

Better Value for RF&Microwave Components



## Microwave Flexible Cable Assembly



# CATALOG

**AGS-TECH Inc.**

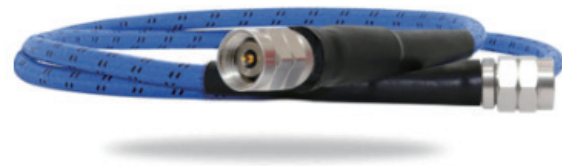
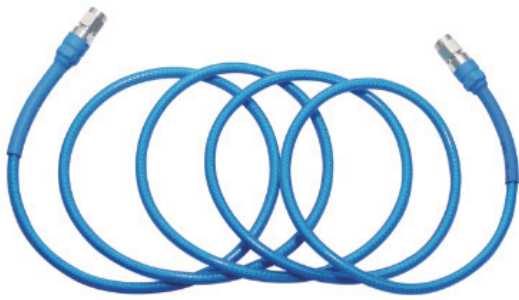
**Phone: +1-505-550-6501 and +1-505-565-5102; Fax: +1-505-814-5778**

**Email: [sales@agstech.net](mailto:sales@agstech.net)    Web: <http://www.agstech.net>**



## Introduction ▶

AGS offers a complete line of high performance flexible microwave cables up to 67GHz. They are constructed using a low or ultra-low density PTFE dielectric offering **excellent loss, outstanding phase stability, and unsurpassed flexibility**—all without sacrificing mechanical integrity. Every cable assembly is tested for insertion loss and SWR and shipped with an individual test plot.



## Features ▶

- ◆ Very low loss cables available up to 18/26.5/40/67GHz
- ◆ Wide selection of outer diameter from 2.2mm to 12mm
- ◆ Outstanding low VSWR (max 1.30:1 to 40 GHz, 1.40 to 67GHz)
- ◆ Good mechanical phase stability(PL series:  $\pm 3^\circ$  @ 18GHz)
- ◆ Ruggedized connector attachment to cables
- ◆ Competitive price and very quick delivery
- ◆ Raw cable in stock and available in customized lengths

---

AGS-TECH Inc.

Phone: +1-505-550-6501 and +1-505-565-5102; Fax: +1-505-814-5778

Email: [sales@agstech.net](mailto:sales@agstech.net) Web: <http://www.agstech.net>



Quick Reference

Model	Connector Options	Connector Body Material	Max Frequency (GHZ)	Max VSWR	Mechanical Phase Stability vs Flexure (max)	Amplitude Stability vs Shaking (max)	Torsion proof	Armor option	Page
<b>PL Series</b>									
PL220	SMA	S/steel	18	1.25	±6 ° DC-40GHZ	±0.3dB DC-40GHZ		Yes	P5-P6
	2.92mm		40	1.3					
	1.85mm		67	1.4					
PL230P	SMA	S/steel	26.5	1.3		±0.1dB DC-40GHZ	Yes	Yes	
	2.92mm		40	1.3					
	1.85mm		67	1.4					
PL360P	SMA	S/steel	18	1.25	±8 ° DC-50GHZ	±0.15DB DC-50GHZ	Yes	Yes	
	3.5mm		26.5	1.25					
	2.92mm		40	1.3					
	2.4mm		50	1.4					
PL360	SMA	S/steel	18	1.25	±8 ° DC-40GHZ	±0.15dB DC-40GHZ		Yes	
	2.92mm		40	1.3					
	3.5mm		26.5	1.25					
PL520	SMA	S/steel	18	1.25	±7 ° DC-26.5GHZ	±0.1dB DC-26.5GHZ		Yes	
	N		18	1.3					
	3.5mm		26.5	1.3					
PL800	SMA	S/steel	18	1.2	±5 ° DC-18GHZ	±0.1dB DC-18GHZ		Yes	
	N		18	1.25					
<b>EL Series</b>									
EL280	SMA	S/steel	26.5	1.35					P7-P8
	N		18	1.3					
	SMP	Becu	18	1.3					
EL520	SMA	S/steel	18	1.35					
	N		18	1.35					
EL750	SMA	S/steel	13.5	1.25					
	N		13.5	1.3					
<b>FL Series</b>									
FL460	SMA	S/steel	26.5	1.35			Yes		P9-P10
	N		18	1.3					
	TNC		18	1.35					
FL520	SMA	S/steel	18	1.3			Yes		
	N		18	1.35					
FL630	SMA	S/steel	18	1.3			Yes		
	N		18	1.35					
	TNC		18	1.35					
<b>SP Series</b>									
SP280	SMA	S/steel	26.5	1.3					P11-P12
	2.92mm		40	1.35					
	SMA	Brass body and S/steel nut	18	1.25					
SP400	SMA	S/steel	26.5	1.3					
	N		18	1.3					
	SMA	Brass body and S/steel nut	18	1.3					
<b>UF Series</b>									
UF360	SMA	S/steel	26.5	1.3	±7 ° DC-40GHZ				P13-P14
	2.92mm		40	1.3					
UF500	SMA	S/steel	26.5	1.3	±6 ° DC-26.5GHZ				
	N		18	1.35					
	TNC		18	1.35					
UF800	SMA	S/steel	18	1.3	±4 ° DC-18GHZ				
	N		18	1.35					
	TNC		18	1.35					



In order to simplify the cable selection process, we have listed the critical data into one table for each product family. Most flexible cable users want minimal insertion loss consistent with smallest size and weight without sacrificing flexibility. Use below tables to select the cable that best suits your needs. These tables do not include all the cables we offer, if you cannot find the desired one, please contact us by email.

