InTELCOM Coaxial Cable Selection Guide

There are many variables when it comes to selecting a coax for a specific application. This short document serves only as a guide to assist with simple cable selection and is designed for people for whom radio is not necessarily their primary focus.

To find a suitable cable, the following questions might be helpful:

1. What is the application - Where will it be installed? Indoor, outdoor, direct buried, laboratory, rail, marine, tower feeder, etc.?
2. What is the frequency of operation - VHF, UHF, microwave, cellular, GPS?
3. What are the power requirements? Is it a small signal or receive cable where loss is important, or will it carry transmit power, so power handling capability is important?
4. What is the environment? This will determine the jacket material requirements - Flexibility, special certifications, or rugged features, high temperature
5. Will it be permanently installed - Rigid and cheaper rather than flexible?

Frequency	Up to 300 MHz	Up to 1 GHz	300 MHz - 3 GHz	3 GHz - 6 GHz	Above 6 GHz
Flexible Cables	Single screen RG 58 RG 316 RG 178	RG 11 RG 58 RG 316 RG 178 RG 174	Double screen RG 223 K 02252 D G 03232 D-01 RG 316 D RG 214 HIFLEX	Double screen low loss: SPUMA 195 RG 214 HIFLEX G 03262 D-01	Semi-rigid: Multiflex 141 S 04262 B-01
Feeder Cables	RG 213	RG 213	SPUMA 195, 240, 400 Corrugated: SUCOFEED ¼", 3/8", SUCOFEED ½" HF, SUCOFEED ½"	SPUMA 400 SUCOFEED ½" HF SUCOFEED ½" SUCOFEED 7/8"	SUCOFEED ¼" SUCOFEED 3/8" SUCOFEED ½" HF SUCOFEED ½"

Power	Receive to <30 W	< 100 Watts	Up to 250 Watts	Above 250 Watts
Cable	RG 178	RG 58, SPUMA 195	SPUMA 400, RG 11	½" SUCOFEED

Flexibility - Bending Radius	< 25 mm	25-50 mm	50-100 mm	> 125 mm
Cable	RG 178 (Static) RG 174 (Static)	RG 58 RG 223 G 03232 D-01 Multiflex 141	SUCOFEED 1/2" HF SPUMA 195 SPUMA 240	SUCOFEED ½" SPUMA 400

Loss @ 1500 MHz	< 2 dB/m	<0.5 dB/m	< 0.35 dB/m	<0.2 dB/m
Cable	RG 178 RG 11 G 03232 D-01	RG 223, SPUMA 195	SPUMA 240	SUCOFEED ½" HF, ½", SPUMA 400, SUCOFEED 7/8"

Jacket	PVC	PUR, PE	FEP/PFA - High Temp	ENVIROFLEX LSFH	Cross-Linked or RADOX
Cable	RG 223, RG 214 HIFLEX, RG 11	SUCOFEED ½" HF, ½", SPUMA 400, SUCOFEED 7/8", SPUMA 195	RG 178 RG 142 RG 400	SPUMA 240	RADOX RF 58 RADOX RF 400 RADOX RF 213 RADOX RF 214
Temperature	-25º-+85º	-40º-+85º	FEP -65º-+165º PFA -80º-+200º	-40º-+85º	-40º-+85º

Impedance	50 Ω - Radio	75 Ω - TV, Video, CATV
Cable	RG 223, SPUMA 195	RG 59, RG 6, RG 11, BT3002

Application	General/Indoor	Outdoor	Test	Rail	Marine
Cable	RG 178, MF 141	SUCOFEED ½" HF, ½", SPUMA 400, SUCOFEED 7/8", RG 11, SPUMA 195, 240, 400	MF 141 SUCOFLEX	RADOX RF Series, SPUMA Series.	Tinned copper centre and braid. RG 58 G 03262 D-01

Size - Outer Diameter	1-2 mm	2-3mm	4-5 mm	6-9 mm	10-13 mm	> 13 mm
Cable	RG 178	RG_174	RG 223, SPUMA 195 Multiflex 141	SPUMA 240	RG 213, RG 214 HIFLEX, SPUMA 400,	SUCOFEED,1/2" HF, SUCOFEED ½", SUCOFEED 7/8"

Cable Price Guide	+GST per metre
RG 178 B/U	$8.48
RG 174/U	$4.37
RG 58 C/U	$5.13
RG 59 B/U (75 Ω)	$6.92
Multiflex 141	$37.19
RG 223/U	$11.53
G 03232 D-01	$11.03
RG 142 B/U	$24.19
RG 400/U	$25.93
SPUMA 195	$4.33
SPUMA 240	$5.98
SPUMA 400	$8.18
RG 213/U	$13.69
RG 214 HIFLEX	$33.03
SUCOFEED ½" HF (Hi Flex)	$10.28
SUCOFEED ½"	$10.21
SUCOFEED 7/8"	$20.96

Note: Pricing is indicative only, based on 2025 rates (including freight to your NZ store)

Other considerations in cable selection might be:

- Noise or phase performance
- Protection for your signal inside the cable in a high powered RF environment (RF ingress)
- Containment of your signal so it does not interfere with other equipment (RF egress).

Notes and disclaimer:

- While every effort has been made to ensure the accuracy of the data in this document, it contains generalisations, making it difficult to be accurate about particular cables. It is not intended to be an authoritative design guide, rather a quick and simple way to help narrow the bewildering number of cable options that exist, into manageable subsets, in order to simplify everyday cable selection for those who are not experts in coaxial cables, or indeed, radio frequency.
- Most cables have suffixes that indicate a design version, or iteration. Most cable manufacturers make the latest, or most common version. For brevity, these have been omitted in the above tables for space considerations.