPWB23150	136 - 174	Helical - Standard - 1/4 $\lambda$	6.75"
SPHL23167	160 - 174	Helical - Standard - 1/4 $\lambda$	8"
SPWH23450	425 - 475	Whip - Standard - 1/4 $\lambda$	6"
SPHS23450	432 - 468	Helical - Short - 1/4 $\lambda$	3"
SPWH23470	450 - 490	Whip - Standard - 1/4 $\lambda$	6"
SPHS23470	452 - 488	Helical - Short - 1/4 $\lambda$	3"
SPWH23490	470 - 512	Whip - Standard - 1/4 $\lambda$	6"
SPHS23490	475 - 512	Helical - Short - 1/4 $\lambda$	3"
SPWH23832	782 - 882	Whip - Standard - 1/4 $\lambda$	3"
SPWH23918	863 - 973	Whip - Standard - 1/4 $\lambda$	3"
SPHS23918	872 - 954	Helical - Short - 1/4 $\lambda$	1.5"
SPHL23FT	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH23FT	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"



#### SMA F T3

SMA Female recessed insulator & partial (long) skirt (SFU type)

#### Popular Brands Supported

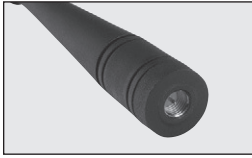
Kenwood (2005 and newer models), Uniden, King

1 800 ANTENNA (268-3662)

NOTE: Antennas are not to scale

# PORTABLE RADIO ANTENNAS

## SPOTS!



**SMA MALE T2**  
SMA Male flush base  
(SM Type)

**Popular Brands**  
G.E., Technophone,  
Relm

### SMA MALE - FLUSH BASE - T2 (SM TYPE)

CODE 24

PART NUMBER	CONNECTOR	FREQUENCY BAND (MHz)	ANTENNA TYPE	APPROX LENGTH
SPDA24700/2700	SMA Male	698-960/1710-2170/2500-2700	Multiband	9"
SPDA24832	SMA	824 - 894	Center Fed Dipole	9"
SPDA24850/1900	SMA	806 - 925 / 1800 - 2170	Center Fed Dipole	7.5"
SPDA24918	SMA M T2	890 - 960	Center Fed Dipole	8"
SPDA241800	SMA M T2	1710 - 1880	Center Fed Dipole	6.5"
SPDA241900	SMA M T2	1850 - 1990	Center Fed Dipole	6.5"
SPDA242400	SMA	2400 - 2500	Center Fed Dipole	6"
SPDA24RP918	SMA M T2 RP	890 - 960	Center Fed Dipole	8"
SPDA24RP2400	SMA M T2 RP	2400 - 2500	Center Fed Dipole	6"
SPDP24832	SMA M T2	824 - 894	Center Fed Dipole	8"
SPDP24918	SMA M T2	890 - 960	Center Fed Dipole	
SPDP242400	SMA M T2	2400 - 2500	Center Fed Dipole	3.5"
SPEN24815	SMA M T2	760 - 870	Whip - End Fed - 1/2 $\lambda$	7
SPHS24832	SMA M T2	800 - 864	Helical - Short - 1/4 $\lambda$	1.5"
SPWB24150	SMA M T2	136 - 174	Wideband	7.5"
SPWB24425	SMA M T2	380 - 470	Wideband	6.5"
SPWB24480	SMA M T2	440 - 520	Wideband	6"
SPWH24815	SMA M T2	760 - 870	Whip - Short - 1/4 Wave	3.5
SPWH24918	SMA M T2	863 - 973	Whip - Standard - 1/4 $\lambda$	3"
SPHS24918	SMA M T2	872 - 954	Helical - Short - 1/4 $\lambda$	1.5"
SPHL24FT	SMA M T2	Field Tunable 136 - 221	Helical - Standard - 1/4 $\lambda$	8"
SPWH24FT	SMA M T2	Field Tunable 400 - 512	Whip - Standard - 1/4 $\lambda$	6"