### Ultra-Low Loss Phase Stable Amplitude Stable Cable--PL Series ▶



Model		PL220	PL360	PL520	PL800	PL1200
Impedance	Ohms	50	50	50	50	50
Max.Operating Frequency	GHz	67	40	26.5	18	10
Max.Insertion Loss dB/m	1 GHz	0.633	0.375	0.230	0.148	0.099
	12.4 GHz	2.307	1.369	0.838	0.549	0.261@6GHz
	18 GHz	2.869	1.667	1.019	0.671	-
	26.5 GHz	3.543	2.048	1.252	-	-
	40 GHz	4.452	2.557	-	-	-
	67 GHz	5.964	-	-	-	-
Power Handling	Watts(CW) @6GHz	110	650	350	716	1157
Jacket(Outer dia.)	mm	2.20	3.60	5.20	7.80	12.00
Max Weight	g/m	18g	33g	50g	130g	280g
Static Bend Radius	mm	11	18	20	35	60

### Low Loss, Economical Flexible Cable--EL Series ▶



Model		EL280	EL350	EL520	EL750
Impedance	Ohms	50	50	50	50
Max.Operating Frequency	GHz	26.5	18	18	18
Max.Insertion Loss dB/m	1 GHz	0.607	0.386	0.238	0.154
	12.4 GHz	2.385	1.436	0.934	0.626
	18 GHz	2.959	1.757	1.159	0.783
	26.5 GHz	3.721	-	-	-
Power Handling	Watts(CW) @6GHz	38	182	293	628
Jacket (Outer dia.)	mm	2.60	3.50	5.20	7.80
Max Weight	g/m	18	29	60	110
Static Bend Radius	mm	12	14	20	32



## Torsion Resistant Triple-shielding Flexible Cable--FL Series ▶



Model		FL460	FL520	FL630
Impedance	Ohms	50	50	50
Max.Operating Frequency	GHz	26.5	18	18
Max.Insertion Loss dB/m	1 GHz	0.327	0.277	0.222
	12.4GHz	1.193	1.027	0.834
	18 GHz	1.581	1.255	1.022
	26.5GHz	1.784	-	-
Power Handling	Watts(CW) @6GHz	279	298	403
Jacket(Outer dia.)	mm	4.6	5.2	6.2
Max Weight	g/m	50	60	90
Static Bend Radius	mm	20	25	32

## Semi-flexible Alternative Flexible Cable--SP Series ▶



Model		SP280	SP400
Impedance	Ohms	50	50
Max.Operating Frequency	GHz	40	26.5
Max.Insertion Loss dB/m	1 GHz	0.693	0.382
	12.4GHz	2.79	1.693
	18 GHz	3.482	2.161
	26.5GHz	4.408	2.805
	40 GHz	5.709	-
Power Handling	Watts(CW)@6GHz	38	95
Jacket(Outer dia.)	mm	2.8	4.0
Max Weight	g/m	22	49
Static Bend Radius	mm	14	20

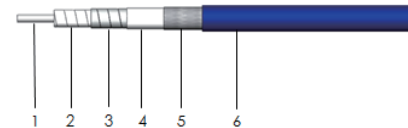


## Ultra-Flexible Low Loss Flexible Cable--UF Series ▶



Model		UF360	UF520	UF800
Impedance	Ohms	50	50	50
Max.Operating Frequency	GHz	40	26.5	18
Max.Insertion Loss dB/m	1 GHz	0.413	0.283	0.178
	12.4GHz	1.576	1.033	0.657
	18 GHz	1.940	1.257	0.803
	26.5GHz	2.416	1.544	-
	40 GHz	3.069	-	-
Power Handling	Watts(CW)@6GHz	156	350	723
Jacket(Outer dia.)	mm	3.6	5.2	7.55
Max Weight	g/m	35	50	130
Static Bend Radius	mm	18	20	35

## New Test Cables PL230P and PL360P ▶

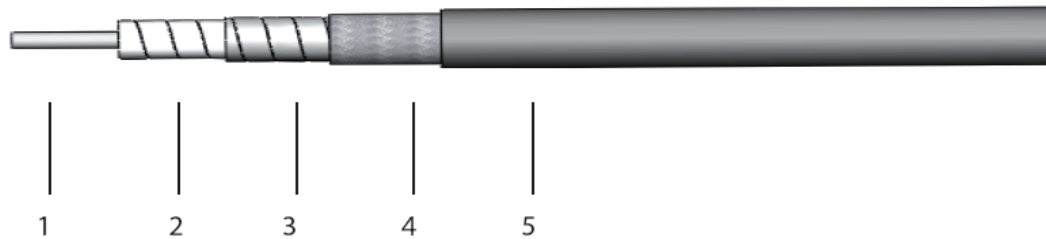


Model		PL230P	PL360P
Structure	Material	Diameter(mm)	Diameter(mm)
1 Center Conductor	Silver plated copper	0.51	0.72
2 Dielectric	Low Density PTFE	1.60	2.15
3 Outer conductor	Silver plated copper tape wrapping	1.76	2.30
4 Interlayer	Low Density PTFE	2.00	2.60
5 Outer shield	Silver plated copper wire braiding	2.35	3.05
6 Jacket	FEP	2.70	3.60
Max.Operating Frequency	GHz	67 GHz	50 GHz
Max.Insertion Loss dB/meter	1 GHz	0.63dB	0.44 dB
	12.4GHz	2.35 dB	1.58 dB
	18 GHz	2.88 dB	1.92 dB
	26.5GHz	3.56 dB	2.35 dB
	40 GHz	4.48 dB	2.92 dB
	50 GHz	5.09dB	3.29 dB
	67 GHz	6.02dB	-
Power Handling	Watts(CW)@18GHz	59W	93W
Max Weight	g/m	18	34
Static Bend Radius	mm	15	18



## PL Series ▶

### Ultra-Low Loss Phase and Amplitude Stable Flexible Cable



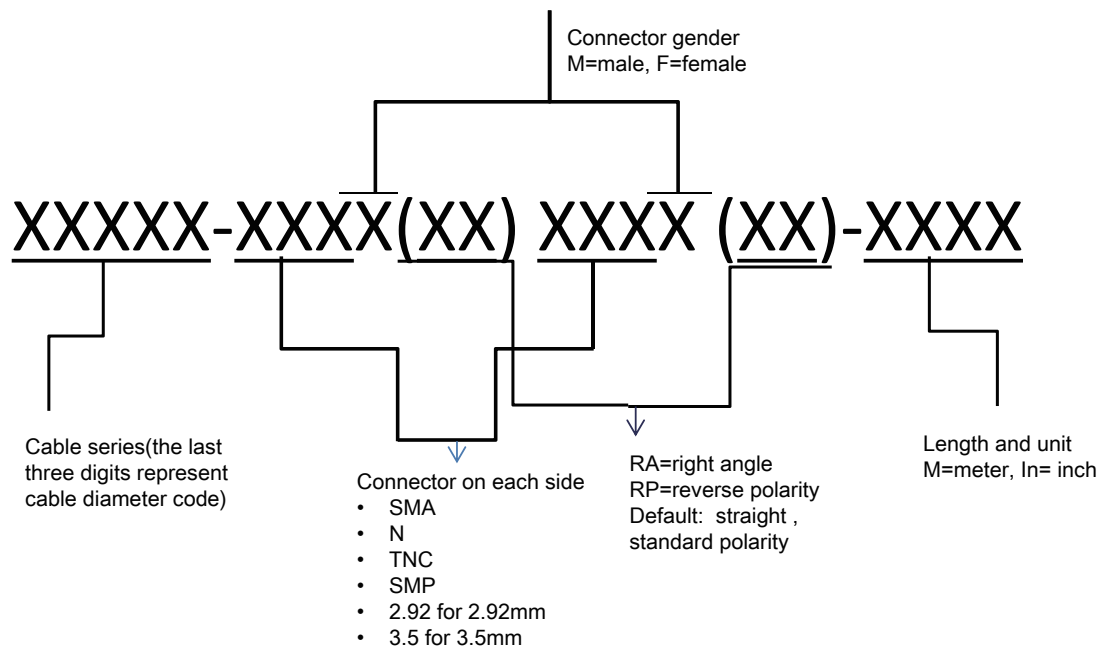
#### Construction

1. **Inner Conductor** : Solid silver plated copper
2. **Dielectric**: Ultra-low density PTFE
3. **Inner Shield**: silver plated copper tape wrap
4. **Outer Shield**: silver plated copper wire braid
5. **Jacket**: FEP

#### Features and Benefits

- ◆ Excellent phase and amplitude stability with flexure
- ◆ Temperature phase stability < 500ppm(-40 C to +80 C )
- ◆ Very low VSWR and loss
- ◆ Ideal for lab testing
- ◆ Available in armor options

### Cable Assembly Ordering Information



For example, **PL360-SMAM (RA) NM-0.5M** refers to the cable assembly PL series PL360 cable, SMA male right angle and N male straight connector, 0.5 meter in length.





## Coaxial Cable Assembly

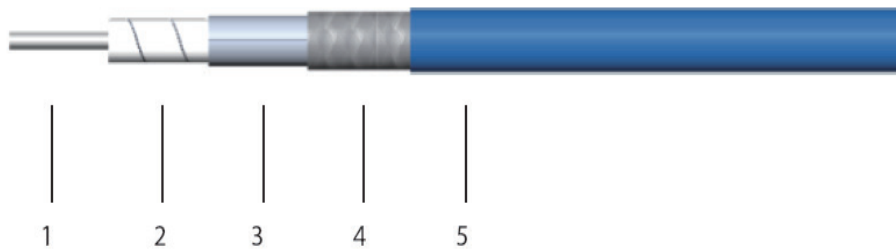
Model	PL220		PL360		PL520		PL800		PL1200	
<b>Size</b>										
Diameter	MM		MM		MM		MM		MM	
Inner Conductor	0.50		0.91		1.45		2.30		3.80	
Dielectric	1.38		2.50		4.00		6.25		10.40	
Outer conductor	1.54		2.70		4.30		6.60		10.78	
Outer shielding	1.89		3.20		4.76		7.10		11.35	
Jacket	2.20		3.60		5.20		7.80		12.00	
<b>Mechanical &amp; Environmental</b>										
Min bending radius(static)	11		18		20		35		60	
Min bending radius(dynamic)	22		36		52		80		110	
Weight	18g/m		33g/m		50g/m		130g/m		280g/m	
Operating Temperature	T: -55°/165°(-67°/329°F)									
<b>Electrical</b>										
Impedance	50 ohm		50 ohm		50 ohm		50 ohm		50 ohm	
Velocity of Propagation	82%		81%		83%		83%		83%	
Dielectric constant	1.60		1.45		1.45		1.45		1.45	
Shielding	>90dB		>90dB		>90dB		>90dB		>90dB	
Time Delay	4.22 nS/m		4.02 nS/m		4.02 nS/m		4.02 nS/m		4.02 nS/m	
Capacitance	80pF/m		80pF/m		80pF/m		80pF/m		80pF/m	
Inductance	0.31 uH/m		0.31 uH/m		0.31 uH/m		0.31 uH/m		0.31 uH/m	
Cutoff frequency	67GHz		46 GHz		29 GHz		19 GHz		10 GHz	
Withstanding Voltage	400DC		1000DC		1500DC		2000DC		5000DC	
Peak Power	0.55kW		2.5kW		5.6kW		10kW		10kW	
Attenuation and Avg Power	Attenuation(+25°C amb), Power(+40°C amb,sea level, VSWR 1:1)									
Frequency(MHz)	dB/m W		dB/m W		dB/m W		dB/m W		dB/m W	
300	0.343	510	0.204	2989	0.125	1608	0.08	3341	0.053	5691
1000	0.633	277	0.375	1626	0.230	875	0.148	1812	0.099	3045
6000	1.598	110	0.938	650	0.574	350	0.373	716	0.262	1157
12400	2.307	76	1.369	445	0.838	240	0.549	487		
18000	2.869	61	1.667	366	1.019	197	0.671	398		
24000	3.356	52	1.942	314	1.189	169				
26500	3.543	49	2.048	298	1.252	160				
40000	4.452	39	2.557	239						
67000	5.964	29								





## EL Series ▶

### Economical Low Loss Flexible Cable



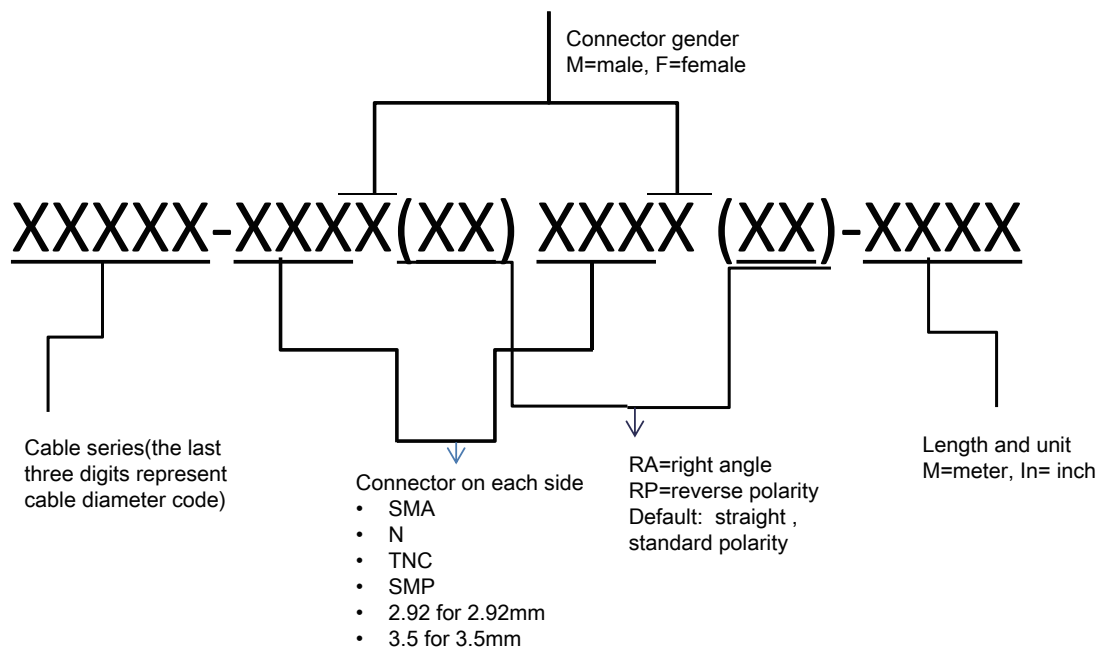
#### Construction

1. **Center conductor:** solid silver plated copper
2. **Dielectric:** low density PTFE
3. **Outer conductor:** aluminum foil wrap
4. **Shielding:** Silver-plated copper wire braid
5. **Jacket:** FEP

#### Features and Benefits

- ◆ Attractive cost vs performance ratio
- ◆ Good amplitude stability vs flex
- ◆ Low loss
- ◆ Up to 26.5GHz

### Cable Assembly Ordering Information



For example, **EL280- SMAM (RA) SMAM-0.5M** refers to the cable assembly EL series EL280 cable, SMA male right angle and SMA male straight connector, 0.5 meter in length.



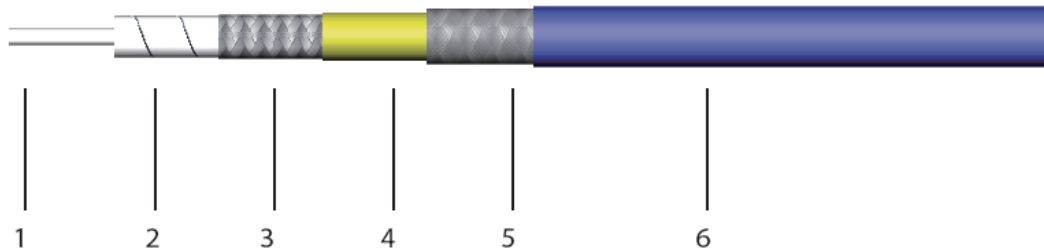
## Coaxial Cable Assembly

Model	EL280		EL350		EL520		EL750	
<b>Size</b>								
Diameter	MM	INCH	MM	INCH	MM	INCH	MM	INCH
Inner Conductor	0.56	0.022	0.94	0.037	1.45	0.057	2.30	0.091
Dielectric	1.67	0.066	2.75	0.108	4.3	0.169	6.80	0.264
Outer conductor	1.75	0.069	2.8	0.110	4.38	0.172	6.88	0.271
Outer shielding	2.10	0.083	3.2	0.126	4.78	0.188	7.33	0.289
Jacket	2.60	0.103	3.50	0.138	5.20	0.205	7.80	0.307
<b>Mechanical &amp; Environmental</b>								
Min bending radius(static)	12	0.472	14	0.551	20	0.787	32	0.709
Min bending radius(dynamic)	28	1.10	35	1.38	52	2.05	78	1.42
Weight	18g/m	.012lbs/ft	29g/m	.019lbs/ft	60g/m	.039lbs/ft	110g/m	.072lbs/ft
Temperature	T: -55 ~ 125(-67/257 °F )							
<b>Electrical</b>								
Impedance	50 Ohms		50 Ohms		50 Ohms		50 Ohms	
Velocity of Propagation	76%		76%		76%		76%	
Dielectric constant	1.73		1.73		1.73		1.73	
Shielding	>90dB		>90dB		>90dB		>90dB	
Time Delay	4.39nS/m 1.34 nS/Ft		4.39nS/m 1.34 nS/Ft		4.39nS/m 1.34 nS/Ft		4.39nS/m 1.34 nS/Ft	
Capacitance	88pF/m 27pF/Ft		88pF/m 27pF/Ft		88pF/m 27pF/Ft		88pF/m 27pF/Ft	
Inductance	0.22uH/m 0.067uH/m		0.22uH/m 0.067uH/m		0.22uH/m 0.067uH/m		0.22uH/m 0.067uH/m	
Cutoff frequency	65 GHz		40 GHz		25 GHz		16 GHz	
Withstanding Voltage	500DC		800DC		1500DC		2000DC	
Peak Power	0.6kW		1.6kW		5.6kW		10kW	
Attenuation and Avg Power	Attenuation(25°C amb), Power(40°C amb, sea level, VSWR 1:1)							
Frequency(MHz)	Db/m	W	dB/m	W	dB/m	W	dB/m	W
300	0.325	187	0.209	850	0.128	1428	0.082	3141
1000	0.607	100	0.386	461	0.238	766	0.154	1674
6000	1.586	38	0.976	182	0.621	293	0.411	628
12400	2.385	26	1.436	116	0.934	195	0.626	413
18000	2.959	21	1.757	101	1.159	157	0.659	392
24000	3.507	17						
26500	3.721	16						



## FL Series ▶

### Torsion Resistant Triple-shielding Flexible Cable



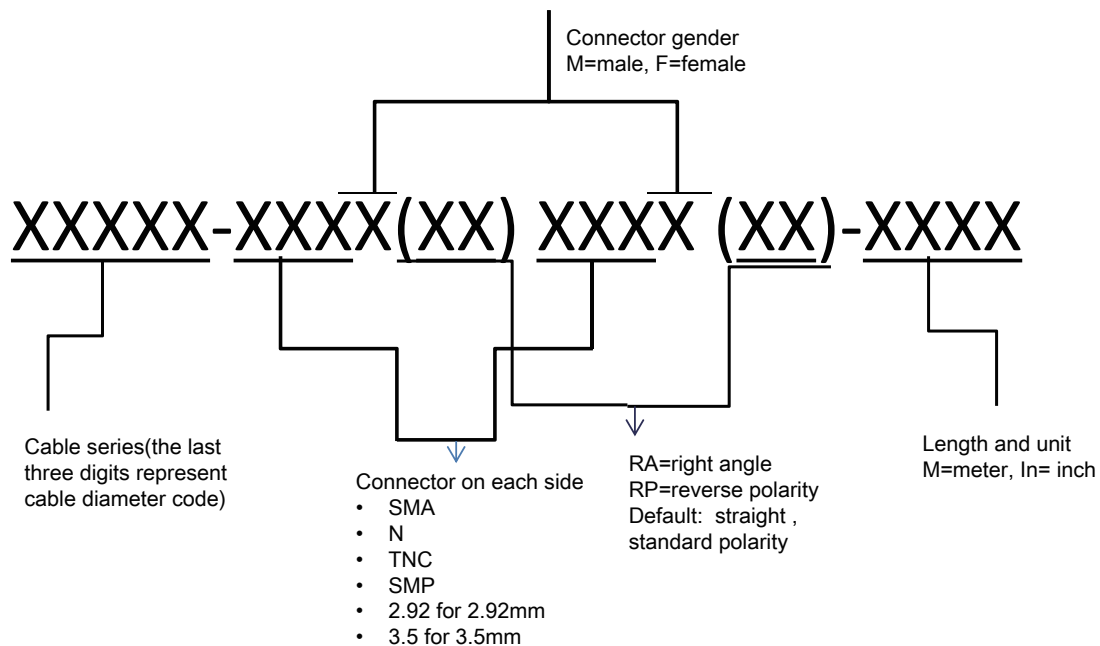
#### Construction

1. **Inner Conductor** : Solid silver plated copper
2. **Dielectric**: Low density PTFE
3. **Outer conductor**: silver plated flat copper ribbon braid
4. **Interlayer**: aluminum foil wrap
5. **Outer Shield**: silver plated copper wire braid
6. **Jacket**: FEP

#### Features and Benefits

- ◆ Up to 26.5GHz
- ◆ Superior shielding effectiveness
- ◆ Torsion resistant and vibration proof
- ◆ Low loss and good amplitude stability with flexure
- ◆ Long flex life

### Cable Assembly Ordering Information



For example, **FL460--SMAM (RA) NM-0.5M** refers to the cable assembly FL series FL360 cable, SMA male right angle and N male straight connector, 0.5 meter in length.



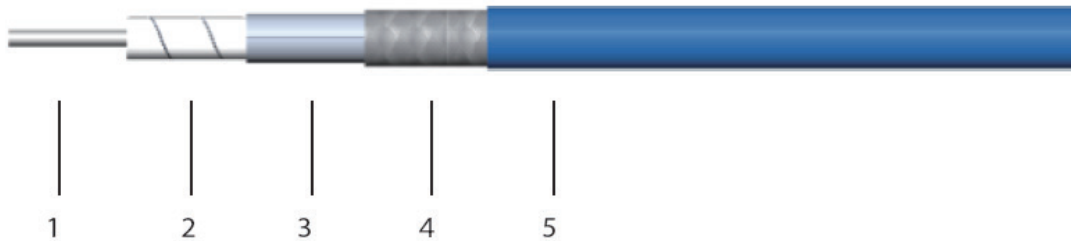
## Coaxial Cable Assembly

Model	FL460		FL520		FL630	
<b>Size</b>						
Diameter	MM	INCH	MM	INCH	MM	INCH
Inner Conductor	1.02	0.04	1.29	0.051	1.57	0.062
Dielectric	3.05	0.12	3.91	0.154	4.72	0.186
Outer conductor	3.25	0.128	4.15	0.163	4.96	0.195
Inner shielding	3.43	0.135	4.28	0.168	5.1	0.201
Outer shielding	3.88	0.153	4.73	0.186	5.55	0.219
Jacket	4.60	0.181	5.2	0.205	6.20	0.244
<b>Mechanical &amp; Environmental</b>						
Min bending radius(static)	20	0.787	25	0.984	32	1.26
Min bending radius (dynamic)	46	1.81	52	2.05	63	2.48
Weight	50g/m	0.036lbs/ft	60g/m	0.042lbs/ft	90g/m	0.061lbs/ft
Temperature	T: -55~200 °C (-67°/392°F)					
<b>Electrical</b>						
Impedance	50 ohm		50 ohm		50 ohm	
Velocity of Propagation	76%		0.76		76%	
Dielectric constant	1.73		1.73		1.73	
Shielding	>100db		>100db		>100db	
Time Delay	4.39 ns/m		4.39 ns/m		4.39 ns/m	
Capacitance	88pF/m		88pF/m		88pF/m	
Inductance	0.22uH/m		0.22uH/m		0.22uH/m	
Cutoff frequency	35GHz		28GHz		23GHz	
Withstanding Voltage	1000DC		1500DC		2000DC	
Peak Power	2.5kW		5.6kW		10kW	
Attenuation and Avg Power	Attenuation(25°C amb), Power(40°C amb,sea level, VSWR 1:1)					
Frequency(MHz)	dB/m	W	dB/m	W	dB/m	W
300	0.178	1285	0.150	1201	0.12	1892
1000	0.327	699	0.277	754	0.222	1024
6000	0.817	279	0.699	298	0.564	403
12400	1.193	191	1.027	203	0.834	272
18000	1.452	157	1.255	166	1.022	222
24000	1.692	135				
26500	1.784	128				



## SP Series ▶

### Semi-flexible Alternative Flexible Cable



#### Construction

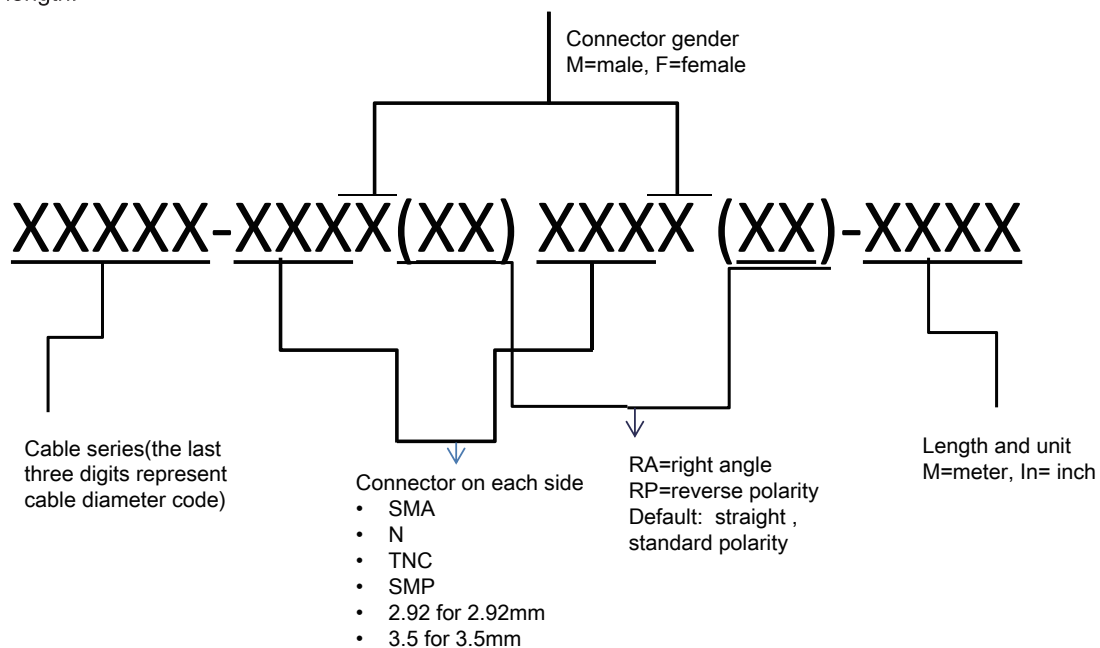
1. **Center conductor:** silver plated copper
2. **Dielectric:** solid PTFE
3. **Outer conductor:** Silver plated copper tape wrapping
4. **Shielding layer:** Silver-plated copper wire braid
5. **Jacket:** Blue FEP

#### Features and Benefits

- ◆ Superior alternative to semi-flexible cable
- ◆ Highly competitive pricing
- ◆ Alternative to Times TFLEX-405/TFLEX-402

### Cable Assembly Ordering Information

For example, **SP280-SMSM-0.5M** refers to the cable assembly SP cable, with SMA male connectors on both ends, 0.5 meter in length.



For example, **FL460--SMAM (RA) NM-0.5M** refers to the cable assembly FL series FL360 cable, SMA male right angle and N male straight connector, 0.5 meter in length.



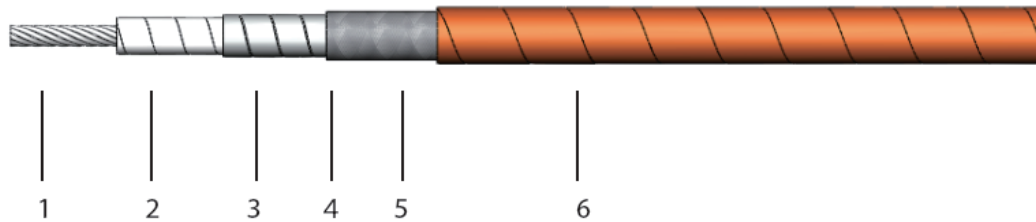
## Coaxial Cable Assembly

Model	SP280		SP400		SP160	
<b>Size</b>						
Diameter	MM	Inch	MM	Inch	MM	Inch
Inner Conductor	0.51	0.020	0.91	0.036	0.29	0.011
Dielectric	1.63	0.064	3.00	0.118	0.94	0.037
Outer conductor	1.79	0.070	3.20	0.126	1.14	0.045
Outer shielding	2.16	0.085	3.55	0.140	1.34	0.053
Jacket	2.8	0.110	4.00	0.157	1.60	0.063
<b>Mechanical &amp; Environmental</b>						
Min bending radius(static)	14	0.551	20	0.787	6	0.236
Min bending radius (dynamic)	28	1.10	40	1.57	16	0.63
Weight	22g/m	.015lbs/ft	49g/m	.033lbs/ft	7g/m	0.005lbs/ms
Temperature	T:-55°/220°(-67° / 392° F)					
<b>Electrical</b>						
Impedance	50 Ohms		50 Ohms		50 Ohms	
Velocity of Propagation	70%		70%		70%	
Dielectric constant	2.04		2.04		2.04	
Shielding	>90dB		>90dB		>90dB	
Time Delay	4.76nS/m	1.45nS/Ft	4.76nS/m	1.45nS/Ft	4.76nS/m	1.45nS/Ft
Capacitance	95pF/m	29pF/Ft	95pF/m	29pF/Ft	95pF/m	29pF/Ft
Inductance	0.26uH/m	0.086uH/m	0.26uH/m	0.086uH/m	0.27uH/m	0.082uH/m
Cutoff frequency	61 GHz		34GHz		108GHz	
Withstanding Voltage	1000DC		1900DC		500DC	
Peak Power	2.5kW		9kW		0.63kW	
Attenuation and Avg Power	Attenuation(+25°C amb); Power(+40°C amb,sea level, VSWR 1:1)					
Frequency(MHz)	dB/m	W	dB/m	W	dB/m	W
300	0.370	187	0.199	512	0.615	71
1000	0.693	100	0.382	267	1.126	39
6000	1.837	38	1.075	95	2.782	16
12400	2.790	25	1.693	60	4.023	11
18000	3.482	20	2.161	47	4.867	9
24000	4.147	17	2.622	39	5.641	8
26500	4.408	16	2.805	36	5.936	7
35000	5.245	13				
40000	5.709	12				



## UF Series ▶

### Ultra-Flexible Low Loss Cable



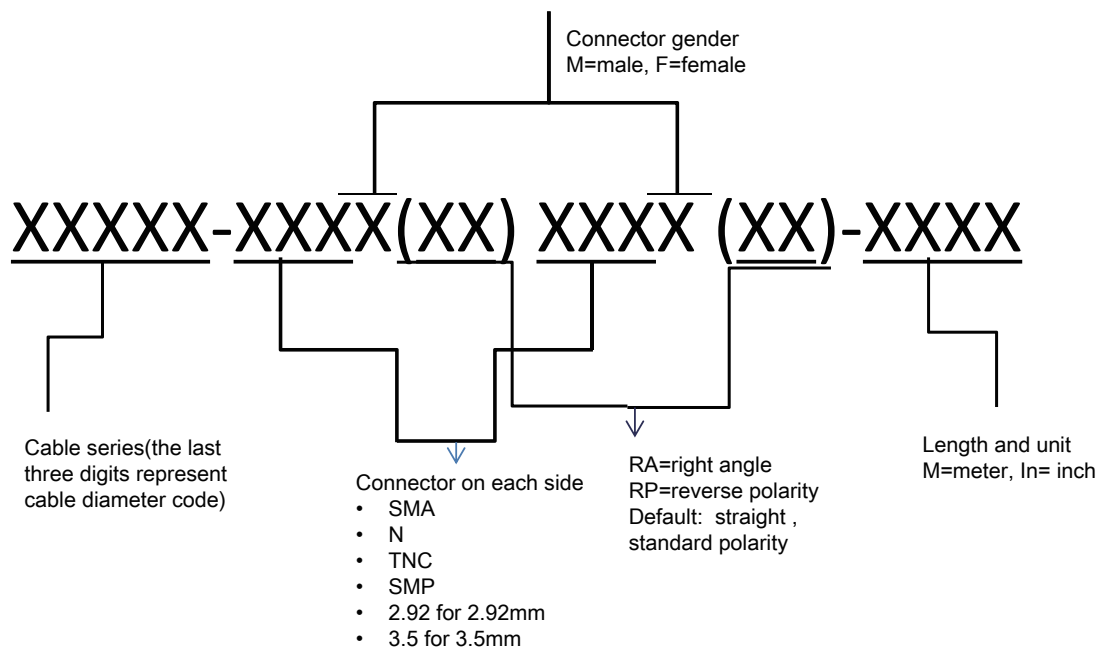
#### Construction

1. **Center conductor:** stranded silver plated copper
2. **Dielectric:** Low density PTFE
3. **Outer conductor:** Silver plated copper tape wrapping
4. **Interlayer:** PTFE
5. **Shielding layer:** Silver-plated copper wire braid
6. **Jacket:** PTFE wrapping or PUR

#### Features and Benefits

- ◆ Very good phase stability over flexure
- ◆ Ultra-flexible with stranded inner conductor
- ◆ High power handling
- ◆ Very low loss
- ◆ Up to 40GHz

### Cable Assembly Ordering Information



For example, **FL460--SMAM (RA) NM-0.5M** refers to the cable assembly FL series FL360 cable, SMA male right angle and N male straight connector, 0.5 meter in length.





## Coaxial Cable Assembly

Model	UF360		UF520		UF800	
<b>Size</b>						
Diameter	MM	Inch	MM	Inch	MM	Inch
Inner Conductor	0.91	0.036	1.45	0.057	2.30	0.091
Dielectric	2.48	0.098	3.75	0.157	6.10	0.240
Outer conductor	2.72	0.107	3.95	0.156	6.38	0.251
Inner shielding	2.00	0.118	4.35	0.187	6.58	0.259
Outer shielding	3.10	0.122	4.80	0.189	7.15	0.282
Jacket	3.60	0.142	5.20	0.205	7.55	0.297
<b>Mechanical &amp; Environmental</b>						
Min bending radius(static)	18	0.709	20	0.787	35	1.378
Min bending radius (dynamic)	36	1.42	52	2.05	80	3.15
Weight	35g/m	.024lbs/ft	50g/m	.034lbs/ft	130g/m	.087lbs/ft
Temperature	T:-55°/220°(-67° / 392° F)					
<b>Electrical</b>						
Impedance	50 Ohms		50 Ohms		50 Ohms	
Velocity of Propagation	83%		83%		83%	
Dielectric constant	1.45		1.45		1.45	
Shielding	>90dB		>90dB		>90dB	
Time Delay	4.02 nS/m	1.22 nS/Ft	4.02 nS/m	1.22 nS/Ft	4.02 nS/m	1.22 nS/Ft
Capacitance	80 pF/m	24.5 pF/Ft	80 pF/m	24.5 pF/Ft	80 pF/m	24.5 pF/Ft
Inductance	0.31 uH/m	0.095uH/m	0.31 uH/m	0.095uH/m	0.31uH/m	0.095uH/m
Cutoff frequency	46 GHz		28 GHz		18 GHz	
Withstanding Voltage	1000DC		1500DC		2000DC	
Peak Power	2.5kW		5.6kW		10kW	
Attenuation and Avg Power	Attenuation(+25°C amb); Power(+40°C amb,sea level,VSWR 1:1 )					
Frequency(MHz)	dB/m	W	dB/m	W	dB/m	W
300	0.223	740	0.154	1340	0.096	3341
1000	414	399	0.283	729	0.178	1812
6000	1.061	156	0.707	291	0.447	717
12400	1.540	105	1.033	200	0.657	488
18000	1.940	85	1.257	164	0.803	399
24000	2.320	60	1.465	141		
26500	2.416	68	1.544	134		
40000	3.069	54				



## Notes on Some Cable Specifications ►

### Phase Stability

#### ◆ Phase Change versus Bending

Cable is wrapped one time (360°) around a 55mm mandrel or the mandrel size is chosen based on cable's bending radius.

#### ◆ Phase Stability versus Temperature (–40 to +80 °C)

The phase stability versus temperature may differ on the length of the cable assembly and the type of connectors.

### Phase Matching

Unless otherwise specified, cable assemblies will not be phase matched. If phase matching is required, below options should be taken into consideration.

#### ◆ Absolute Phase Matching

It consists of matching two or more assemblies to an absolute electrical length plus a tolerance.

#### ◆ Relative Phase Matching

It consists of matching two or more assemblies relative to each other, each assembly in a particular set will meet the matching criteria, it is often ordered in a set.

#### ◆ Phase Tracking

Phase tracking defines the difference in phase change between like cable assemblies with changing temperature.

### RF Shielding

Most of our flexible cables have –90 dB minimum shielding from 1 to 18GHz except the triple shielding FL series. However, cable assembly shielding effectiveness can be limited by the connector design.

### Center conductor( Solid and stranded)

- ◆ With equal size center conductor, cables with solid center conductor tend to be more amplitude stable with flexure, while cables with stranded center conductor tend to be more phase stable with flexure.
- ◆ Stranded center conductor cable is more flexible than solid center conductor cables.
- ◆ With the same structure, material and processing, cables with thicker diameter center conductor feature better attenuation than cables with thinner diameter center conductor.



## Care and Handling Instructions ▶

Microwave cable assemblies are precision components that can be highly fragile without proper use and careful handling. To achieve and maintain reliable performance, the following guidelines should be followed:

1. Cable assemblies should be stored in temperature between  $-50$  and  $+80$  °C and the relative humidity should not exceed 85%.
2. Carefully unpack and unroll the assemblies before use. Avoid kinking cables when straightening from a coil.
3. Use protective caps to prevent contamination whenever connectors are unmated.
4. Observe the minimum bend radius specified for the cable.
5. Avoid twisting, crushing or dropping microwave cable assemblies. Torsion can alter the relative diameters of cable layers and affects the electrical characteristics.
6. When mating connectors with a screwed interface, always hold the connector bodies and turn only the coupling nut. This avoids twisting the cable and ensures minimum wear on the connector pins.

## Test Capabilities ▶

AGS-TECH in-house test capabilities include mechanical, visual, temperature, thermal shock, humidity etc., and a Vector Network Analyzer up to 67GHz.

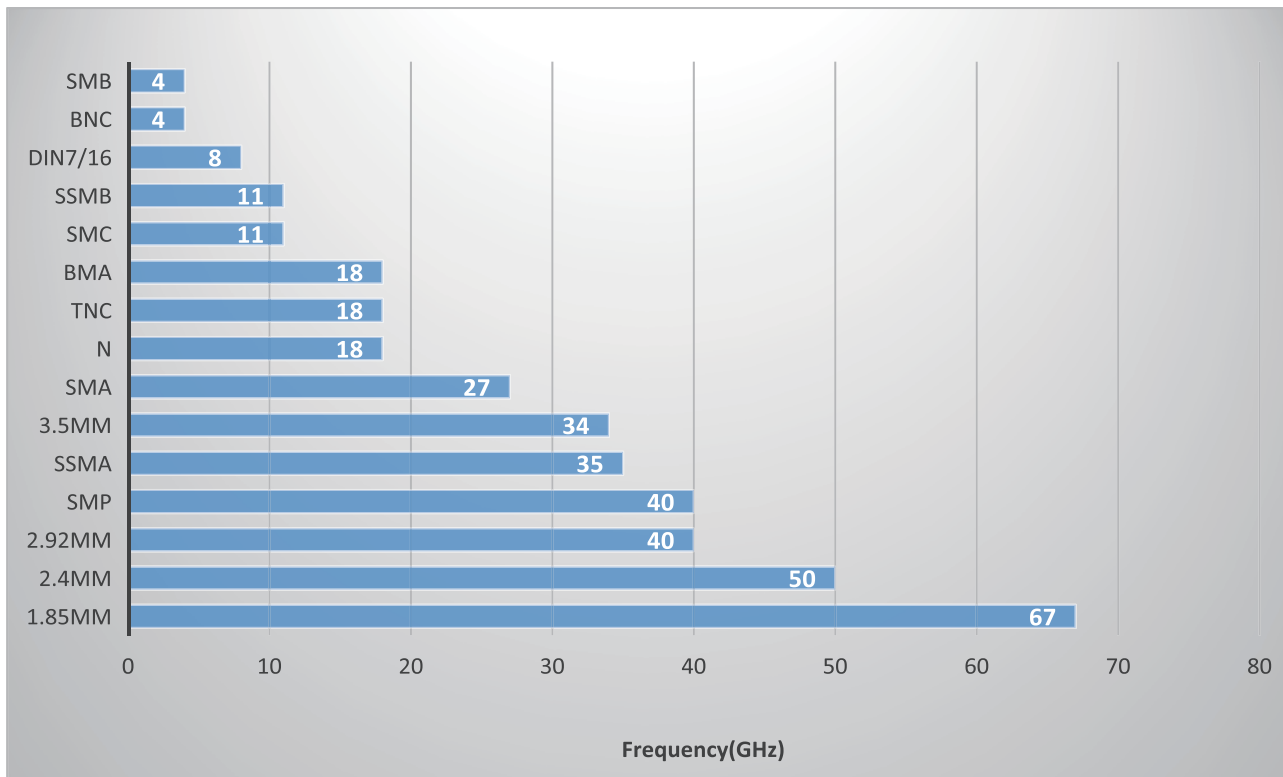
AGS-TECH cables are designed to endure the harsh environments. Some of our cables were tested per the below conditions and did not show visible damage and insertion loss, VSWR remained within specified limits.

- ◆ Humidity Per MIL-STD-810G, Method 507.6, Procedure Ia.
- ◆ Fungus Resistance Per MIL-STD-810G CN1 508.7
- ◆ Shock Per MIL-STD-810G, Method 516.7, Procedure II.
- ◆ Vibration: Per MIL-STD-167-1 with the excitation frequency in the range from 5 to 25 Hz.
- ◆ Corrosion Resistance: Per MIL-STD-810, Method 509.4.



You may want to check the frequency range of various connector types and the Return Loss vs VSWR reference.

## Connector Frequency Range Chart ▶



## VSWR VS Return Loss ▶

VSWR(:1)	Return Loss(dB)
1.01	46.06
1.02	40.09
1.03	36.61
1.04	34.15
1.05	32.26
1.06	30.71
1.07	29.42
1.08	28.3
1.09	27.32
1.10	26.44
1.12	24.94
1.14	23.69

VSWR(:1)	Return Loss(dB)
1.16	22.61
1.18	21.66
1.2	20.83
1.22	20.08
1.25	19.08
1.28	18.22
1.3	17.69
1.33	16.98
1.35	16.54
1.38	15.94
1.4	15.56
1.45	14.72



***Contact Us for***

***Microwave Flexible Cable Assembly***

**AGS-TECH Inc.**

**Phone: +1-505-550-6501 and +1-505-565-5102; Fax: +1-505-814-5778**

**Email: [sales@agstech.net](mailto:sales@agstech.net)    Web: <http://www.agstech.net>**